CORRECTIVE ACTION PROCESS REPORT/PLAN COVER SHEET

CHAPTER 245 - STORAGE TANK AND SPILL PREVENTION ACT

Storage Tank Facility ID #: 51-33620

Consultant Name: Terraphase Engineering Inc.

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Responsible Party Name: Bellwether District Holdings, LLC

Responsible Party Mailing Address: 3144 West Passyunk Ave., Philadelphia, PA 19153

Responsible Party Email Address: apiccone@hrpgroup.com

Media of Concern: [X] **Soil** [ ] **Groundwater**

Contaminant(s) (*e.g. unleaded gasoline*)**:** petroleum products

(check <u>all</u> that apply to the enclosed submission)

- [ ] **Remedial Action Progress Report**
- [ ] **Risk Assessment Report** (***e.g. vapor intrusion, ecological, or human health risk calculations***)
- [ ] **Site Characterization Report – Section 245.310(b)**
  - [ ] Residential [ ] Nonresidential
- [ ] **Site Characterization Report – Statewide Health or Background Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Site Characterization Report – Site Specific Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Plan – Statewide Health or Background Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Plan – Site Specific Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Completion Report – Statewide Health or Background Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Completion Report – Site Specific Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Post Remediation Care Report**
- [ ] **Environmental Covenant**
  - [ ] Draft [ ] Final
- [X] **Other:** Release Investigation Report - No Impacts

FINAL

Release Investigation Report – Tank Group 01

Former Philadelphia Energy Solutions Refinery
3144 West Passyunk Avenue
Philadelphia, Pennsylvania
Incident #56446

Prepared for

Bellwether District Holdings, LLC
3144 West Passyunk Avenue
Philadelphia, Pennsylvania

Prepared by

Terraphase Engineering Inc.
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January 2026

Project Number P044.001.002

terraphase engineering

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Acronyms and Abbreviations

12DBA	1,2-dibromoethane
12DCA	1,2-dichloroethane
124TMB	1,2,4-trimethylbenzene
135TMB	1,3,5-trimethyl benzene
25 Pa. Code	Title 25 Pennsylvania Code
Act 2	Pennsylvania Land Recycling and Environmental Remediation Standards Act
Act 32	Storage Tank and Spill Prevention Act
AOI	Area of Interest
AST	aboveground storage tank
ASTM	American Society for Testing and Material
BDH	Bellwether District Holdings, LLC
bgs	below ground surface
BaA	benzo(a)anthracene
BaP	benzo(a)pyrene
BbF	benzo(b)fluoranthene
BghiP	benzo(g,h,i)perylene
CO&A	Consent Order & Agreement
COC	constituent of concern
CP	cleanup plan
DC	direct contact
ENTACT	ENTACT, LLC
Evergreen	Evergreen Resources Group, LLC; includes Sunoco, Inc. n/k/a ETC Sunoco Holdings LLC, Sunoco, Inc. (R&M) n/k/a Sunoco (R&M), LLC n/k/a Energy Transfer (R&M), LLC and Evergreen collectively referred to as “Evergreen”
Facility	former Philadelphia Energy Solutions refinery facility
FCCU	Fluid Catalytic Cracking Unit
ft	feet or foot
HHRA	human health risk assessment
Indeno	indeno(1,2,3-cd)pyrene
JD2	JD2 Environmental, Inc.
LNAPL	light non-aqueous phase liquid
mg/kg	milligram per kilogram
MSC	medium-specific concentration
MTBE	methyl tert-butyl ether
Non-Res	non-residential

NorthStar	Northstar Contracting Group, Inc.
North Yard	Point Breeze Refinery North Yard
PADEP	Pennsylvania Department of Environmental Protection
PES	Philadelphia Energy Solutions
PESRM	Philadelphia Energy Solutions Refining and Marketing LLC
PID	photoionization detector
PRCP	Post Remedial Care Plan
Ransom	Ransom Consulting, LLC
RAP	Remedial Action Plan
RACR	Remedial Action Completion Report
Report	*Release Investigation Report – Tank Group 01*
RI	remedial investigation
RIR	Remedial Investigation Report
RL	reporting limit
RPD	relative percent difference
SCR	Site Characterization Report
SGW	soil-to-groundwater
SHS	Statewide Health Standard
the Site	Tank Group 01 location within the former Philadelphia Energy Solutions refinery facility
SVOC	semi-volatile organic compound
TDS	total dissolved solids
Terraphase	Terraphase Engineering Inc.
TPI	TPI Environmental, LLC
USAEC	United States Army Corps pf Engineers
USEPA	United States Environmental Protection Agency
VISL	vapor intrusion screening level
VOC	volatile organic compound
VMS	vapor mitigation system
Work Plan	*Aboveground Storage Tank Closure Work Plan*

Certification

Pursuant to the requirements of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2), adopted May 19, 1995, which states:

Interpretation of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in this Commonwealth.

I hereby attest that, as a Professional Geologist licensed in the Commonwealth of Pennsylvania, I am familiar with, and have reviewed and/or prepared the interpretation of the geology and hydrogeology presented in the attached report entitled, *Release Investigation Report – Tank Group 01, Former Philadelphia Energy Solutions Refinery, 3144 West Passyunk Avenue, Philadelphia, Pennsylvania*, dated January 2026.

Based on the available data represented in the report, I believe that the geologic and hydrogeologic interpretations made herein are reasonable and accurate.



January 22, 2026
Date

Christopher J. Voci, PG
Senior Principal Geologist
PA PG003892
Expires September 30, 2027



1 Introduction

Terraphase Engineering Inc. (Terraphase) has prepared this *Release Investigation Report* (the "Report"), on behalf of Bellwether District Holdings, LLC (BDH), formerly known as Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), to detail the results of Site Assessment and Site Characterization activities performed at Tank Group 01 (the "Site") which is located within the Former Philadelphia Energy Solutions refinery facility (the "Facility"). The Facility, which is undergoing closure activities and redevelopment, is located at 3144 West Passyunk Avenue, Philadelphia, Pennsylvania (**Figure 1**). Remediation activities are being conducted at the Facility under the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) by both BDH and Evergreen Resources Group, LLC (Evergreen)[1] in accordance with the Consent Order and Agreement (CO&A) among Pennsylvania Department of Environmental Protection (PADEP), Sunoco, Inc. (R&M) n/k/a Energy Transfer (R&M), LLC, and BDH dated August 14, 2012 and the 2020 First Amendment to that Agreement (2020 Amendment). In accordance with the CO&A, Sunoco/Evergreen is responsible for addressing contamination at the Facility resulting from release(s) which occurred before September 8, 2012, i.e., "Pre-Existing Contamination", and PESRM, now known as BDH, is responsible for addressing contamination at the Facility resulting from release(s) which occurred after September 8, 2012, i.e., "Post-September 2012 Contamination."

The Site Assessment and Site Characterization activities described in this Report were performed in accordance with the applicable provisions of The Storage Tank and Spill Prevention Act (Act 32), Title 25 of the Pennsylvania Code (25 Pa. Code) Chapter 245 (Subchapter D), and Terraphase's (2021) *Aboveground Storage Tank Closure Work Plan* (Work Plan), which was approved by the PADEP on April 23, 2021. As discussed in the Work Plan, closure of the aboveground storage tanks (ASTs) under Act 32 is being pursued through a group closure process, in which ASTs in the same general area (e.g., tank farm) have been demolished, removed, investigated, and evaluated at about the same time. Demolition of the tanks has been proceeding in phases from the north to the south with nine Tank Groups in all. As of May 2023, all tanks subject to closure under Act 32 as part of the Work Plan were demolished.

The data collected as part of the Site Assessment and Site Characterization activities have been evaluated in the context of other information and environmental analytical data for the Facility to determine whether contamination detected during Site Assessment and Site Characterization sampling is (1) Pre-Existing Contamination, (2) Post-September 2012 Contamination associated with a release from an AST, or (3) Post-September 2012 Contamination not associated with a release from an AST. Pre-Existing Contamination will be addressed by Evergreen under its Facility-wide Act 2 case. Post-September 2012 Contamination, not associated with a release from an AST, will be addressed by BDH under Act 2. Post-September 2012 Contamination associated with a release from an AST will be addressed by BDH under Act 32.

[1] Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC ("Evergreen") is managing the legacy remedial work for Sunoco (R&M), LLC. For clarity, Sunoco, Inc. n/k/a ETC Sunoco Holdings LLC, Sunoco, Inc. (R&M) f/k/a Sunoco (R&M), LLC n/k/a Energy Transfer (R&M), LLC effective 4/19/2021 and Evergreen shall be referred to collectively as "Evergreen" in this Report.

The Work Plan (Terraphase 2021) also detailed a tank category system, in which tanks are classified into one of the following three categories:

- **Category 1.** Tanks less than or equal to 21,000 gallons and have no evidence of a release to the environment.
- **Category 2.** Tanks greater than 21,000 gallons and have no evidence of a release to the environment.
- **Category 3.** Tanks that have evidence of a release to the environment identified during infrastructure removal or sampling.

Tanks were initially classified as Categories 1 or 2. Category 1 tanks were inspected visually during demolition for release(s) to the environment. Category 2 tanks were inspected visually, and a Site Assessment sampling program was initiated at each tank. If indications of a release were identified through visual observation or sampling, the tank was reassigned to Category 3. Category 3 tank areas were sampled to characterize the nature and extent of contaminants and assess the need for remedial or interim actions.

Tank Group 01 (**Figure 2**) is located within a larger area of the Facility formerly referred to as the Point Breeze Refinery North Yard (North Yard). Evergreen is currently engaged in characterization and remediation work at the Facility under the Pennsylvania One Cleanup Program under the oversight of the PADEP and the United States Environmental Protection Agency (USEPA; eFACTS PF No. 749898 [Area of Interest (AOI 8)] and 780190 [Philadelphia Refinery Sitewide]). In its associated documentation, Evergreen has identified Tank Group 01 portions of the North Yard as AOI 8. The four ASTs addressed in this Report are shown on **Figure 3** and listed in **Table 1**. No tanks within Tank Group 01 were initially categorized as Category 1.

This Report presents the results of the Site Assessment and Site Characterization activities performed for the four tanks. It identifies those ASTs where potential releases to the environment were (and were not) identified based upon a comparison of the soil analytical results to the following Non-Residential (Non-Res) Statewide Health Standard (SHS) Medium-Specific Concentration (MSC) numeric values for soil:

- Non-Res MSCs for Direct Contact (DC) Exposure to Surface Soil (0-2 feet [ft])
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for Soil to Groundwater (SGW) (Used Aquifer, Total Dissolved Solids [TDS] ≤ 2,500)

Soil characterization results for one AST (i.e., PB 672) in Tank Group 01 did not identify concentrations of regulated substances greater than these applicable SHS MSCs. As such, this AST has “No Obvious Contamination – Sampling Results Meet Standards/Levels” and is considered to have met the closure and requirements set for in Act 32. The remaining three ASTs (i.e., PB 663, PB 666, and PB 668) exhibited soil concentrations of regulated substances greater than these applicable SHS MSCs. Therefore, the conclusion for these tanks is “No Obvious Contamination – Sample Results Do Not Meet Action Levels.” Notification was made to PADEP of potential releases to the environment and Incident No. 56446 was assigned to Tank Group 01 by PADEP.

For the three ASTs where potential releases to the environment were identified, Site Characterization was completed to determine 1) the sources of contamination (per 25 Pa. Code § 245.309(a)(4)), 2) whether the identified contamination is Pre-Existing Contamination, and 3) the extent of migration of regulated substances in soil and groundwater (per 25 Pa. Code § 245.309(b)(4)). For these ASTs, the extent of soil and groundwater concentrations of regulated substances have been delineated to the following Non-Res SHS MSC numeric values:

Soil

- Non-Res MSCs for DC Exposure to Surface Soil (0-2 ft)
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500)

Groundwater

- Non-Res MSCs for Groundwater Exposure for Used Aquifers (TDS ≤ 2,500)

The presence of light non-aqueous phase liquid (LNAPL) in the area has also been defined based upon measurements collected during recent gauging events for monitoring wells within, and in the vicinity of, Tank Group 01.

Based on the Site Assessment and Site Characterization data collected by BDH and data collected by Evergreen near Tank Group 01, the contamination identified in the area of Tank Group 01 represents Pre-Existing Contamination. No evidence of Post-September 2012 Contamination has been identified during the Site Assessment and Site Characterization sampling.

As such, the contamination will be addressed under Act 2 by Evergreen under their existing Act 2 Sites (eFACTS PF No. 749898 [AOI 8] and 780190 [Philadelphia Refinery Sitewide]). **Appendix A** provides a letter from Evergreen documenting their agreement.

As discussed in this Report, sufficient physical data has been collected to:

- Characterize the sources of contamination identified in the area and the extent of regulated substances in soil and groundwater associated with releases to the environment from ASTs;
- Allow for a selection of a Standard for attainment; and
- Determine the need for remedial action and select a remedial alternative.

Because the contamination identified in the area represents Pre-Existing Contamination, the contamination will be addressed by Evergreen under Act 2, and BDH will not be issuing a Remedial Action Plan (RAP) per 25 Pa. Code § 245.311.

Section 2 includes a description of the Site, operational/usage history of the ASTs, and information regarding site topography, geology, hydrogeology, and surface water. This section also includes a summary of known past releases to the environment in the area. **Appendix B** provides the Aboveground Storage Tank System Closure Report forms (2630-FM-BECB0514) for each of the ASTs.

Section 3 discusses the tank infrastructure and removal activities.

Section 4 discusses the results of the Site Assessment and Site Characterization. It documents how adequate characterization has been performed to determine the sources of contamination, the extent of migration of regulated substances in soil and groundwater and provides an ecological screening evaluation. Finally, this section explains the lines of evidence considered in evaluating whether contamination identified in the area is Pre-Existing Contamination or Post-September 2012 Contamination.

Section 5 provides why a specific Standard for attainment has not been identified.

Section 6 provides the conceptual site model which discusses the current and reasonably anticipated future land and groundwater use at and in the vicinity of the Site, provides the scenarios for potential human exposure (i.e., receptors, exposure media, exposure routes), describes the review for the potential presence of threatened and endangered species and/or special concern species, describes the fate and transport of contaminants, and presents the institutional and engineering controls that may be utilized in the future to manage vapor intrusion exposure.

Section 7 provides a summary of this Report and the conclusions of the Site Assessment/Site Characterization for Tank Group 01.

Section 8 presents a listing of the documents referenced in this Report.

2 Background

The 8.7-acre Site lies within the former North Yard (aka AOI 8 [in Evergreen's One Cleanup Program]) of the 1,300-acre former refinery property (the Facility) currently under redevelopment, and is located near the intersection of South 34th Street, Maiden Lane, and Schuylkill Avenue. Prior to demolition, Tank Group 01 consisted of one area containing tanks located in the northern portion of the North Yard. The land surface in this area was not covered (i.e., is pervious) except for asphalt roadways that cut through the portions of Tank Group 01 and the former tank foundations.

The four ASTs addressed in this Report are listed in **Table 1**. Eight other ASTs that were previously located and closed within Tank Group 01 (i.e., PB 661, PB 662, PB 664, PB 665, PB 667, PB 669, PB 670, and PB 671) are not subject to this closure effort. **Figure 3** provides a layout of Tank Group 01.

2.1 Operational History/Usage of the Tanks

The Facility operated as a petroleum refinery between 1860 and 2019. The refinery ceased operations in 2019. The demolition and decommissioning of the subject ASTs began in December 2020. Prior to demolition, the primary products held within these tanks were: heavy gas oil (PB 663 and PB 666), light cycle oil (PB 668), and vacuum oil (PB 672). Additional details regarding the size, contents, and construction of the tanks are provided in **Table 1**.

2.2 Topography

Topography at the Site is generally flat. Regional topography slopes gently to the west towards the Schuylkill River, the nearest water body to the Site. The ground surface elevation in the area of Tank Group 01 is approximately 26 feet (ft) above mean sea level.[2]

2.3 Regional Geology and Hydrogeology

The Facility is located within the Atlantic Coastal Plain Physiographic Province of Pennsylvania, which is defined as having a flat topography, underlain by unconsolidated sediments that thicken to the southeast. The Coastal Plain deposits are sand, gravel, silt, and clay which drape over crystalline igneous and metamorphic rocks. In general, the resulting sediments are approximately 250 ft thick along the Delaware River. These sediments unconformably overlie older, very complexly deformed rocks of the Piedmont physiographic province. Anthropogenic fill overlies the quaternary-aged Coastal Plain deposits in the vicinity of the Facility. Th fill material was placed in the reclamation of lowlands along the banks of the tidal Delaware and Schuylkill Rivers during industrialization.

Native fill material, sediments beneath the fill consist of gray, muddy deposits with occasional sand, gravel, and organic-rich lenses. These sediments were deposited in floodplain, channel, and marsh environments through the Holocene Epoch. The most recent deposits are poorly consolidated and below the water table, as a result of their relatively young geologic age and position along the Schuylkill

[2] North American Vertical Datum of 1988.

River (tributaries and creeks). Below the Holocene deposits is Pleistocene glacial outwash, commonly referred to as the "Trenton Gravel" along the Delaware River valley. Cretaceous-age sand and clay units making up the Potomac-Raritan-Magothy aquifer system underly the Pleistocene deposits.

The sedimentary record near the Facility consists of a complex series of water-bearing sand units which can comprise one or more hydrostatic units. Previous investigations conducted at the Facility have identified two saturated zones – specifically, an unconfined shallow groundwater unit (occurring within the Holocene and Trenton Gravel deposits) and a deep groundwater unit known as the Farrington Sand, which is part of the Potomac-Raritan-Magothy aquifer system. The deeper groundwater unit is separated by a clay unit; as such, the deeper groundwater has been classified as a semi-confined aquifer.

Appendix C provides figures from the *Remedial Investigation Report, Area of Interest 8* (AOI 8 RIR; Stantec 2017b) for reference. This includes Figure 2-7, which provide detailed cross sections of the subsurface in this area from north to south.

2.4 Local Geology and Hydrogeology

The Site Assessment and Site Characterization soil investigations primarily targeted the top-5 ft, with certain Site Characterization investigation borings advanced to depths of up to 15 ft below ground surface (bgs) to vertically characterize the extent of constituents of concern (COCs) in soil. Monitoring wells were installed to depths of up to 14 ft bgs during Site Characterization. Except for the borings installed along the berm in the southwest portion of Tank Group 01, anthropogenic fill was encountered in each of the soil borings at thicknesses up to 15 ft. The native soil beneath the fill layer generally consists of brown sand, clay, and silt. Saturated soil was not encountered during Site Assessment or Site Characterization sampling. In accordance with 25 Pa. Code § 245.310(a)(14), boring and well construction logs for soil borings and monitoring wells installed by BDH during Site Assessment and Site Characterization in Tank Group 01 are provided in **Appendix D**.

Historically, unconfined aquifer groundwater has been first encountered in the vicinity of Tank Group 01 at a depth of approximately 11 to 25 ft bgs (Stantec 2017b). During Site Characterization activities, unconfined aquifer groundwater was typically encountered between approximately 6 and 9 ft bgs. Perched groundwater has also been noted to be present in the anthropogenic fill layers at the Facility, causing mounding and irregular depressions.

Groundwater at the refinery has historically been interpreted to flow to the south toward the convergence of the Delaware and Schuylkill Rivers. However, based on Figure 5-5 of the AOI 8 RIR (Stantec 2017b; included in **Appendix C**) and Figure 2-3-29 of the *Sitewide Fate and Transport Remedial Investigation Report* (2025 Fate and Transport RIR; Stantec 2025; included in **Appendix C**), unconfined aquifer groundwater flow in Tank Group 01 appears to be divided, with groundwater in the eastern and central portions of Tank Group 01 directed toward a groundwater depression in the northeast, while groundwater in the western portion flows southwest towards the Schuylkill River. Based on gauging events performed by Terraphase on January 26 and February 27, 2023 (see Section 4.2.2), groundwater flow in the western portion of Tank Group 01 is directed to the southwest, consistent with Evergreen's gauging data and interpretation. Monitoring wells were not installed in the eastern portion of Tank

Group 01 as part of BDH's Site Characterization. In accordance with 25 Pa. Code § 245.310(a)(16), **Figure 4** provides an illustration of the interpreted groundwater flow regime in the unconfined aquifer including data collected by Evergreen.

2.5 Surface Water

The nearest surface water body is the Schuylkill River, which bounds the Site to the west and is approximately 1,100 ft from Tank Group 01. As described in Section 2.4, unconfined aquifer groundwater flow in Tank Group 01 appears to be divided, with groundwater in the eastern and central portions of Tank Group 01 directed toward a groundwater depression in the northeast, while groundwater in the western portion flows southwest towards the Schuylkill River (Stantec 2017b; Stantec 2025). No wetlands were identified within the bounds of Tank Group 01 (USACE 2020). In accordance with 25 Pa. Code § 250.309 and § 250.406, as referenced by 25 Pa. Code § 245.310(a)(29), and as discussed in detail in Section 4.3.1.2, groundwater contamination has been delineated to Non-Res MSCs and the extent of LNAPL has been defined in the area of Tank Group 01. As such, groundwater contamination associated with potential release(s) from ASTs in Tank Group 01 does not impact the Schuylkill River.

2.6 Known Past Releases to the Environment

Contamination is known to be present in this area of the Facility and must be considered when interpreting the Site Assessment and Site Characterization results for Tank Group 01. This section provides a discussion of past releases and potential other sources of contamination in the Tank Group area.

Previous investigations performed in Tank Group 01 include the AOI 8 RIR (Stantec 2017b), *Site Characterization Report for Aboveground Storage Tank PB 663* (PB 663 SCR; Stantec 2017a), *Storage Tank PB-663 (PA Registration #187A) Site Assessment Report* (SECOR 2004), and *Site Characterization Report/Remedial Action Completion Report for PB 666 Tank Release* (PB 666 SCR/RACR; Stantec 2013) prepared on behalf of Evergreen, and noted prior investigations relating to releases of petroleum products in the vicinity of Tank Group 01.

The AOI 8 RIR (Stantec 2017b) and PB 663 SCR (Stantec 2017a) identified two potential prior releases from subject AST PB 663 in Tank Group 01 (Incident Nos. 34422 and 46786) which occurred in April 2004 and May 2011, respectively. The April 2004 incident involved the release of approximately 158 gallons of gas oil (Stantec 2017b). The release material was recovered using vacuum trucks and absorbent pads and the area was excavated. Post-excavation sampling identified concentrations of benzo(a)pyrene (BaP) and benzo(b)fluoranthene (BbF) greater than the applicable MSCs. In May 2011, holes were identified in the tank floor of PB 663 during an out-of-service tank inspection (Stantec 2017a). Since there was no visual evidence of leaks identified during this inspection, soil sampling was not completed at the time. As part of Evergreen's RI activities in AOI 8, soil samples were collected in August 2016 around the perimeter of the tank. BaP and lead were identified at concentrations greater than the applicable MSCs in these samples (Stantec 2017a). These incidents have been closed (PADEP 2018); however, Incident No. 46786 required the development of a RAP given the concentrations of lead and BaP identified in soil. According to PADEP (2017), the RAP for this incident will be incorporated into an

Act 2 Cleanup Plan to be submitted by Evergreen at a future date. Sanborn Head, on behalf of Evergreen, submitted the *Sitewide Human Health Risk Assessment Addendum and Cleanup Plan* to PADEP on June 30, 2025 (HHRA/CP; Sanborn Head 2025), which discusses the extensive evaluations, including a Facility-wide fate and transport evaluation, HHRA, and ecological risk assessment, Sanborn Head completed to prepare the Facility-wide CP and Post Remedial Care Plan (PRCP). As part of their evaluations, Sanborn Head evaluated Facility-wide soil data, which included the soil samples collected in association with Incident No. 46786. As discussed in the HHRA/CP (Sanborn Head 2025), any potential remaining soil contamination across the Facility will be managed via pathway elimination including mass grading/bulk soil movement, use of impervious cover, vapor intrusion mitigation, and additional risk assessments, as needed.

The AOI 8 RIR (Stantec 2017b) and PB 666 SCR/RACR (Stantec 2013) discussed a potential prior release from subject AST PB 666 in Tank Group 01 (Incident No. 45079), which occurred in April 2013 and involved the release of Fluid Catalytic Cracking Unit (FCCU) main frac bottoms from one of the steam traps within the PB 666 containment berm (Stantec 2013). Impacted soil was excavated in April and May 2013. Post-excavation soil samples identified concentrations of BaP and lead greater than the applicable MSCs (Stantec 2013). This incident received closure approval on January 14, 2014 (PADEP 2014).

As discussed further in Section 4.3.2, because the contamination identified in the area represents Pre-Existing Contamination, the contamination is being addressed by Evergreen under their existing Act 2 Sites (eFACTS PF No. 749898 [AOI 8] and 780190 [Philadelphia Refinery Sitewide]). **Appendix A** provides a letter from Evergreen documenting their agreement.

In addition to the prior releases identified above, the AOI 8 RIR (Stantec 2017b) notes evidence of a historical landfill in the northern portion of AOI 8, located north of Tank Group 01. The AOI 8 RIR explains that aerial photographs circa 1930 and shallow soil sampling suggests that the area may have been used for the disposal of smelter slag. The former Philadelphia Energy Solutions (PES) North Yard Ball Field, also located in the northern area of AOI 8, was identified by USEPA as the former location of a lead smelter known as Metallurgical Products Company.

Appendix E provides tables of soil and groundwater analytical results from investigations conducted prior to Site Assessment and Site Characterization sampling by BDH.

In addition to these known and suspected discrete releases, the Facility was used for petroleum storage and refining for over a century, and both localized and diffuse contamination is present throughout the Facility associated with this past industrial use and with land filling activities (i.e., historic fill[3]). It is important to consider the presence of this contamination in interpreting the Site Assessment and Site Characterization results for Tank Group 01.

Though the soil and groundwater contamination identified at the Site has been determined to be Pre-Existing Contamination, the fate and transport of groundwater contamination in the Tank Group 01 area

[3] "Historic fill", which is defined by PADEP in their (2021a) *Management of Fill Policy*, is material, excluding material disposed in landfills, waste piles and impoundments, used to bring an area to grade prior to 1988, and consisting of a conglomeration of soil and residuals, such as ashes from the residential burning of wood and coal, incinerator ash, coal ash, slag, dredged material and construction and demolition waste.

was reviewed. Approximately 40 groundwater monitoring wells have been installed within or near Tank Group 01 as part of prior investigations performed at the Facility. A groundwater and LNAPL recovery and in-situ treatment system has been installed and operated by Evergreen in the northeastern portion of Tank Group 01 (i.e., Maiden Lane Remediation System) and is still in operation (Stantec 2025).

As discussed further in Section 6.4, Evergreen evaluated the nature and extent of groundwater contamination and its potential future fate and transport across the entire Facility in their 2025 Fate and Transport RIR (Stantec 2025). This RIR was approved by PADEP in April 2025. The RIR demonstrates that the fate and transport of dissolved phase plumes will remain relatively stable or decrease in size and concentration over time through natural attenuation processes.

3 Tank Infrastructure and Removal

In accordance with the Work Plan (Terraphase 2021), Northstar Contracting Group, Inc. (NorthStar) and its subcontractors, JD2 Environmental, Inc. (JD2), a PADEP-certified Aboveground Field Constructed Storage Tank System Removal contractor, was retained by BDH to perform tank demolition and handling, including (1) hazard recognition and abatement; (2) removal and handling of vapors, product, wastewaters, and accumulated sludges; (3) overseeing or verifying cleaning of the storage tank system; (4) dismantling the ASTs; and (5) removal of ancillary equipment and piping.

The demolition of the four Tank Group 01 ASTs was completed in March 2021:

- PB 663 (PADEP No. 074A)
- PB 666 (PADEP No. 043A)
- PB 668 (PADEP No. 008A)
- PB 672 (PADEP No. 044A)

During the removal, it was determined that PB 666 had a double bottom. Double bottoms are forms of secondary containment located under the tanks that allow for visual inspection and potential repair to any observed leaks. BDH retained ENTACT, LLC (ENTACT) to remove the double bottom in January 2022, overseen by JD2.

On behalf of BDH, JD2 submitted to PADEP the required tank registration amendments, copies of which are provided as **Appendix F**.

In accordance with 25 Pa. Code § 245.309(a) and (b)(3), as referenced by 25 Pa. Code § 245.310(a), the Aboveground Storage Tank System Closure Report forms (2630-FM-BECB0514) were previously submitted on September 26, 2022 for Tank Group 01, respectively, and are included as **Appendix B**.

Pursuant to 25 Pa. Code Section 245.310(a)(11), field personnel involved with AST closure activities described in this Report have completed work in accordance with site-specific plans which were implemented in accordance with Occupational Safety and Health Administration requirements in 29 Code of Federal Regulations 1910.120. Each consultant, contractor, subcontractor, and third-party company performing fieldwork associated with the AST closure activities was required to prepare its own site-specific health and safety plan.

4 Site Assessment and Site Characterization

This section discusses the results of the Site Assessment and Site Characterization activities performed following the identification of potential releases to the environment from the Tank Group 01 ASTs.

Section 4.1 describes the Site Assessment sampling and analysis methods that were performed by BDH. Section 4.2 discusses the subsequent Site Characterization sampling. Section 4.3 discusses the soil analytical results and documents the approach to allocate soil and groundwater contamination (including LNAPL, if applicable) to (1) Pre-Existing Contamination, (2) Post-September 2012 Contamination associated with a release from an AST, or (3) Post-September 2012 Contamination not associated with a release from an AST.

4.1 Site Assessment

The Site Assessment soil sampling was performed by Ransom Consulting, LLC (Ransom) and their subcontractor TPI Environmental, LLC (TPI). In total, the effort involved the installation of 69 soil borings and the collection of 71 soil samples (which include two duplicate samples). Prior to the initiation of the sampling activities, the Pennsylvania One Call System (811 Dig Safe) was contacted to identify underground utilities at the Site. In addition, a review of available information provided by facility representatives regarding the presence/absence of underground utilities was used in the selection of sampling locations. Finally, a private utility locater was retained to use geophysical and electromagnetic techniques to identify potential utilities or subsurface structures at proposed drilling locations.

As discussed in the Work Plan (Terraphase 2021), when no evidence of a release to the environment was identified during tank removal, ASTs were subject to Site Assessment sampling using a grid-based approach with additional samples biased toward the locations of pipe connections or other key infrastructure. The Site Assessment sampling was conducted between May 18, 2021 and January 17, 2022.

In accordance with the approved Work Plan, soil borings were completed using direct-push (i.e., Geoprobe) drilling or hand auger methods and advanced through the top 5 ft of soil. Continuous soil cores were collected, and field screened using a photoionization detector (PID) to identify potentially impacted zones. Soil sampling intervals were selected based on the results of field screening (i.e., staining, odors, and elevated PID readings).[4] Where potentially impacted materials were not encountered, discrete samples were collected at a depth of 3.0-3.5 ft bgs consistent with the Confirmatory Sampling Protocol detailed in PADEP's (2021b) *Closure Requirements for Aboveground Storage Tank Systems* which requires sampling "*at least one foot below underground product piping, two feet below product dispensers, remote fills or containment structures and aboveground product lines*

[4] During the Site Assessment, PID readings were taken from every 6-inch interval to help select an appropriate interval for sampling (i.e., the interval exhibiting the highest PID reading). With the exception of the PID readings at the depths from which the soil samples were collected (which are recorded on the boring logs), the field sampling contractor neglected to record the PID readings at each depth. This deficiency was addressed during Site Characterization during the installation of monitoring wells at each AST where soil contamination was observed. During their installation PID and visual observations were taken and recorded from the surface to the depth of the well's installation.

for AST, and three feet below the tank." Where fill was observed, samples of the fill were collected if it consisted of soil or soil-like material. Groundwater was not encountered during the installation of any of these soil borings.

Per 25 Pa. Code § 245.310(a)(14), **Figure 5** shows the location of the Site Assessment soil borings which were installed as part of this effort. **Appendix D** provides copies of the boring logs.

The analysis selected for each soil sample was based on the AST contents as prescribed by PADEP's Short List of Petroleum Products inventory (Table III-5 of the *Land Recycling Program Technical Guidance Manual* [PADEP 2021c]). As shown in **Table 1**, for the four ASTs subject to this closure effort, analytes included one or a combination of the following short lists, based on historical tank contents:

- **Short List 1**. *Leaded Gasoline, Aviation Gasoline and Jet Fuel*: benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-timethylbenzene (124TMB), 1,3,5-trimethylbenzene (135TMB), 1,2-dichloroethane (12DCA), 1,2-dibromoethane (12DBA), and lead.
- **Short List 2**. *Unleaded Gasoline*: benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether (MTBE), naphthalene, 124TMB, and 135TMB.
- **Short List 3**. *Kerosene, Fuel Oil No. 1*: benzene, toluene, ethyl benzene, cumene, MTBE, naphthalene, 124TMB, and 135TMB.
- **Short List 4**. *Diesel Fuel and Fuel Oil No. 2*: benzene, toluene, ethyl benzene, cumene, MTBE, naphthalene, 1,2,4-TMB, and 135TMB.
- **Short List 5**. *Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids*: benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene (BaA), chrysene, BbF, BaP, and benzo(g,h,i)perylene (BghiP).

Volatile organic compounds (VOCs) were analyzed via USEPA Method 8260B. Samples for semi-volatile organic compounds (SVOCs) were analyzed via Method 8270C. Samples for lead were analyzed via USEPA Method 6010B. Laboratory analytical services were provided by Alpha Analytical, Inc. (now Pace Analytical) of Westborough, Massachusetts, which is a PADEP-certified laboratory. Soil samples submitted for analyses were placed directly into laboratory-provided glassware and stored on ice in a cooler under appropriate chain of custody protocol.

Copies of the laboratory reports are included as **Appendix G**.

4.2 Site Characterization

When Site Assessment sampling indicated a potential release in Tank Group 01 (Section 4.1), a Site Characterization plan was developed. In total, the Site Characterization plan included the installation of 17 additional soil borings and the collection of 44 additional soil samples. **Figure 6a** shows the locations of the additional soil borings installed during Site Characterization. The *Supplemental Site Characterization Sampling and Analysis Plan for Groundwater Tank Group 01* (Terraphase 2022) was developed and submitted to PADEP on October 19, 2022, which included the installation of three groundwater monitoring wells, each sampled over two sampling events. **Figure 6b** shows the locations of the groundwater monitoring wells installed and sampled during Site Characterization. This section

discusses how the Site Characterization plan was developed, the methods used during the sampling, and the evaluation of the results following characterization.

4.2.1 Site Characterization Soil Sampling

In accordance with 25 Pa. Code § 245.309(b)(4), the Site Characterization scope for soil in Tank Group 01, conducted between November 29, 2021 and January 5, 2023, included the installation of 17 soil borings and the collection of 44 soil samples. The samples were collected at shallower (i.e., 0-0.5 ft bgs and 1.0-1.5 ft bgs) and deeper (i.e., various 6-inch intervals from 2 to 15 ft bgs) soil depths than samples collected during the Site Assessment as necessary to vertically characterize the extent of COC concentrations in soil, as required by 25 Pa. Code § 245.309(c)(9). The sample collection protocols, and the sampling analyses used during the Site Characterization were consistent with those used during the Site Assessment. Site Characterization soil samples were collected by Ransom.

Releases to soil from the ASTs and associated soil contamination would have been confined to the secondary containment berms. As a result, the horizontal extent of soil contamination associated with the ASTs would be limited to an extent no greater than the berms (except for where piping traverses through the berms). Where space existed between locations of identified soil contamination and the berms, horizontal step out sampling was considered to characterize soil contamination horizontally to within the containment areas.

The Site Characterization sampling methodology included visual inspection and field screening of soil during the installation of the soil borings. This allowed the field team to identify the interval with the greatest potential for contamination. If samples were collected at a depth greater than 0-0.5 ft bgs, it was either because PID readings were greater than those observed from 0-0.5 ft bgs, or PID readings indicated no evidence of VOCs, and samples were then collected from 3.0-3.5 ft bgs per PADEP (2021b). For these situations, shallow soil delineation sampling was unnecessary to determine the extent of concentrations greater than MSCs. Instead, the Site Characterization assumes that the concentrations observed in these subsurface samples also exist at the surface (i.e., 0-0.5 ft bgs).

Where vertical characterization was needed, Site Characterization samples were collected from the depth corresponding to the highest indication of contamination between the Site Assessment sample depth and the water table based upon field screening. Where horizontal delineation was needed, Site Characterization samples were collected from three depths: a surface depth (i.e., between 0-2 ft bgs), a depth corresponding to the highest indication of contamination between the 2 ft bgs and the water table based upon field screening, and immediately above the water table. Also, in order to determine the extent of COC concentrations in soil which are greater than MSCs, prior soil analytical results from Evergreen's remedial investigation (RI) activities were also used, as needed.

Soil boring logs are provided in **Appendix D**, in accordance with 25 Pa. Code § 245.309(c)(9) and 245.310(a)(14)**.**

4.2.2 Site Characterization Groundwater Sampling

In addition to soil characterization and in accordance with 25 Pa. Code § 245.309(b)(4), groundwater monitoring wells were installed in the vicinity of Tank Group 01 tanks PB 663, PB 666, and PB 668, as

depicted on **Figure 6b**. The wells were installed to further characterize the extent of contamination identified in the vicinity of the tanks, as required by 25 Pa. Code §245.309(c)(10). Specifically, monitoring wells were installed in the vicinity of these tanks to target soil-to-groundwater exceedances in addition to the objectives described below.

The locations of the monitoring wells were selected with three objectives in mind: (1) to evaluate groundwater in the vicinity of each tank with suspected release to the environment, (2) to bias monitoring well locations toward areas where higher concentrations have been detected in soil, and (3) to obtain spatial coverage to better understand the nature and extent of COC concentrations in groundwater across Tank Group 01. The data from these wells supplement the extensive groundwater analytical data used by Evergreen to assess the fate and transport of Facility-related groundwater contamination in their 2025 Fate and Transport RIR (Stantec 2025), which was approved by PADEP in April 2025 (PADEP 2025). PADEP considered Stantec's 2025 Fate and Transport RIR, and the data it relied upon, to be sufficient to assess potential future risks to human and ecological receptors and inform management decisions regarding Facility-wide cleanup goals.

Terraphase and TPI installed the shallow overburden pre-pack wells with 3-inch inner diameter direct push drilling methods to depths between 13.5 and 14 ft bgs. The monitoring wells were screened across the water table and constructed with 10 ft of 2-inch diameter Schedule 40 PVC pre-packed well screens with 0.010-inch slotted screen. A #1 sand filter pack was installed to fill the remaining annular space around the pre-packed screen to approximately 1 ft above the screened interval. A #00 fine sand seal was placed above the filter pack and the remaining annular space was filled with hydrated bentonite chips. Monitoring well construction logs are provided in **Appendix D**.

The monitoring wells were installed and developed between January 4 and 6, 2023. The wells were developed with a submersible pump by over pumping to remove multiple well volumes. The submersible pump was surged up and down along the well screen to loosen sediment from the formation and filter pack into the well. Well development continued until the water was visibly clear and free of sediment. Water produced by development of the wells was containerized and treated at the on-Site wastewater treatment plant. The location and elevation of each new monitoring well was surveyed by Taylor Wiseman & Taylor of Mount Laurel, NJ.

Prior to groundwater sample collection, Terraphase collected groundwater level measurements from newly-installed monitoring wells TG01-MW-01, TG01-MW-02, and TG01-MW-03. Gauging was performed using an electronic oil/water interface probe. The results of the gauging are provided in **Tables 2a** and **2b.** To characterize unconfined groundwater conditions in proximity to Tank Group 01 ASTs, groundwater samples were collected from the three wells. LNAPL was not encountered in the three wells BDH installed during either gauging events on January 26 and February 27, 2023.

All permanent monitoring wells were purged and sampled following established low flow protocols outlined in the PADEP Groundwater Monitoring Guidance (Appendix A of the *Land Recycling Program Technical Guidance Manual* [PADEP 2021c]). An initial round of sampling for the wells was conducted on January 25 and 26, 2023. A second sampling event was conducted approximately 30 days later on February 27, 2023. The wells were purged using a submersible pump. Purging continued until groundwater indicator parameters (i.e., water temperature, pH, conductivity, turbidity, and oxygen reduction potential) stabilized, as measured using a properly calibrated Horiba U-52 water quality meter

equipped with a flow-through cell (see **Appendix D**). Each groundwater sample was analyzed for PADEP Short List 1-6 parameters.[5] Copies of the laboratory reports are included in **Appendix G**.

Following sample collection, the bottles were packaged in coolers with bagged ice. A custody record for each sample was documented using a chain of custody form, which accompanied the sample containers during sample collection at the Site, transport to the lab, and analysis.

4.3 Analytical Results

Soil analytical results were compared to the following Non-Res SHS MSC numeric values to identify potential releases to the environment and determine if releases of regulated substances from the ASTs, and their associated piping, could have resulted in this contamination (per 25 Pa. Code § 245.309(a)(4)):

- Non-Res MSCs for DC Exposure to Surface Soil (0-2 ft)[6]
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500)

Where the soil data suggest potential releases of regulated substances from the ASTs, soil and groundwater concentrations were compared to the following Non-Res SHS MSC numeric values to determine the extent of migration of regulated substances in soil and groundwater (per 25 PA Code § 245.309(b)(4)):

<u>Soil</u>

- Non-Res MSCs for DC Exposure to Surface Soil (0-2 ft)
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500)

<u>Groundwater</u>

- Non-Res MSCs for Groundwater Exposure for Used Aquifers (TDS ≤ 2,500)

As discussed further in Section 6.1, soil and groundwater analytical results were not compared to PADEP's Vapor Intrusion Screening Levels (VISLs) as part of this evaluation since there is currently no vapor intrusion exposure in the area (i.e., vapor intrusion pathway is incomplete). Future buildings at the Facility will be subject to vapor intrusion investigation and evaluation to determine if conditions could pose a potential unacceptable risk to future occupants. Similarly, as discussed further in Section 6.1, the comparison to non-residential numeric values is appropriate since the future land use in the area of Tank Group 01 is commercial/industrial.

[5] Short List 6. Waste Oil: benzene, toluene, ethyl benzene, cumene, naphthalene, pyrene, BaA, chrysene, BbF, BaP, indeno(1,2,3-c)pyrene (indeno), BghiP, and lead.

[6] As described in Section 4.2.1, soil sampling intervals were based on the results of field screening (i.e., staining, odors, and elevated PID readings). Where potentially impacted materials were not encountered, discrete samples were collected from native soil at a depth of 3.0-3.5 ft bgs, in accordance with PADEP's (2021b) *Closure Requirements for Aboveground Storage Tank Systems*. Since only subsurface (>2 ft bgs) soil samples were collected from some locations during the Site Assessment, results were conservatively compared to the lower of the Non-Res DC MSCs for Surface and Subsurface Soil.

Based on Site Assessment analytical results from Tank Group 01 ASTs, PADEP was notified via telephone on June 23, 2021, pursuant with 25 Pa. Code § 245.304(c)(1) and 25 Pa. Code § 245.305, that concentrations greater than the applicable MSCs were identified at ASTs PB 663, PB 666, and PB 668. PADEP assigned incident No. 56446 to this notification for tanks in Tank Group 01. A copy of the notification document is included in **Appendix H**.

The following sections provide a more detailed discussion of the results of sampling conducted in proximity to each of the three ASTs where the Site Assessment soil analytical results indicated potential releases to the environment.

4.3.1 Defining the Extent of Contamination

Based on the Site Assessment analytical results, Site Characterization analytical results, and Evergreen's pre-existing data set, the extent of concentrations exceeding MSCs in soil and groundwater in the areas of Tank Group 01 have been defined. Groundwater impacts are shown to extend laterally beyond the Tank Group boundaries. The Site Assessment and Site Characterization soil and groundwater results are tabulated and summarized in **Appendix I**.

4.3.1.1 Soil

As shown in **Table 3**, the following constituents were detected in soil samples from Tank Group 01 at concentrations greater than applicable MSCs:

- Non-Res MSCs for DC Exposure to Surface Soil: lead
- Non-Res MSCs for DC Exposure to Subsurface Soil: naphthalene
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500) MSC: benzene, toluene, BaP, naphthalene, and lead

Figures 7a and **7b** present the horizontal extent of COCs in surface and subsurface soil, respectively, at concentrations greater than applicable Non-Res SHS MSCs.

4.3.1.2 Groundwater

As shown in **Table 4**, in accordance with 25 Pa. Code § 245.309(c)(10)(iv), benzene, toluene, 124TMB, and 135TMB were detected in groundwater samples collected from monitoring wells located in Tank Group 01 at concentrations greater than the Non-Res MSCs for Groundwater Exposure (Used Aquifer). **Figures 8a** and **8b** present the horizontal extent of COCs in groundwater in the area of Tank Group 01 and more broadly across the Facility, respectively, at concentrations greater than the applicable Non-Res SHS MSCs.

4.3.1.3 LNAPL

As depicted on **Figure 9,** the horizontal extent of LNAPL has been delineated in the vicinity of Tank Group 01 based on the most recent Evergreen gauging data collected from previously existing wells.[7] BDH did not identify LNAPL in the three wells they installed during either of their gauging events in January and February 2023. As shown on **Figure 9**, one distinct LNAPL plume has been identified within the bounds of Tank Group 01. The current aerial extent of the LNAPL plume has been defined.

4.3.2 Allocating Contamination

Several lines of evidence have been used to determine if the contamination identified within Tank Group 01, as noted in Sections 4.3.1.1 (Soil), 4.3.1.2 (Groundwater), and 4.3.1.3 (LNAPL), is indicative of (1) Pre-Existing Contamination, (2) Post-September 2012 contamination that is likely from ASTs releases, or (3) Post-September 2012 Contamination related to release(s) from sources other than ASTs. This evaluation included consideration for (1) whether the constituents exceeding MSCs are consistent with the product(s) stored in the tank, (2) whether the spatial distribution suggests the source of the contamination is near an AST, (3) whether the magnitude of the exceedances is consistent with levels observed from other sources in Evergreen's AOIs, (4) whether the spatial distribution is consistent with other sources in the area or if there are outliers, (5) whether the data are consistent with previously characterized contamination known to have existed in the area due to releases prior to September 8, 2012, and/or (6) where there are indicator chemicals present in soil, groundwater, or LNAPL (e.g., gasoline additives) which were not used or stored after September 8, 2012.

In order to explore these lines of evidence, all the soil and groundwater sampling and analytical data available within the Tank Group 01 area were considered. This includes data generated by Evergreen during their previous investigations (i.e., RI), by BDH during sampling performed for AST Closure purposes, as well as for the investigation of release(s) in the area unrelated to ASTs. For illustration of these data sets, the following supplemental figures were developed:

- **Figures 10a** through **10c** present the available soil analytical results from samples collected in proximity to each AST and compare these concentrations to applicable SHS MSCs in Tank Group 01. Databoxes summaries are provided for each soil boring to allow for a detailed review of the soil characterization results in and around each AST. These figures support the identification of COC concentrations indicative of Pre-Existing Contamination (e.g., lead) and whether they are spatially correlated with other COCs which would not be exclusive to older release(s) to the environment.
- **Figures 11a** through **11e** present a generalized illustration of the spatial distribution of the five constituents greater than the applicable MSCs in soil samples collected from the Tank Group 01 area by BDH and Evergreen: benzene, toluene, BaP, naphthalene, and lead.
- **Figure 12** presents the groundwater analytical results for those wells specifically installed and/or sampled by BDH during Site Characterization. Databox summaries are provided for each well and allow for a review of the groundwater characterization results from each sampling event. The

[7] The current estimated extent of LNAPL is based upon the most recent gauging event at each location from a five-year period, which ranged from November 2, 2020 to September 11, 2025.

concentrations are compared to applicable MSCs. Finally, the figure also illustrates the current estimated extent of LNAPL.

Lead in soil and groundwater at the Site is related to either historic fill or releases of gasoline containing tetraethyl lead. Tetraethyl lead was phased out of use in 1996 and historic fill would have been placed prior to September 2012. Accordingly, the presence of lead in soil and groundwater (including in LNAPL, if applicable) is representative of Pre-Existing Contamination.

4.3.2.1 PB 663

PB 663 was formerly used to hold heavy gas oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10a**. As shown, some of the soil analytical results in the PB 663 area were collected by Evergreen. The Site Assessment and Site Characterization provide a more detailed understanding of the distribution of constituent concentrations in soil.

At PB 663, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in 12 out of 17 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, heavy gas oil is often the first fraction distilled from the crude oil distillation unit. It is a heavier, less valuable fraction produced during the distillation process – lighter than residual fuel oil, but heavier than gasoline or kerosene. Heavy gas oil is often further processed through catalytic cracking. Heavy gas oil is the byproduct of refining crude oil where lead is neither used nor added and therefore, the presence of lead in soil is not the result of a release from PB 663.

Further, as discussed in Section 2.6, two prior releases associated with this tank were reported to PADEP on May 7, 2004 and on May 20, 2011 (Incident Nos. 34422 and 46786, respectively). The April 2004 incident involved the release of approximately 158 gallons of gas oil and associated post-excavation sampling only identified concentrations of BaP and BbF greater than the applicable MSCs, not lead. This supports the conclusion that lead would not be expected to be present in heavy gas oil. The May 2011 incident identified holes in the tank floor of PB 663. Since there was no visual evidence of leaks, soil sampling was not completed at the time. In August 2016, additional sampling was completed around the tank as part of Evergreen's RI activities in AOI 8, which identified elevated concentrations of BaP and lead greater than the applicable MSCs. However, since these samples were collected more than five years after the 2011 incident, there was no visual evidence of a release at the time of the incident, and heavy gas oil is not expected to contain lead, the presence of lead in soil cannot be attributed to a release(s) from PB 663 and is likely the result of an un-related release(s) or historic fill in the area both of which would be Pre-Existing Contamination.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.2 PB 666

PB 666 was formerly used to hold heavy gas oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10b**. As shown, limited soil analytical results in the PB 666 area were collected by Evergreen. The Site Assessment and Site Characterization provide a more detailed understanding of the distribution of constituent concentrations in soil.

At PB 666, six constituents (i.e., benzene, toluene, BaP, naphthalene, and lead) were detected at concentrations above the applicable MSCs in 12 out of 29 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, as the AST contained heavy gas oil, the presence of lead in soil is not the result of a release from PB 666.

As discussed in Section 2.6, a prior release associated with this tank was reported to PADEP on April 20, 2013 (Incident No. 45079). The incident involved the release of FCCU main frac bottoms from a steam trap northwest of PB 666 within the PB 666 containment berm. Interim remedial activities included blocking in the leaking steam coil to stop the leak and soil excavation (Stantec 2013). Post-excavation samples identified concentrations of lead greater than the applicable MSC at one location. However, as noted by Stantec (2013), the lead concentration fell within the range of lead results in areas not impacted by PES operations. Detections of other constituents above the applicable MSCs aside from lead (i.e., benzene, toluene, BaP, and naphthalene) were not identified in the vicinity of this previous release located northwest of PB 666 and therefore are unrelated.

As shown on **Figure 10b**, benzene, toluene, BaP, and naphthalene were detected at concentrations greater than the applicable MSCs at three locations (i.e., PB-666-11, PB-666-12, and PB-666-20), which are located outside the tank boundary or along former associated piping. The exceedances of these constituents were identified in samples collected in the subsurface (i.e., >2.5 ft bgs), while a shallower soil sample in the same boring did not identify these constituents at concentrations greater than the applicable MSCs. Since benzene, toluene, naphthalene, and BaP were identified at depths of 2.5 ft bgs and deeper, with shallower concentrations of these constituents below the applicable MSCs, these deeper elevated concentrations are unlikely to be the result of a surficial release from PB 666. Additionally, as shown in **Figures 11a** through **11d**, the concentrations of these constituents detected during Site Assessment and Site Characterization sampling near PB 666 are also generally low and consistent with their range of concentrations characterized across AOI 8 by Evergreen. Therefore, based on the low exceedance rates, range of concentrations, the depth of the samples with the benzene, toluene, BaP, and naphthalene exceedances, and lack of evidence of a Post-2012 release(s) associated with PB 666 in the areas of these concentrations, the presence of these constituents in soil is Pre-Existing Contamination.

As shown on **Figure 12**, one constituent (i.e., benzene) was detected at concentrations above the applicable MSCs in groundwater at TG01-MW-03. No constituents were detected at concentrations above the applicable MSCs in groundwater at TG01-MW-02, which is located adjacent to PB-666-20. Since there is no specific evidence of a Post-September 2012 release of benzene near this tank and because benzene is known to be present in groundwater in this area through Evergreen's Act 2 work, the presence of benzene in groundwater is concluded to be Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.3 PB 668

PB 668 was formerly used to hold light cycle oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10c**. As shown, no soil analytical results in the PB 668 area were collected by

Evergreen. The Site Assessment and Site Characterization provide a more detailed understanding of the distribution of constituent concentrations in soil.

At PB 668, four constituents (i.e., benzene, BaP, naphthalene, and lead) were detected at concentrations in soil above the applicable MSCs in 3 out of 8 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, light cycle oil is a distillate-range product derived from the catalytic cracking of heavy gas oils. It is typically lighter than heavy fuel oil but heavier than gasoline or kerosene. Common uses include blending into diesel fuels, use as a hydrocracking feedstock for jet or low-sulfur diesel production, and fuel oil blending. Light cycle oil is the byproduct of refining heavy gas oils in processes where lead is neither used nor added. Therefore, the presence of lead in soil is not the result of a release from PB 668.

As shown on **Figure 10c**, benzene, BaP, and naphthalene were detected above the applicable MSCs at one location (i.e., PB-668-06) located along associated former tank piping to the south of the AST. At PB-668-06, benzene, BaP, and naphthalene were identified in a sample collected in the subsurface (>2.5 ft bgs), while a shallower soil sample in the same boring did not identify concentrations of these constituents greater than the applicable MSCs. Since these constituent exceedances were identified at depths of 2.5 ft bgs and deeper, with shallower concentrations below the applicable MSCs, these deeper elevated concentrations of benzene, BaP, and naphthalene are unlikely to be the result of a surficial release from PB 668. Additionally, as shown on **Figures 11a, 11c,** and **11d**, the concentrations of benzene, BaP, and naphthalene, respectively, detected during Site Assessment and Site Characterization sampling near PB 668 are also generally consistent with concentrations characterized across AOI 8 by Evergreen. Therefore, based on the low exceedance rate, range of concentrations and their presence in soil near PB 668, depth of the sample with the benzene, BaP, and naphthalene exceedances, and lack of evidence of a Post-2012 release(s) associated with PB 668, the presence of these constituents in soil is concluded to be Pre-Existing Contamination.

As shown on **Figure 12**, four constituents (i.e., benzene, toluene, 124TMB, and 135TMB) were detected at concentrations above the applicable MSCs in groundwater at TG01-MW-01. Since there is no specific evidence of a Post-September 2012 release near this tank and because these constituents are known to be present in groundwater in this area through Evergreen's Act 2 work, the presence of these constituents in groundwater are concluded to be Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.3 Allocation Summary

The data collected as part of the Site Assessment and Site Characterization activities have been evaluated in the context of other information and environmental sampling data for the Facility to determine whether contamination detected during Site Assessment and Site Characterization sampling is (1) Pre-Existing Contamination, (2) Post-September 2012 Contamination associated with a release from an AST, or (3) Post-September 2012 Contamination not associated with a release from an AST. As discussed in Section 4.3.2, Site Assessment and Site Characterization sampling has identified Pre-Existing Contamination. Site Assessment and Site Characterization sampling has not identified Post-September 2012 Contamination associated with releases from ASTs or otherwise. Accordingly, the contamination

identified by the Site Assessment and Site Characterization sampling will be addressed by Evergreen under their existing Act 2 Sites (eFACTS PF No. 749898 [AOI 8] and 780190 [Philadelphia Refinery Sitewide]) (Pre-Existing Contamination). Because none of the contamination in the area was determined to be Post-September 2012, BDH will not be issuing a RAP per 25 Pa. Code § 245.311.

4.4 Ecological Screening Evaluation

Though the contamination identified in Tank Group 01 has been determined to be Pre-Existing Contamination, in accordance with 25 Pa. Code § 245.310(a)(28), an ecological screening evaluation was performed and conducted at the Site. The following describes the ecological screening evaluation that was performed for the Site. This evaluation was conducted in accordance with Section II.B.5 of the *Land Recycling Program Technical Guidance Manual* (PADEP 2021c). The regulatory framework for conducting an ecological screening evaluation under the SHS is outlined in Section II.B.2(e) and summarized in the Ecological Screening Flow Chart provided in Figure II-16 of the *Land Recycling Program Technical Guidance Manual* (PADEP 2021c). The key elements of the screening procedure are comprised of nine steps.

The initial screening phase of the process consists of Step 1, as follows:

- Step 1: Presence of Light Petroleum Product Constituents

As indicated on Figure II-16 of the L*and Recycling Program Technical Guidance Manual* (PADEP 2021c), after completion of the initial screen (Step 1), the remediator may be able to determine that no further ecological screening is required.

Step 1: Presence of Light Petroleum Product Constituents

The first step in the ecological screening process is to determine whether the constituents present in on-Site surface soil (soil at a depth of up to 2 ft) or sediment are related only to light petroleum products (i.e., gasoline, jet fuel A, kerosene, #2 fuel oil/diesel fuel), which have relatively low polycyclic aromatic hydrocarbon content (American Society for Testing and Material [ASTM] International E1739-95). If light petroleum product constituents (including benzene, toluene, ethyl benzene, and xylenes [total]) are the only constituents detected on-Site, then the screening process moves to Step 9 (Final Report: No Further Ecological Evaluation Required). As discussed in Section 4.3.1.1, light petroleum product constituents are present in the post-excavation soil surface samples as well as lead. However, since lead is the only non-light petroleum product present in surface soil at concentrations greater than the applicable MSCs and BDH is not responsible for lead since it is Pre-Existing Contamination, no further ecological evaluation is required.

4.5 Data Quality Assurance, Quality Control, and Usability

While the Site Assessment and Characterization analytical data were not subject to formal data validation, elements were included to help assess data quality and usability of the results to support the project objectives. This included the collection of quality assurance/quality control samples, general quality control checks on the field and laboratory information, and an assessment of the impact of elevated reporting limits (RL) due to sample-specific interferences.

4.5.1 Quality Assurance/Quality Control Samples

During the Site Assessment/Characterization field activities, one trip blank sample per sample cooler and approximately one field blank per 10 samples was submitted to the analytical laboratory to evaluate potential cross-contamination during sample container shipment and storage. Results of the quality assurance and quality control sample analyses are provided in **Appendix I**. VOCs, SVOCs, or lead were not detected in blank samples at concentrations greater than the laboratory RLs. As such, there is no concern associated with laboratory cross-contamination and/or sampling-related cross-contamination related to the samples collected from the Site and do not impact Site Assessment, Site Characterization, or associated cleanup decisions.

Approximately one field duplicate sample per every 20 soil samples was also collected to evaluate the variance in the sampling/analysis. Relative percent differences (RPD) for duplicate pairs were calculated and ranged from 0 to 199 percent with an average of 101 percent. Overall, RPDs <50 percent generally represent the typical level of variability. Reasons for a higher RPD can include sample heterogeneity or samples with high concentrations. Given that the predominant soil type sampled is anthropogenic fill some additional variability is expected and reasonable.

Approximately one field duplicate sample per every 20 groundwater samples was also collected to evaluate the variance in the sampling/analysis. RPDs for duplicate pairs were calculated and ranged from 0 to 199 percent with an average of 28 percent. Overall, RPDs <50 percent generally represent the typical level of variability.

4.5.2 General Quality Control Checks

General quality control checks were also performed on the field information and laboratory analytical deliverables. This included checking and reviewing laboratory logins and completed chains of custody, confirming that the requested analyte lists were reported, and that the sample nomenclature conformed to the proposed sampling scope of work. In some cases, multiple analyses were reported by the laboratory and a general review of elements such as surrogate recoveries, qualifiers, analytical limits, and laboratory narratives were performed to identify which results would be used for a given sample. A log of these general checks is provided in **Appendix I** along with the methodology used to select between multiple results when provided by the analytical laboratory.

4.5.3 Reporting Limits

For non-detect COCs, RLs were evaluated against the applicable MSCs. The maximum RLs for one COC was above the MSC, as summarized in the table below.

Reporting Limits Greater than MSCs

COC	Maximum Analytical Limits (mg/kg)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC (mg/kg)
12DBA	0.15	0.005

Based on prior discussions with Alpha Analytical, Inc. (now Pace Analytical) and other PADEP-certified laboratories, USEPA Method 8260 provides laboratories with the ability to run the analysis via high-level or low-level vials, which is dependent on sample-specific conditions (i.e., interferences from non-target analytes). Samples may need to be diluted to be run via the high-level vial if an abundance of non-target analytes are present in the sample. In these situations, running via the low-level vial is not possible due to the non-target analyte interferences. This dilution results in higher method detection limits and RLs for samples. Due to sample-specific conditions, resampling and reanalyzing soil to assess whether these compounds are present in soil is not a viable solution.

The maximum RL for 12DBA exceeded the SGW MSC. The exceedance rate was relatively low for 12DBA (i.e., 9.9 percent). The locations with elevated RLs often coincide or are nearby samples of locations with concentrations exceeding the applicable MSCs for other chemicals, indicating no impact on Site Characterization conclusions or associated cleanup decisions. In situations where these locations are not in the vicinity of other locations with concentrations exceeding applicable MSCs, they are delineated by other locations with concentrations below the applicable MSCs or the tank containment berms. As the contamination identified in Tank Group 01 has been determined to be Pre-Existing Contamination, these exceedances also do not impact Site Characterization or associated cleanup decisions.

Even if present due to a release(s) from a tank, since 12DBA was historically used as a scavenger for lead in anti-knock gasoline mixtures[8] and up until the ban of leaded gasoline in the 1990s could have been present in gasoline-related releases to the environment, these concentrations would be associated with Pre-Existing Contamination.

[8] https://www.atsdr.cdc.gov/toxprofiles/tp37.pdf

5 Selection of Standard

As described in Section 4.3.2, the data collected as part of the Site Assessment and Site Characterization activities have been evaluated in the context of other information and environmental analytical data for the Facility. These sampling efforts have identified Pre-Existing Contamination. These sampling efforts have not identified Post-September 2012 Contamination. Accordingly, the contamination identified by the Site Assessment and Site Characterization sampling will be addressed under Act 2 by Evergreen (Pre-Existing) (eFACTS PF No. 749898 [AOI 8] and 780190 [Philadelphia Refinery Sitewide]).

Because Post-September 2012 tank-related contamination has not been identified and because the contamination identified will be managed under Act 2, a specific Standard for attainment has not been identified and BDH will not be issuing a RAP per 25 Pa. Code § 245.311.

6 Conceptual Site Model

6.1 Land and Groundwater Use

The area encompassing Tank Group 01 is being redeveloped. Current and reasonably anticipated future land use in the area of the Tank Group is commercial/industrial.

Sampling and evaluation of the vapor intrusion pathway has not been conducted since there is no current vapor intrusion exposure in the area (i.e., vapor intrusion pathway is incomplete). In order to address the requirements under 25 Pa. Code § 245.309(c)(12), as referenced by 25 Pa. Code § 245.310(a) and 245.310(a)(32), as an institutional control, prior to their construction and occupancy, on-facility buildings which could be occupied in the future will be subject to vapor intrusion investigation and evaluation to determine if conditions (i.e., volatilization of COCs from soil, groundwater, and/or LNAPL) could pose an unacceptable risk to occupants. As needed, vapor mitigation systems (VMS) will be incorporated into the design and construction of such buildings as engineering controls where potentially unacceptable vapor intrusion risks are identified. These activities and use limitations will eliminate the potential for future unacceptable exposures to COCs at the Site via vapor intrusion.

Stemming from several efforts to assess the potential for current and reasonably anticipated future use of groundwater at and in the vicinity of the Facility in accordance with 25 Pa. Code § 245.310(a)(27), Evergreen has documented no confirmed drinking water supply wells within 1-mile of the Facility. As a result, groundwater on-Facility and off-Facility is not a current or reasonably anticipated future source of potable or nonpotable water.

6.2 Scenarios for Potential Human Exposure

Though the contamination identified at the Site is determined to be Pre-Existing Contamination, in accordance with 25 Pa. Code § 245.309(c)(14), § 245.310(a)(23), this section identifies potentially exposed populations (receptors) and their potential exposure pathways.

6.2.1 Potential On-Site Exposures

The current on-Site receptors include construction workers who may become exposed during site redevelopment or major construction activities and to a limited extent, trespassers, since access to the Facility is controlled with fencing and site security.

Reasonably anticipated future receptors at and in the immediate vicinity of the Site could include workers who may be exposed during the performance of typical or routine commercial activities (routine workers), maintenance workers who may become exposed during maintenance activities including minor subsurface repair/utility activities, construction workers, and trespassers.

Routine workers and trespassers could be exposed to COCs through incidental ingestion and dermal contact with COCs in exposed surface soil, inhalation of COCs in vapors and particulates from exposed surface soil, and inhalation of COCs in vapors from subsurface soil. Exposure of maintenance and construction workers could include incidental ingestion and dermal contact with COCs in exposed

surface and subsurface soil, inhalation of COCs in airborne particulates and vapors from exposed surface soil, and inhalation of COCs in vapors from subsurface soil.

Additionally, potential vapor intrusion exposure of routine workers, maintenance workers, construction workers, and trespassers could include exposure to COCs in vapors from both exposed surface soil and subsurface soil. However, such exposure is not currently a significant concern or anticipated to be one in the future, as BDH plans to address and eliminate potential risks via establishing environmental covenants and vapor mitigation systems as needed.

6.2.2 Potential Off-Site Exposures

Potential off-Site receptors under current and future conditions may include receptors who are off-Facility, or receptors who are off-Site (i.e., located outside of the Tank Group), but still within other portions of the Facility. Off-Site receptors could include off-Facility residents, routine workers, construction workers, and maintenance workers. Potential exposure of off-Facility residents could include inhalation of COCs in airborne particulates and/or vapors from on-Site soil.

6.3 Species and Habitats of Concern

In accordance with 25 Pa. Code § 245.309(c)(5) and § 250.311(a), an ecological screening evaluation was performed and conducted at the Site. As discussed in Section 4.4, no further ecological evaluation is required.

6.4 Groundwater Contamination and the Significance of Fate and Transport

Though the contamination identified at the Site is determined to be Pre-Existing Contamination, in accordance with 25 Pa. Code §245.310(a)(23), the fate and transport of groundwater contamination in the Tank Group 01 area is discussed in this Section.

Around 40 groundwater monitoring wells have been installed within or near Tank Group 01 as part of prior investigations performed at the Facility. As discussed in the AOI 8 RIR (Stantec 2017b), the aerial extent of groundwater contamination in the unconfined aquifer appears to be divided, with groundwater in the eastern and central portions of Tank Group 01 directed toward a groundwater depression in the northeast, while groundwater in the western portion flows southwest towards the Schuylkill River.

A remediation system (i.e., Maiden Lane Remediation System) has been installed in the eastern portion of Tank Group 01 for the purpose of groundwater and LNAPL recovery and in-situ remediation along the property boundary near the South District Work Center of Verizon Pennsylvania, LLC (Evergreen 2020). The Maiden Lane Remediation System was installed to address off-Facility impacts. Monitoring well N-157 was initially installed as a test well to determine the feasibility of LNAPL recovery in 2017 (see **Figures 4** and **12**). A horizontal well, HW-4, was installed in 2019 to recover impacted groundwater and LNAPL. A total fluids groundwater remediation system was installed, became operational in 2020 (Evergreen 2020), and is still in operation (Stantec 2025).

Because of the complexity associated with comingled impacts from a variety of sources and complicated hydrogeologic/groundwater flow conditions, Evergreen evaluated the nature and extent of groundwater contamination and its potential future fate and transport across the entire Facility in their 2025 Fate and Transport RIR (Stantec 2025), which was approved by PADEP in April 2025 (PADEP 2025). The fate and transport modeling supplemented the extensive groundwater analytical data which, as noted by Evergreen in their 2025 Fate and Transport RIR (Stantec 2025), PADEP considered complete and sufficient to assess risks to human and ecological receptors. The fate and transport assessment, which involved predictive 30-year simulations of dissolved phase indicator parameters (i.e., benzene, MTBE, naphthalene, BaP, and lead)[9] under the conservative assumptions (i.e., sources of contamination will remain and assuming the remediation system wells are not pumping) demonstrates that the dissolved phase plumes will remain relatively stable or decrease in size and concentration over time through natural attenuation processes, with the exception to the northern area of AOI 8, in which Tank Group 01 is located, that models a brief period of plume expansion followed by contraction over the 30-year simulation period due to steep hydraulic gradients in the area.

[9] As discussed in the AOI 8 RIR (Stantec 2017b) and the 2025 Fate and Transport RIR (Stantec 2025), of the list of site-related constituents identified in groundwater, benzene and MTBE were chosen as the primary chemicals (qualitative proxies for other constituents) because of their water solubility, potential to be mobile in groundwater, and their persistence in groundwater at and near the Facility. MTBE was phased out of use in the early 2000s. As of 2006, MTBE has not been used in significant quantities as an additive to gasoline. As a result, the presence of MTBE in soil and groundwater helps to identify contamination that is associated with historical releases (e.g., pre-2006).

7 Summary and Conclusions

Terraphase has prepared this Report, on behalf of BDH, to detail the results of the Site Assessment and Site Characterization activities and to provide the supporting information demonstrating that adequate characterization has been performed for a reliable determination of the need for remedial measures based on the selected standard.

The Site Assessment and Site Characterization activities described in this Report were performed in accordance with the applicable provisions of Act 32, 25 Pa. Code § 245 (Subchapter D), and Terraphase's Work Plan (2021). The four ASTs addressed in this Report are:

- PB 663 (PADEP No. 074A)
- PB 666 (PADEP No. 043A)
- PB 668 (PADEP No. 008A)
- PB 672 (PADEP No. 044A)

Visual observations of the on-site ASTs revealed no indications of release in the Category 2 tanks in Tank Group 01.

Based on the results of soil samples collected during the Site Assessment of Category 2 ASTs and a comparison to the applicable MSCs, no evidence of a release from one tank (i.e., PB 672) was identified. This tank remains classified as Category 2.

The remaining three tanks (i.e., PB 663, PB 666, and PB 668) identified concentrations in soil above the applicable MSCs and additional notifications of release were submitted to PADEP under Incident No. 56446. However, as discussed in Sections 4.3.2 and 4.3.3, Site Assessment and Site Characterization sampling have identified Pre-Existing Contamination at these tanks. Accordingly, the contamination identified by the Site Assessment and Site Characterization sampling in Tank Group 01 will be addressed by Evergreen under their existing Act 2 Sites (eFACTS PF No. 749898 [AOI 8] and 780190 [Philadelphia Refinery Sitewide]). Because none of the contamination in the area was determined to be Post-September 2012, BDH will not be issuing a RAP per 25 Pa. Code § 245.311.

8 References

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Tables

1 Aboveground Storage Tank Details

2a Monitoring Well Gauging Summary (January 2023)

2b Monitoring Well Gauging Summary (February 2023)

3 Soil Screening Summary (Site Assessment, Site Characterization)

4 Groundwater Screening Summary (Site Characterization)

Table 1
Aboveground Storage Tank Details
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Facility	State Regulation Number	Tank Number	Design Capacity (gal)	Primary Product	Proposed Analyte List[x]	Regulatory Status	Facility ID	Status Modification Date	Tank Type	Double Bottom	Diameter (ft)	Height (ft)	Remaining Liquid (gal)	GPS Survey Complete	Demo Complete	Storage Tanks Reg./Permit App Form Submitted	Release Notification	Incident No.	Int. Remedial/ Corrective Action Required
Point Breeze	008A	PB 668	449,400	Light Cycle Oil	Short List 1-5	R	51-33620	1/20/2021	Cone Roof	N	40	48		N*	Y	1/21/2021	6/23/2021	56446	
Point Breeze	043A	PB 666	2,818,200	Heavy Gas Oil	Short List 1-5	R	51-33620	1/19/2021	Cone Roof	Y, Removed	100	48		N*	Y	1/20/2021	6/23/2021	56446	
Point Breeze	044A	PB 672	2,818,200	Vacuum Gas Oil	Short List 1-5	R	51-33620	1/27/2021	Cone Roof	N	100	48		N*	Y	1/27/2021			
Point Breeze	074A	PB 663	2,935,800	Heavy Gas Oil	Short List 1-5	R	51-33620	3/25/2021	Cone Roof	N	102	48		N*	Y	4/20/2021	6/23/2021	56446	

Note
* - AST and piping were demolished and removed prior to JD2 recording key infrastructure features via GPS. Site assessment sampling points were identified using high resolution aerial photograph of the area with input from JD2.

Abbreviations:
R - Removed
Y - Yes
N - No

Table 2a
Monitoring Well Gauging Summary
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location ID	TOIC (ft AMSL)	January 26, 2023		
		Depth to Product (ft below TOIC)	Depth to Water (ft below TOIC)	Groundwater Elevation (ft AMSL)
TG01-MW-01	27.94	--	8.61	19.33
TG01-MW-02	27.88	--	9.55	18.33
TG01-MW-03	28.47	--	11.28	17.19

Notes:
Vertical Datum is NAVD 1988.

Table 2b
Monitoring Well Gauging Summary
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location ID	TOIC (ft AMSL)	February 27, 2023		
		Depth to Product (ft below TOIC)	Depth to Water (ft below TOIC)	Groundwater Elevation (ft AMSL)
TG01-MW-01	27.94	--	9.71	18.23
TG01-MW-02	27.88	--	10.15	17.73
TG01-MW-03	28.47	--	11.81	16.66

Note:
Vertical Datum is NAVD 1988.

Table 3
Soil Screening Summary (Site Assessment, Site Characterization)
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Matrix	Chem Group	Chemical	CASRN	Analyzed	Detected	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Non-Res Direct Contact MSC for Surface Soil (0-2 ft) (mg/kg)	Ratio of Max Detect to Non-Res Direct Contact MSC for Surface Soil	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft) (mg/kg)	Ratio of Max Detect to Non-Res Direct Contact MSC for Subsurface Soil	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC (mg/kg)	Ratio of Max Detect to Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC
Surface Soil	VOC	Benzene	71-43-2	10	5	0.00045	0.0091	0.028	280	0.00010			0.50	0.056
Surface Soil	VOC	Cumene	98-82-8	10	5	0.00042	0.0058	0.024	10000	0.0000024			2500	0.000010
Surface Soil	VOC	Ethyl Benzene	100-41-4	6	4	0.00084	0.018	0.052	880	0.000059			70	0.00074
Surface Soil	VOC	Toluene	108-88-3	10	6	0.0014	0.027	0.071	10000	0.0000071			100	0.00071
Surface Soil	VOC	1,2,4-Trimethylbenzene	95-63-6	10	6	0.00080	0.23	1.3	4700	0.00028			300	0.0043
Surface Soil	VOC	1,3,5-Trimethylbenzene	108-67-8	10	6	0.0010	0.11	0.61	4700	0.00013			93	0.0066
Surface Soil	VOC	Xylenes (total)	1330-20-7	10	6	0.0017	0.10	0.45	7900	0.000057			1000	0.00045
Surface Soil	SVOC	Anthracene	120-12-7	6	5	0.23	7.0	28	190000	0.00015			350	0.080
Surface Soil	SVOC	Benzo(a)anthracene	56-55-3	6	6	0.17	12	57	130	0.44			340	0.17
Surface Soil	SVOC	Benzo(a)pyrene	50-32-8	13	12	0.13	11	46	91	0.51			46	1.0
Surface Soil	SVOC	Benzo(b)fluoranthene	205-99-2	13	12	0.14	15	57	76	0.75			170	0.34
Surface Soil	SVOC	Benzo(g,h,i)perylene	191-24-2	6	6	0.090	7.7	25	190000	0.00013			180	0.14
Surface Soil	SVOC	Chrysene	218-01-9	6	6	0.12	10	46	760	0.061			230	0.20
Surface Soil	SVOC	Fluorene	86-73-7	6	6	0.020	2.4	11	130000	0.000085			3800	0.0029
Surface Soil	SVOC	Naphthalene	91-20-3	14	11	0.12	0.97	6.1	66	0.092			25	0.24
Surface Soil	SVOC	Phenanthrene	85-01-8	6	6	0.19	20	100	190000	0.00053			10000	0.010
Surface Soil	SVOC	Pyrene	129-00-0	6	6	0.17	19	87	96000	0.00091			2200	0.040
Surface Soil	INORG	Lead	7439-92-1	13	13	22	1800	8700	1000	**8.7**			450	**19**
Subsurface Soil	VOC	Benzene	71-43-2	79	25	0.00037	1.2	10			330	0.030	0.50	**20**
Subsurface Soil	VOC	Cumene	98-82-8	79	21	0.00020	5.0	92			10000	0.0092	2500	0.037
Subsurface Soil	VOC	Ethyl Benzene	100-41-4	65	15	0.00029	0.38	2.0			1000	0.0020	70	0.029
Subsurface Soil	VOC	Toluene	108-88-3	79	24	0.00085	63	1500			10000	0.15	100	**15**
Subsurface Soil	VOC	1,2,4-Trimethylbenzene	95-63-6	79	23	0.00089	7.8	94			5400	0.017	300	0.31
Subsurface Soil	VOC	1,3,5-Trimethylbenzene	108-67-8	79	23	0.00044	3.3	40			5400	0.0074	93	0.43
Subsurface Soil	VOC	Xylenes (total)	1330-20-7	79	22	0.0017	2.8	24			9100	0.0026	1000	0.024
Subsurface Soil	SVOC	Anthracene	120-12-7	65	53	0.00082	4.1	74			190000	0.00039	350	0.21
Subsurface Soil	SVOC	Benzo(a)anthracene	56-55-3	65	62	0.0013	8.3	130			190000	0.00068	340	0.38
Subsurface Soil	SVOC	Benzo(a)pyrene	50-32-8	81	69	0.0011	7.1	140			190000	0.00074	46	**3.0**
Subsurface Soil	SVOC	Benzo(b)fluoranthene	205-99-2	76	70	0.0016	8.7	170			190000	0.00089	170	1.0
Subsurface Soil	SVOC	Benzo(g,h,i)perylene	191-24-2	65	59	0.0017	4.8	84			190000	0.00044	180	0.47
Subsurface Soil	SVOC	Chrysene	218-01-9	65	61	0.00087	7.4	110			190000	0.00058	230	0.48
Subsurface Soil	SVOC	Fluorene	86-73-7	65	49	0.0010	2.4	53			190000	0.00028	3800	0.014
Subsurface Soil	SVOC	Naphthalene	91-20-3	86	65	0.0017	5.3	160			77	**2.1**	25	**6.4**
Subsurface Soil	SVOC	Phenanthrene	85-01-8	65	60	0.00084	14	320			190000	0.0017	10000	0.032
Subsurface Soil	SVOC	Pyrene	129-00-0	65	61	0.0011	13	190			190000	0.0010	2200	0.086
Subsurface Soil	INORG	Lead	7439-92-1	86	86	9.1	1100	17000			190000	0.088	450	**37**

Notes:
Only constituents detected are shown.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the criteria for Xylenes (total).
Ratios of concentration to the screening level greater than 1 are shaded in bold.
Chem Group - chemical group; INORG - metals; SVOC - semi-volatile organic compounds; VOC - volatile organic compounds

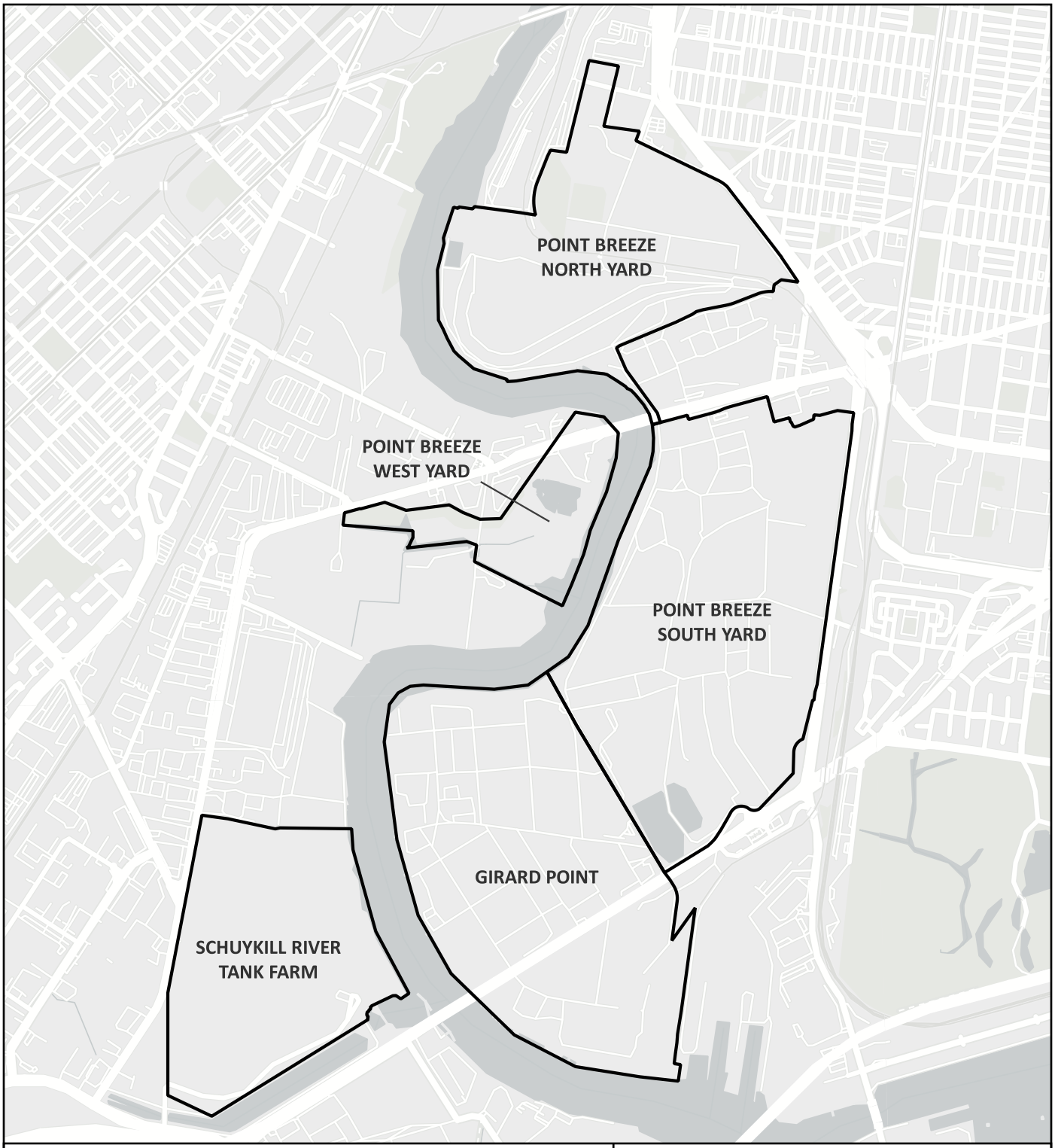
Table 4
Groundwater Screening Summary
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Analyzed	Detected	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Non-Res GW Used Aquifer (TDS ≤ 2500) (mg/L)	Ratio of Max Detect to Non-Res GW Used Aquifer (TDS ≤ 2500)
Unconfined	VOC	Benzene	71-43-2	T	8	7	0.00044	0.0061	0.010	0.0050	**2.0**
Unconfined	VOC	Cumene	98-82-8	T	8	4	0.0012	0.036	0.072	3.5	0.021
Unconfined	VOC	Ethyl Benzene	100-41-4	T	8	3	0.00018	0.10	0.15	0.70	0.21
Unconfined	VOC	Toluene	108-88-3	T	8	4	0.016	0.63	1.30	1.0	**1.3**
Unconfined	VOC	1,2,4-Trimethylbenzene	95-63-6	T	8	6	0.00031	0.55	2	0.53	**3.2**
Unconfined	VOC	1,3,5-Trimethylbenzene	108-67-8	T	8	4	0.00028	0.33	0.67	0.53	**1.3**
Unconfined	VOC	Xylenes (total)	1330-20-7	T	8	4	0.00088	0.96	2.0	10	0.20
Unconfined	SVOC	Anthracene	120-12-7	T	8	8	0.000090	0.00024	0.00037	0.066	0.0056
Unconfined	SVOC	Benzo(a)anthracene	56-55-3	T	8	8	0.000030	0.000094	0.00023	0.0039	0.059
Unconfined	SVOC	Benzo(a)pyrene	50-32-8	T	8	6	0.000020	0.000043	0.000090	0.00020	0.45
Unconfined	SVOC	Benzo(b)fluoranthene	205-99-2	T	8	7	0.000020	0.000047	0.000080	0.0012	0.067
Unconfined	SVOC	Benzo(g,h,i)perylene	191-24-2	T	8	6	0.000020	0.000028	0.000050	0.00026	0.19
Unconfined	SVOC	Chrysene	218-01-9	T	8	8	0.000020	0.000074	0.00025	0.0019	0.13
Unconfined	SVOC	Fluorene	86-73-7	T	8	8	0.000070	0.00018	0.00039	1.9	0.00021
Unconfined	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	8	5	0.000020	0.000034	0.000050	0.0023	0.022
Unconfined	SVOC	Naphthalene	91-20-3	T	8	8	0.0012	0.0074	0.026	0.10	0.26
Unconfined	SVOC	Phenanthrene	85-01-8	T	8	8	0.000080	0.00043	0.0011	1.1	0.0010
Unconfined	SVOC	Pyrene	129-00-0	T	8	7	0.00022	0.00033	0.00058	0.13	0.0045
Unconfined	INORG	Lead	7439-92-1	D	8	3	0.00042	0.00088	0.0018	0.0050	0.36

Notes:
Only chemicals detected in the area are shown.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the criteria for Xylenes (total).
Ratios of concentration to the screening level greater than 1 are shaded in bold.
Chem Group - chemical group; INORG - metals; SVOC - semi-volatile organic compounds; VOC - volatile organic compounds
Meas Basis - measured basis; T = total, D = dissolved

Figures

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2 Site Location
3 Site Layout Map
4 Interpreted Unconfined GW Flow
5 Site Assessment Soil Sampling Locations
6a Site Characterization Soil Sampling Locations
6b Site Characterization Monitoring Well Locations
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7b Subsurface Soil Analytical Results
8a Extent of GW > MSC (Tank Group 01)
8b Extent of GW > MSC (Facility-Wide)
9 Current Estimated Extent of LNAPL
10a Soil Analytical Results (AST PB 663)
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11a General Distribution of Benzene in Soil
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11d General Distribution of Benzo(a)pyrene in Soil
11e General Distribution of Lead in Soil
12 Site Characterization GW Analytical Results



0 2,000 4,000 Feet

1 Inch = 2000 Feet

N

Legend

Property Boundary

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Facility Location

FIGURE 1

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 1 - Facility Location 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long

Site

POINT BREEZE
NORTH YARD

POINT BREEZE
WEST YARD

POINT BREEZE
SOUTH YARD

GIRARD POINT

SCHUYKILL RIVER
TANK FARM

Legend

- Property Boundary
- Tank Group 01 Boundary
- Tank Group 02 Boundary
- Tank Group 03 Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Tank Group 09 Boundary

N

0 500 1,000 1,500 ft

1 Inch = 1000 Feet

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PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location

FIGURE 2

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 2 - Site Location 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long

PB 661
PB 662
PB 663
PB 664
PB 665
PB 666
PB 667
PB 668
PB 669
PB 670
PB 671
PB 672

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Associated Piping

0 50 100 150 200 ft

1 Inch = 100 Feet

N

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PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Layout

FIGURE 3

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 3 - Site Layout 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long

N-169
N-165
N-163
N-166
N-2
V-MW-4
V-MW-16
V-MW-11
V-MW-9
V-MW-10
V-MW-12
V-MW-8
V-MW-3
V-MW-6
V-MW-7
V-MW-2
V-MW-5
V-MW-1
PB 661
PB 662
PB 663
PB 664
PB 665
PB 666
PB 667
PB 668
PB 669
PB 670
PB 671
PB 672
TG01-MW-02
TG01-MW-01
TG01-MW-03
HW-4 (Start)
HW-4-450'
HW-4-300'
HW-4-150'
HW-4 (End)
N-137
N-160
N-161
N-138
N-139
N-146
N-145
N-162
N-98
N-142
N-144
N-153
N-143
N-140
N-141
OUTFALL A
Evergreen's Malden Lane Remediation Area

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Remediation Area
- Berm Boundary
- Associated Piping
- Approx. Groundwater Flow Direction
- Interpreted Groundwater Divide
- BDH Monitoring Well
- Evergreen Monitoring Well

Groundwater Sample Results

- Exceeds Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSC
- No Exceedances

Notes:

Interpreted groundwater flow is primarily based on the 2025 water-table elevation data prepared by Stantec in their Site-Wide Fate and Transfer RIR (Stantec 2025) and supplemented with water-table elevation data prepared by Terraphase (February 2023).

Results shown for each well are the maximum concentrations from the two most recent groundwater sampling events, which range from September 8, 2012 to May 31, 2024. Results only consider the Short List 1-6 constituents.

0 50 100 150 200 ft

1 Inch = 50 Feet

N

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CLIENT: Bellwether District Holdings, LLC

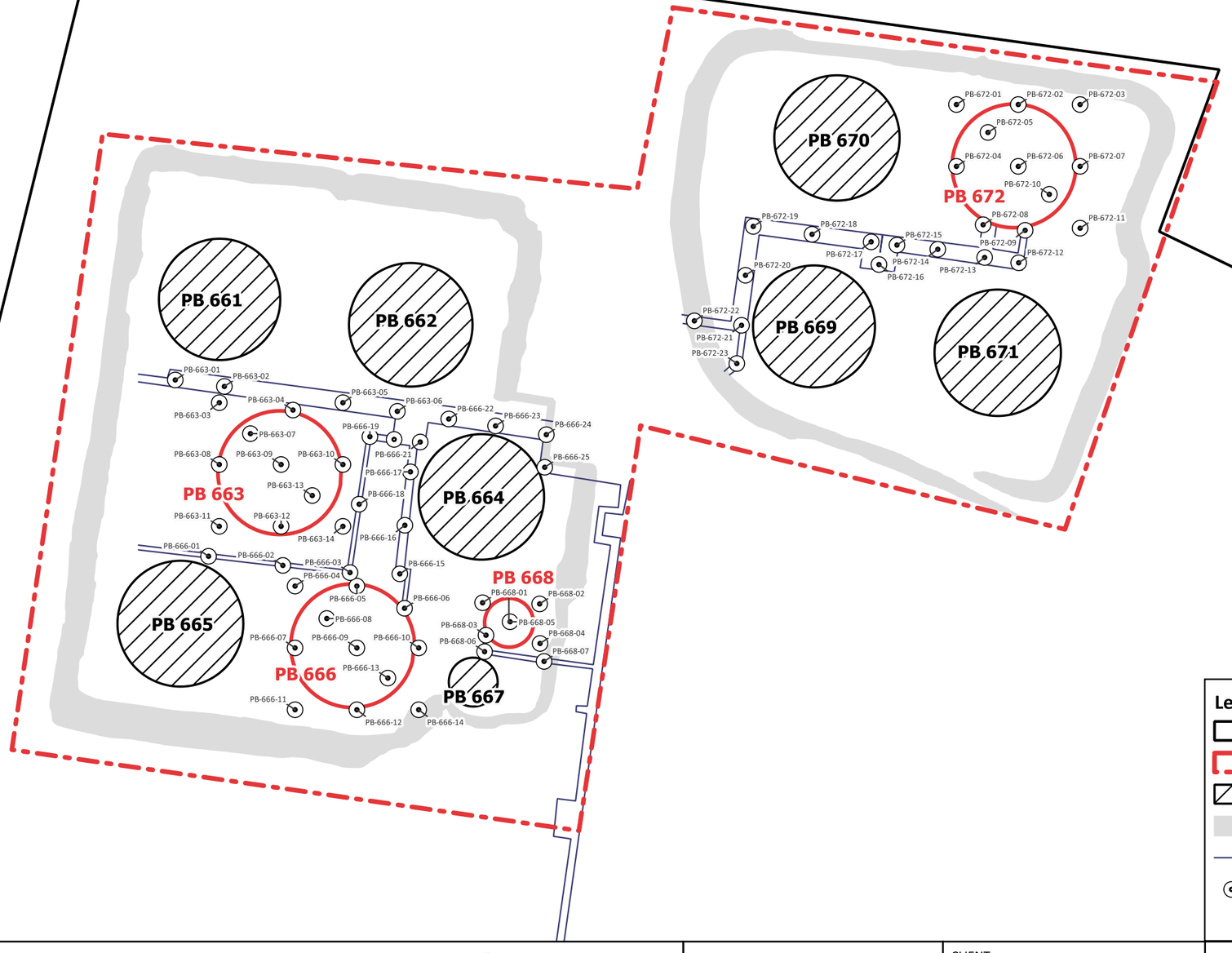
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Interpreted Unconfined Groundwater Flow

FIGURE 4

N:\GIS\Jrly\P044.001_PERMA-FIX\GIS\05_GIS and GPKG\Arcs\5_AST\5015\20250423\20250423_P044.001_BDH_AST_TG01_BW.mpk Figure 4 - Interpreted Unconfined Groundwater Flow 2023-10-17T10:19:37.000 Created by: M.Civitillo Checked by: K. Long



Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Associated Piping
- BDH Site Assessment Soil Sample Location

0 50 100 150 200 ft

1 Inch = 100 Feet

N

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PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Assessment Soil Sampling Locations

FIGURE 5

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\[20250418]QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 5 - Site Assessment Soil Sampling Locations 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long



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PROJECT NUMBER: P044.001.002

Site Characterization Soil Sampling Locations

FIGURE 6a

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 6a - Site Characterization Soil Sampling Locations 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long



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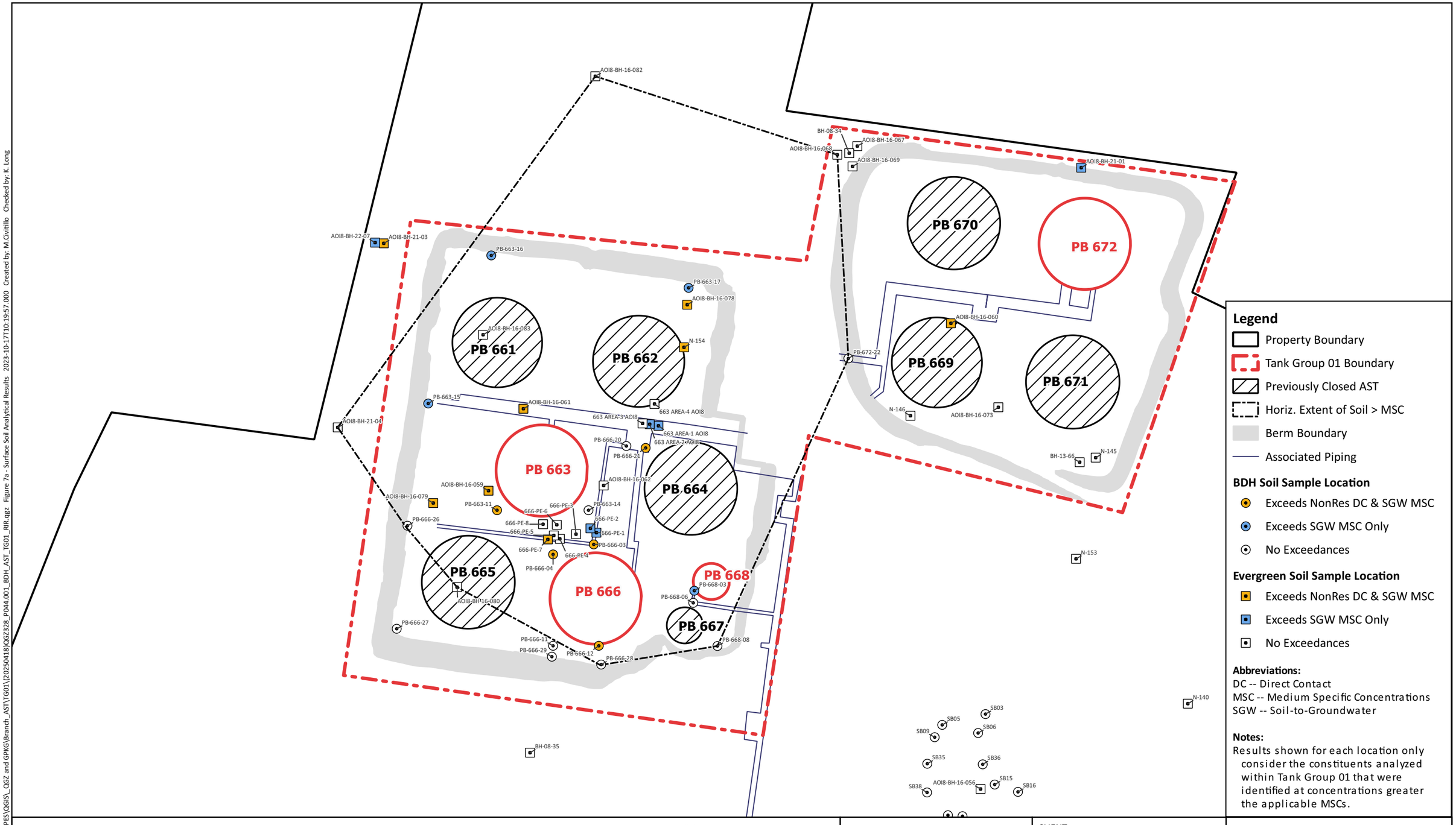
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Characterization Monitoring Well Locations

FIGURE 6b

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 6b - Site Characterization Monitoring Well Locations 2023-10-17T10:19:57.000 Created by: A.Spiers Checked by: K. Long



Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Horiz. Extent of Soil > MSC
- Berm Boundary
- Associated Piping

BDH Soil Sample Location

- Exceeds NonRes DC & SGW MSC
- Exceeds SGW MSC Only
- No Exceedances

Evergreen Soil Sample Location

- Exceeds NonRes DC & SGW MSC
- Exceeds SGW MSC Only
- No Exceedances

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentrations
SGW -- Soil-to-Groundwater

Notes:
Results shown for each location only consider the constituents analyzed within Tank Group 01 that were identified at concentrations greater the applicable MSCs.

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CLIENT: Bellwether District Holdings, LLC

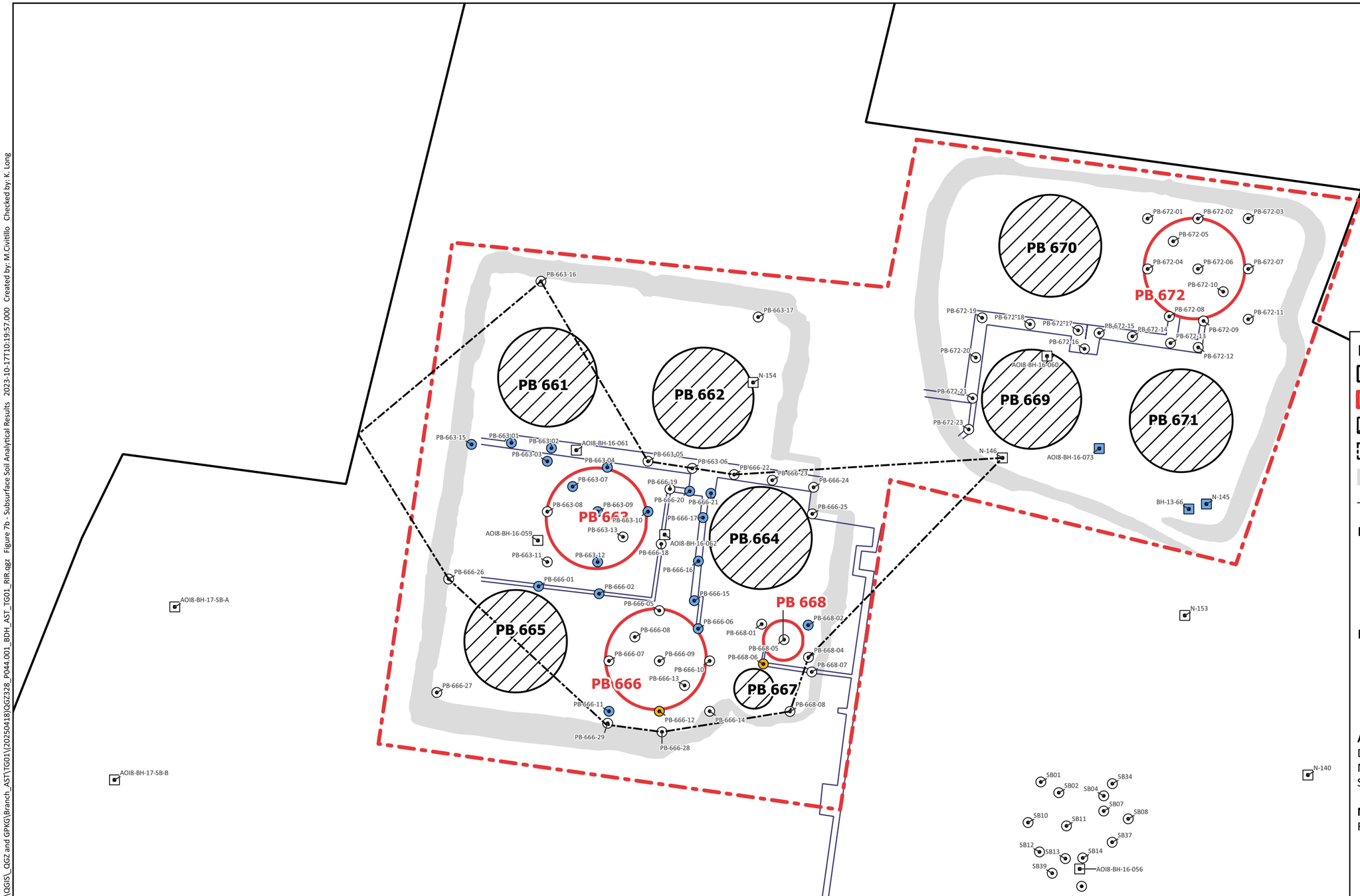
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Surface Soil Analytical Results

FIGURE 7a

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 7a - Surface Soil Analytical Results 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long



Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Horiz. Extent of Soil > MSC
- Berm Boundary
- Associated Piping

BDH Soil Sample Location

- Exceeds NonRes DC & SGW MSC
- Exceeds SGW MSC Only
- No Exceedances

Evergreen Soil Sample Location

- Exceeds NonRes DC & SGW MSC
- Exceeds SGW MSC Only
- No Exceedances

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentrations
SGW -- Soil-to-Groundwater

Notes:
Results shown for each location only consider the constituents analyzed within Tank Group 01 that were identified at concentrations greater the applicable MSCs.

0 50 100 150 200 ft

1 Inch = 100 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Subsurface Soil Analytical Results

FIGURE 7b

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 7b - Subsurface Soil Analytical Results 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long

N-169
N-165
N-163
N-100
N-166
N-2
V-MW-4
V-MW-16
V-MW-11
V-MW-9
V-MW-10
V-MW-12
V-MW-8
V-MW-3
V-MW-6
V-MW-7
V-MW-2
V-MW-5
V-MW-1
N-3
N-4
PB 670
PB 672
HW-4-450'
N-137
HW-4-300'
N-161
N-160
PB 669
PB 671
N-146
N-138
N-155
HW-4-150'
N-1000
N-157
N-1001
N-139
N-162
N-145
N-142
N-98
N-144
PB 661
PB 662
N-154
TG01-MW-02
PB 663
PB 664
N-5
OUTFALL A
PB 665
PB 666
PB 668
TG01-MW-01
PB 667
TG01-MW-03
N-6
N-153
N-143
N-140
N-141
N-10

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Overall Horiz. Extent of Site-Related GW > MSC
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

Groundwater Sample Results

- Exceeds Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSC
- No Exceedances

Notes:

Exceedances identified only reflect sampling results for AST Short List 1-6 analytes.
Results shown for each well are the maximum concentrations from the two most recent groundwater sampling events from September 8, 2012 to May 9, 2025.

0 50 100 150 200 ft

1 Inch = 50 Feet

N

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PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Extent of GW > MSC (Tank Group 01)

FIGURE 8a

N:\GIS\Jrly\P044.001_PERMA#3\GIS\5_QGZ and GPKG\Arcmap_AST\TG01\20250423\20250423_P044.001_BDH_AST_TG01_BB.qgz Figure 8a - Extent of GW>MSC (TG) 2023-10-17T10:19:57.000 Created by: M.Cirella Checked by: K. Long

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Overall Horiz. Extent of Site-Related GW > MSC
- BDH Monitoring Well
- Evergreen Monitoring Well

Groundwater Sample Results

- Exceeds NonRes GW Used Aquifer (TDS ≤ 2500) MSC
- No Exceedances

Notes:

Exceedances identified only reflect sampling results for AST Short List 1-6 analytes.

Yellow highlighted BDH wells sampled only for LNAPL are assumed to have groundwater contamination.

Results shown for each well are the maximum concentrations from the two most recent groundwater sampling events from September 8, 2012 to August 26, 2025.

N

0 500 1,000 1,500 ft

1 Inch = 1000 Feet

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PROJECT NUMBER: P044.001.002

Extent of GW > MSC (Facility-Wide)

FIGURE 8b

N:\GIS\Prj\P044.001_PESRM-PES\GIS_QGZ and GPKG\Branch_AST\TG01\(20250418)QGZ328_P044.001_BDH_AST_TG01_RIR.qgz Figure 8b - Extent of GW>MSC Facility-Wide 2023-10-17T10:19:57.000 Created by: M.Civitillo Checked by: K. Long

N:\GIS\Proj\P044.001_PGMA\MXD\05_QS2 and LTMO\Branch_AST\TG01\20250410\20250325_P044.001_BDH_AST_TG01_BW.mxd Figure 9 - Current Estimated Extent of LNAPL 2025-10-17T10:19:57.000 Created by: M.Costello Checked by: K.Long

N-169
N-165
N-163
N-100
N-166
N-2
N-3
N-4
N-5
N-6
N-10
N-137
N-160
N-154
N-146
0.14
N-145
N-153
N-140
N-141
N-143
N-144
N-142
0.09
N-98
N-162
N-155
N-157
N-1000
N-1001
N-139
0.04
N-138
0.4
N-161
0.28

V-MW-4
V-MW-16
V-MW-11
V-MW-9
V-MW-10
V-MW-12
V-MW-8
V-MW-3
V-MW-6
V-MW-7
0.05
V-MW-2
0.06
V-MW-5
0.17
V-MW-1
0.01

PB 661
PB 662
PB 663
PB 664
PB 665
PB 666
PB 667
PB 668
PB 669
PB 670
PB 671
PB 672

TG01-MW-01
TG01-MW-02
TG01-MW-03

Evergreen's Maiden Lane Remediation Area

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Remediation Area
- Berm Boundary
- Estimated Extent of LNAPL
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

Color Scheme for LNAPL Thickness

- LNAPL Observed
- No LNAPL

Notes:

The current estimated extent of LNAPL is based upon the most recent gauging event at each location, which range from November 2, 2020 to September 11, 2025.
Only wells that were gauged between November 2020 and September 2025 are presented in this figure.

Label Notation Key:

Location Code
LNAPL Thickness (ft)

0 50 100 150 200 ft

1 Inch = 50 Feet

N

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CLIENT: Bellwether District Holdings, LLC

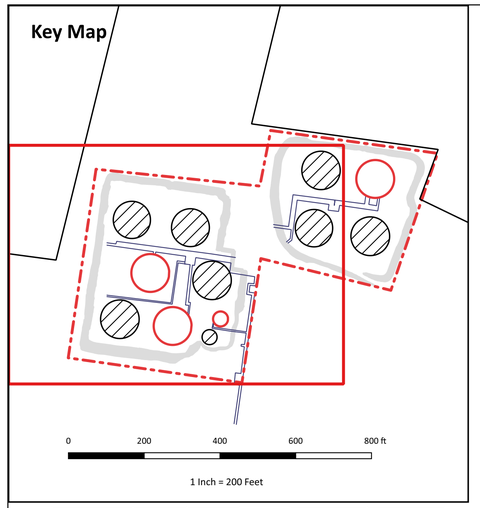
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Current Estimated Extent of LNAPL

FIGURE 9

Key Map



PB-663-03	2-2.5(ft)	3.5-4(ft)
VOCs		
Benzene	0.27	0.00078 U
Toluene	2.8	0.00085 J
SVOCs		
Benzo(a)pyrene	18	0.38
Naphthalene	0.92	0.055 U
Metals		
Lead	**3380 (C)**	**1150 (C)**

PB-663-02	3-3.5(ft)
VOCs	
Benzene	0.1
Toluene	4.4
SVOCs	
Benzo(a)pyrene	0.67
Naphthalene	0.1
Metals	
Lead	**7180 (C)**

PB-663-16	0-0.5(ft)	3-3.5(ft)	6-6.5(ft)
VOCs			
Benzene	--	--	--
Toluene	--	--	--
SVOCs			
Benzo(a)pyrene	--	--	--
Naphthalene	--	--	--
Metals			
Lead	**621 (C)**	234	87.1

AOI8-BH-16-061	0-2(ft)	6-8(ft)
VOCs		
Benzene	0.00394 U	0.00131 U
Toluene	0.0197 U	0.00653 U
SVOCs		
Benzo(a)pyrene	37.9	23.8
Naphthalene	16.7 U	0.837 U
Metals		
Lead	**1320 (AC)**	149

PB-663-07	3-3.5(ft)
VOCs	
Benzene	0.00067 U
Toluene	0.0013 U
SVOCs	
Benzo(a)pyrene	0.12
Naphthalene	0.014 J
Metals	
Lead	**1420 (C)**

PB-663-04	3-3.5(ft)
VOCs	
Benzene	0.00048 J
Toluene	0.0011 J
SVOCs	
Benzo(a)pyrene	0.1
Naphthalene	0.23
Metals	
Lead	**461 (C)**

PB-663-05	3.5-4(ft)
VOCs	
Benzene	0.00083 U
Toluene	0.0016 U
SVOCs	
Benzo(a)pyrene	0.57
Naphthalene	0.052
Metals	
Lead	23.1

PB-663-17	0-0.5(ft)	6-6.5(ft)
VOCs		
Benzene	--	--
Toluene	--	--
SVOCs		
Benzo(a)pyrene	--	--
Naphthalene	--	--
Metals		
Lead	**508 (C)**	156

AOI8-BH-16-078	0-2(ft)
VOCs	
Benzene	--
Toluene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	**3450 (AC)**

N-154	0-2(ft)	10-12(ft)
VOCs		
Benzene	0.0298 U	0.00126 U
Toluene	0.149 U	0.00629 U
SVOCs		
Benzo(a)pyrene	3.55	22.3
Naphthalene	2.43 U	20.7 U
Metals		
Lead	**5890 (AC)**	327

663 AREA-4 AOI8	0-0.5(ft)
VOCs	
Benzene	0.0019 U
Toluene	--
SVOCs	
Benzo(a)pyrene	5.2 J
Naphthalene	0.11 U
Metals	
Lead	--

PB-663-06	2.5-3(ft)
VOCs	
Benzene	0.02 J
Toluene	1.9
SVOCs	
Benzo(a)pyrene	4.8
Naphthalene	0.22
Metals	
Lead	27.7

663 AREA-3 AOI8	0-0.5(ft)
VOCs	
Benzene	0.057 U
Toluene	--
SVOCs	
Benzo(a)pyrene	6 J
Naphthalene	8.1
Metals	
Lead	--

663 AREA-2 AOI8	0-0.5(ft)
VOCs	
Benzene	0.1 U
Toluene	--
SVOCs	
Benzo(a)pyrene	26 AP
Naphthalene	**31 (C)**
Metals	
Lead	--

663 AREA-1 AOI8	0-0.5(ft)
VOCs	
Benzene	0.057 U
Toluene	--
SVOCs	
Benzo(a)pyrene	**56 AP (C)**
Naphthalene	7.8
Metals	
Lead	--

PB-666-22	4.5-5(ft)
VOCs	
Benzene	0.0013 U
Toluene	0.0026 U
SVOCs	
Benzo(a)pyrene	0.31
Naphthalene	0.06 U
Metals	
Lead	89

PB-666-23	4.5-5(ft)
VOCs	
Benzene	0.00087 U
Toluene	0.0017 U
SVOCs	
Benzo(a)pyrene	0.013
Naphthalene	0.019
Metals	
Lead	66.3

PB-666-24	3.5-4(ft)
VOCs	
Benzene	0.0064
Toluene	0.0032
SVOCs	
Benzo(a)pyrene	1.6
Naphthalene	5.7
Metals	
Lead	385

PB-666-25	3-3.5(ft)
VOCs	
Benzene	0.00053 U
Toluene	0.0011 U
SVOCs	
Benzo(a)pyrene	0.26
Naphthalene	0.07
Metals	
Lead	205

PB-663-10	3-3.5(ft)
VOCs	
Benzene	0.0008 U
Toluene	0.0016 U
SVOCs	
Benzo(a)pyrene	0.096
Naphthalene	0.098
Metals	
Lead	**3420 (C)**

AOI8-BH-16-062	0-2(ft)	12-14(ft)
VOCs		
Benzene	0.00127 U	0.00124 U
Toluene	0.00637 U	0.00622 U
SVOCs		
Benzo(a)pyrene	0.0421 U	0.112
Naphthalene	0.0421 U	0.0411 U
Metals		
Lead	26.7	49.8

PB-666-18	3-3.5(ft)
VOCs	
Benzene	0.00037 J
Toluene	0.0015 U
SVOCs	
Benzo(a)pyrene	0.029
Naphthalene	0.0022 J
Metals	
Lead	375

PB-663-09	3-3.5(ft)
VOCs	
Benzene	0.00089 U
Toluene	0.0018 U
SVOCs	
Benzo(a)pyrene	0.37
Naphthalene	0.014 J
Metals	
Lead	**2010 (C)**

PB-663-01	3-3.5(ft)
VOCs	
Benzene	0.001 U
Toluene	0.0025
SVOCs	
Benzo(a)pyrene	7.8
Naphthalene	1.2
Metals	
Lead	**1470 (C)**

PB-663-15	0-0.5(ft)	3-3.5(ft)	6-6.5(ft)	14.5-15(ft)
VOCs				
Benzene	--	--	--	--
Toluene	--	--	--	--
SVOCs				
Benzo(a)pyrene	--	--	--	--
Naphthalene	--	--	--	--
Metals				
Lead	**785 (C)**	**834 (C)**	**1060 (C)**	50.6

AOI8-BH-16-059	0-2(ft)	6-8(ft)
VOCs		
Benzene	0.00183 U	0.00134 U
Toluene	0.00914 U	0.00671 U
SVOCs		
Benzo(a)pyrene	8.81 U	0.257
Naphthalene	8.81 U	0.0443 U
Metals		
Lead	**95000 (AC)**	152

PB-663-08	3-3.5(ft)
VOCs	
Benzene	0.00072 U / 0.0008 U
Toluene	0.0014 U / 0.0016 U
SVOCs	
Benzo(a)pyrene	0.96 / 0.11
Naphthalene	0.089 / 0.0055 J
Metals	
Lead	28.7 / 54.9

PB-663-12	3-3.5(ft)
VOCs	
Benzene	0.00092 U
Toluene	0.0018 U
SVOCs	
Benzo(a)pyrene	0.017
Naphthalene	0.014
Metals	
Lead	**2430 (C)**

AOI8-BH-16-079	0-2(ft)
VOCs	
Benzene	--
Toluene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	**1030 (AC)**

PB-663-11	1.5-2(ft)	6-6.5(ft)
VOCs		
Benzene	0.00063	0.0011 U
Toluene	0.0062	0.0022 U
SVOCs		
Benzo(a)pyrene	46	0.54 U
Naphthalene	6.1	0.13 U
Metals		
Lead	**1010 (AC)**	60.8

PB-666-26	0-0.5(ft)	3.5-4(ft)	6-6.5(ft)
VOCs			
Benzene	--	--	--
Toluene	--	--	--
SVOCs			
Benzo(a)pyrene	--	--	--
Naphthalene	--	--	--
Metals			
Lead	21.7	141	21.9

PB-666-01	3.5-4(ft)
VOCs	
Benzene	0.00047 U
Toluene	0.00095 U
SVOCs	
Benzo(a)pyrene	0.3
Naphthalene	0.025 J
Metals	
Lead	**653 (C)**

666-PE-8	0.25-0.75(ft)
VOCs	
Benzene	0.0005 J
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	0.2
Naphthalene	0.001 U
Metals	
Lead	110

666-PE-6	0.25-0.75(ft)
VOCs	
Benzene	0.023
Toluene	0.21 J
SVOCs	
Benzo(a)pyrene	12
Naphthalene	0.97
Metals	
Lead	311

PB-666-02	2-2.5(ft)
VOCs	
Benzene	0.00053 U
Toluene	0.0011 U
SVOCs	
Benzo(a)pyrene	1
Naphthalene	0.3 U
Metals	
Lead	**910 (C)**

666-PE-5	0.25-0.75(ft)
VOCs	
Benzene	0.001 J
Toluene	0.013
SVOCs	
Benzo(a)pyrene	2.1
Naphthalene	0.04
Metals	
Lead	26

666-PE-7	0.25-0.75(ft)
VOCs	
Benzene	0.0006 J
Toluene	0.003 J
SVOCs	
Benzo(a)pyrene	2
Naphthalene	0.0009 U
Metals	
Lead	**2200 (AC)**

666-PE-4	0.25-0.75(ft)
VOCs	
Benzene	0.0005 U
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	0.55
Naphthalene	0.001 U
Metals	
Lead	107

PB-666-04	1.5-2(ft)
VOCs	
Benzene	0.015 J
Toluene	0.057
SVOCs	
Benzo(a)pyrene	0.33
Naphthalene	0.12
Metals	
Lead	**4310 (AC)**

666-PE-3	0.25-0.75(ft)
VOCs	
Benzene	0.0005 J
Toluene	0.003 J
SVOCs	
Benzo(a)pyrene	4.5
Naphthalene	0.004 J
Metals	
Lead	198

666-PE-2	0.25-0.75(ft)
VOCs	
Benzene	0.0005 U
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	1.6
Naphthalene	0.001 U
Metals	
Lead	**687 (C)**

PB-666-03	1-1.5(ft)
VOCs	
Benzene	0.0009 U
Toluene	0.0018 U
SVOCs	
Benzo(a)pyrene	1.4
Naphthalene	0.26
Metals	
Lead	**8660 (AC)**

666-PE-1	0.5-1(ft)
VOCs	
Benzene	0.001 J
Toluene	0.008
SVOCs	
Benzo(a)pyrene	2.2
Naphthalene	0.001 U
Metals	
Lead	**636 (C)**

PB-663-13	3-3.5(ft)
VOCs	
Benzene	0.0005 U
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	0.024
Naphthalene	0.0019 J
Metals	
Lead	73.6

PB-663-14	1-1.5(ft)
VOCs	
Benzene	0.028
Toluene	0.071
SVOCs	
Benzo(a)pyrene	18
Naphthalene	1.1
Metals	
Lead	34.4

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS < 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Toluene	10000	10000	100
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

AOI8-BH-16-069
AOI8-BH-22-07
AOI8-BH-21-03
PB-663-16
PB-663-17
AOI8-BH-16-078
AOI8-BH-16-083
PB 661
PB 662
N-154
663 AREA-4 AOI8
PB-672-19
PB-672-18
PB-672-15
PB-672-20
PB-672-22
PB-672-21
PB 669
PB-672-23
AOI8-BH-16-073
PB-663-15
PB-663-01
PB-663-02
AOI8-BH-16-061
PB-663-03
PB-663-04
PB-663-05
PB-663-06
663 AREA-3 AOI8
663 AREA-2 AOI8
663 AREA-1 AOI8
PB-666-22
PB-666-23
PB-666-24
N-146
AOI8-BH-21-04
PB-663-07
PB-666-19
PB-666-20
TG01-MW-02
PB-666-21
PB-666-17
PB-666-25
PB-663-08
PB-663-09
PB 663
(Heavy Gas Oil)
PB-663-10
PB 664
AOI8-BH-16-062
PB-666-18
N-5
AOI8-BH-16-059
AOI8-BH-16-079
PB-663-11
PB-663-12
PB-663-13
PB-663-14
PB-666-16
PB-666-26
666-PE-8
666-PE-6
666-PE-1
666-PE-2
PB-666-01
666-PE-5
666-PE-3
666-PE-7
PB-666-02
666-PE-4
PB-666-04
PB-663-03
PB-666-15
PB-668-01
PB-668-02
PB 668
(Light Cycle Oil)
PB-668-05
PB-668-08
PB-668-04
PB-668-07
TG01-MW-01
N-6
AOI8-BH-16-080
PB 665
PB-666-07
PB-666-09
PB-666-10
PB-666-08
PB-666-05
PB-666-06
PB-666-27
PB-666-11
PB-666-12
TG01-MW-03
PB-666-14
PB-666-13
PB 666
(Heavy Gas Oil)
PB 667
PB-668-03
PB-668-08
AOI8-BH-17-SB-B

0 30 60 90 120 ft
1 Inch = 30 Feet

N

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location
PB-663-01 | 3-3.5(ft) ← Sampling Depth
VOCs
Benzene | 0.001 U
Toluene | 0.0025
SVOCs
Benzo(a)pyrene | 7.8 ← Result
Naphthalene | 1.2
Metals
Lead | **1470 (C)** ← MSC Exceeded

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).
AP is an unknown qualifier.

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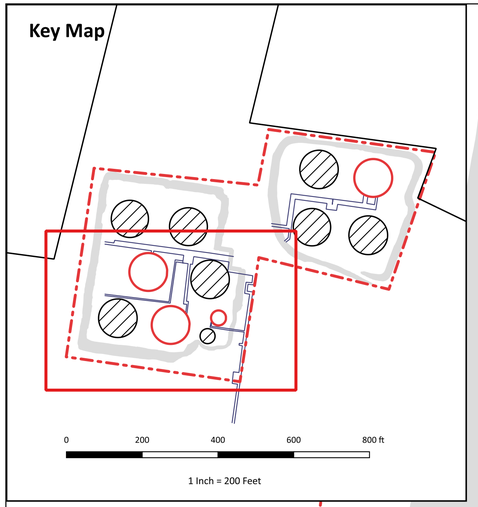
CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

Soil Analytical Results (AST PB 663)

FIGURE 10a

N:\GIS\P\P044.001_P1984\APR\MXD_QGIS and GPKG\Branch_AST\10S\1265043\1265043_044_001_BSH_AST_10S_02_Soil.mxd Figure 10a - PB663 Analytical Results 2023-10-17T13:19:57.000 Created by: M.Civitillo Checked by: initial

Key Map



PB-666-18	3-3.5(ft)
VOCs	
Benzene	0.00037 J
Toluene	0.0015 U
SVOCs	
Benzo(a)pyrene	0.029
Naphthalene	0.0022 J
Metals	
Lead	375

PB-666-19	3-3.5(ft)
VOCs	
Benzene	0.00067 U
Toluene	0.0013
SVOCs	
Benzo(a)pyrene	0.043
Naphthalene	0.0098
Metals	
Lead	60.3

PB-666-20	0-0.5(ft)	3.5-4(ft)	6-6.5(ft)
VOCs			
Benzene	0.00089 U	**5.8 (C)**	0.00084 U
Toluene	0.0043	**1500 (C)**	0.0062
SVOCs			
Benzo(a)pyrene	--	0.013	--
Naphthalene	0.0071 U	0.034	0.0067 U
Metals			
Lead	--	105	--

PB-666-21	0-0.5(ft)	4.5-5(ft)	6-6.5(ft)	14.5-15(ft)
VOCs				
Benzene	--	0.067 J / 0.00065 U	--	--
Toluene	--	0.1 J / 0.003	--	--
SVOCs				
Benzo(a)pyrene	--	0.037 / 0.11	--	--
Naphthalene	--	0.0034 J / 0.039	--	--
Metals				
Lead	**3340 (AC)**	**16800 (C) / 12100 (C)**	**8990 (C)**	19.3

PB-663-06	2.5-3(ft)
VOCs	
Benzene	0.02 J
Toluene	1.9
SVOCs	
Benzo(a)pyrene	4.8
Naphthalene	0.22
Metals	
Lead	27.7

663 AREA-3 AOI8	0-0.5(ft)
VOCs	
Benzene	0.057 U
Toluene	--
SVOCs	
Benzo(a)pyrene	6 J
Naphthalene	8.1
Metals	
Lead	--

663 AREA-2 AOI8	0-0.5(ft)
VOCs	
Benzene	0.1 U
Toluene	--
SVOCs	
Benzo(a)pyrene	26 AP
Naphthalene	**31 (C)**
Metals	
Lead	--

663 AREA-1 AOI8	0-0.5(ft)
VOCs	
Benzene	0.057 U
Toluene	--
SVOCs	
Benzo(a)pyrene	**56 AP (C)**
Naphthalene	7.8
Metals	
Lead	--

PB-666-22	4.5-5(ft)
VOCs	
Benzene	0.0013 U
Toluene	0.0026 U
SVOCs	
Benzo(a)pyrene	0.31
Naphthalene	0.06 U
Metals	
Lead	89

PB-666-23	4.5-5(ft)
VOCs	
Benzene	0.00087 U
Toluene	0.0017 U
SVOCs	
Benzo(a)pyrene	0.013
Naphthalene	0.019
Metals	
Lead	66.3

PB-666-24	3.5-4(ft)
VOCs	
Benzene	0.0064
Toluene	0.0032
SVOCs	
Benzo(a)pyrene	1.6
Naphthalene	5.7
Metals	
Lead	385

666-PE-2	0.25-0.75(ft)
VOCs	
Benzene	0.0005 U
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	1.6
Naphthalene	0.001 U
Metals	
Lead	**687 (C)**

666-PE-6	0.25-0.75(ft)
VOCs	
Benzene	0.023
Toluene	0.21 J
SVOCs	
Benzo(a)pyrene	12
Naphthalene	0.97
Metals	
Lead	311

666-PE-8	0.25-0.75(ft)
VOCs	
Benzene	0.0005 J
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	0.2
Naphthalene	0.001 U
Metals	
Lead	110

PB-666-17	3.5-4(ft)
VOCs	
Benzene	0.00073 U
Toluene	0.0014 U
SVOCs	
Benzo(a)pyrene	0.24
Naphthalene	0.021
Metals	
Lead	**456 (C)**

PB-666-25	3-3.5(ft)
VOCs	
Benzene	0.00053 U
Toluene	0.0011 U
SVOCs	
Benzo(a)pyrene	0.26
Naphthalene	0.07
Metals	
Lead	205

PB-666-16	3-3.5(ft)
VOCs	
Benzene	0.00056 U
Toluene	0.0011 U
SVOCs	
Benzo(a)pyrene	15
Naphthalene	1.8
Metals	
Lead	**5200 (C)**

666-PE-1	0.5-1(ft)
VOCs	
Benzene	0.001 J
Toluene	0.008
SVOCs	
Benzo(a)pyrene	2.2
Naphthalene	0.001 U
Metals	
Lead	**636 (C)**

PB-666-26	0-0.5(ft)	3.5-4(ft)	6-6.5(ft)
VOCs			
Benzene	--	--	--
Toluene	--	--	--
SVOCs			
Benzo(a)pyrene	--	--	--
Naphthalene	--	--	--
Metals			
Lead	21.7	141	21.9

PB-666-01	3.5-4(ft)
VOCs	
Benzene	0.00047 U
Toluene	0.00095 U
SVOCs	
Benzo(a)pyrene	0.3
Naphthalene	0.025 J
Metals	
Lead	**653 (C)**

666-PE-5	0.25-0.75(ft)
VOCs	
Benzene	0.001 J
Toluene	0.013
SVOCs	
Benzo(a)pyrene	2.1
Naphthalene	0.04
Metals	
Lead	26

PB-666-02	2-2.5(ft)
VOCs	
Benzene	0.00053 U
Toluene	0.0011 U
SVOCs	
Benzo(a)pyrene	1
Naphthalene	0.3 U
Metals	
Lead	**910 (C)**

PB-666-27	0-0.5(ft)	3.5-4(ft)	6-6.5(ft)
VOCs			
Benzene	0.00045 J	0.0016 IS	0.0039 IS
Toluene	0.021	0.3 IS	0.56 IS
SVOCs			
Benzo(a)pyrene	1.1 U	0.36 J	1.4
Naphthalene	1.4 U	0.081 J	0.22 J
Metals			
Lead	--	--	--

666-PE-7	0.25-0.75(ft)
VOCs	
Benzene	0.0006 J
Toluene	0.003 J
SVOCs	
Benzo(a)pyrene	2
Naphthalene	0.0009 U
Metals	
Lead	**2200 (AC)**

666-PE-4	0.25-0.75(ft)
VOCs	
Benzene	0.0005 U
Toluene	0.001 U
SVOCs	
Benzo(a)pyrene	0.55
Naphthalene	0.001 U
Metals	
Lead	107

666-PE-3	0.25-0.75(ft)
VOCs	
Benzene	0.0005 J
Toluene	0.003 J
SVOCs	
Benzo(a)pyrene	4.5
Naphthalene	0.004 J
Metals	
Lead	198

PB-666-04	1.5-2(ft)
VOCs	
Benzene	0.015 J
Toluene	0.057
SVOCs	
Benzo(a)pyrene	0.33
Naphthalene	0.12
Metals	
Lead	**4310 (AC)**

PB-666-07	3.5-4(ft)
VOCs	
Benzene	0.058 U
Toluene	0.12 U
SVOCs	
Benzo(a)pyrene	0.006 J
Naphthalene	0.4
Metals	
Lead	49.7

PB-666-11	0-0.5(ft)	3.5-4(ft)	6-6.5(ft)
VOCs			
Benzene	0.0013	**3.6 (C)**	0.00088
Toluene	0.0016 U	0.095 J	0.0013 U
SVOCs			
Benzo(a)pyrene	34	**140 (C)**	12
Naphthalene	1.1	1.4 J	1.2 J
Metals			
Lead	--	253	--

PB-666-29	0-0.5(ft)	3.5-4(ft)	6-6.5(ft)
VOCs			
Benzene	0.00078 U	0.00093 U	0.00079 U
Toluene	0.0014 J	0.0019 U	0.0016 U
SVOCs			
Benzo(a)pyrene	0.37	1	0.19 U
Naphthalene	0.24 U	1.1 U	0.24 U
Metals			
Lead	--	--	--

PB-666-08	4.5-5(ft)
VOCs	
Benzene	0.0008 U
Toluene	0.0051
SVOCs	
Benzo(a)pyrene	0.57 U
Naphthalene	0.71 U
Metals	
Lead	258

PB-666-28	0-0.5(ft)	2.5-3(ft)	6-6.5(ft)
VOCs			
Benzene	--	--	--
Toluene	--	--	--
SVOCs			
Benzo(a)pyrene	1	0.2 U	0.18 U
Naphthalene	0.16 J	0.26 U	0.23 U
Metals			
Lead	392	25.5	34.7

PB-666-12	0-0.5(ft)	2.5-3(ft)	6-6.5(ft)	7.5-8(ft)	8.5-9(ft)
VOCs					
Benzene	--	0.45	--	0.12	--
Toluene	--	2.6	--	0.1 U	--
SVOCs					
Benzo(a)pyrene	20	**90 (C)**	0.25	0.17 J	--
Naphthalene	0.84 J	**160 (BC)**	0.054 J	1.7	0.051
Metals					
Lead	**2460 (AC)**	**6170 (C)**	307	38.3	--

PB-666-14	4-4.5(ft)
VOCs	
Benzene	0.0013
Toluene	0.0023
SVOCs	
Benzo(a)pyrene	16
Naphthalene	1.4
Metals	
Lead	103

PB-666-13	4.5-5(ft)
VOCs	
Benzene	0.0034
Toluene	0.0018 U
SVOCs	
Benzo(a)pyrene	0.57
Naphthalene	0.69 U
Metals	
Lead	176

PB-666-15	3.5-4(ft)	5.5-6(ft)
VOCs		
Benzene	0.00048 U	0.00057 U
Toluene	0.00096 U	0.0011 U
SVOCs		
Benzo(a)pyrene	38	4.6
Naphthalene	1.8 J	0.32
Metals		
Lead	**784 (C)**	**11000 (C)**

PB-666-03	1-1.5(ft)
VOCs	
Benzene	0.0009 U
Toluene	0.0018 U
SVOCs	
Benzo(a)pyrene	1.4
Naphthalene	0.26
Metals	
Lead	**8660 (AC)**

PB-668-01	3-3.5(ft)
VOCs	
Benzene	0.00087 U
Toluene	0.0017 U
SVOCs	
Benzo(a)pyrene	0.0062 J
Naphthalene	0.026
Metals	
Lead	26.9

PB-666-05	3-3.5(ft)
VOCs	
Benzene	0.0007 U
Toluene	0.0014 U
SVOCs	
Benzo(a)pyrene	0.35 J
Naphthalene	0.64 U
Metals	
Lead	54.8

PB-666-06	3.5-4(ft)
VOCs	
Benzene	0.00077 U
Toluene	0.0015 U
SVOCs	
Benzo(a)pyrene	36
Naphthalene	0.55 J
Metals	
Lead	**2200 (C)**

PB-666-09	3-3.5(ft)
VOCs	
Benzene	0.002
Toluene	0.0015 U
SVOCs	
Benzo(a)pyrene	0.18 U
Naphthalene	0.23 U
Metals	
Lead	9.66

PB-666-10	3-3.5(ft)
VOCs	
Benzene	0.0017
Toluene	0.0038
SVOCs	
Benzo(a)pyrene	0.53 U
Naphthalene	0.66 U
Metals	
Lead	9.14

PB 663 (Heavy Gas Oil)

PB 664

PB 665

PB 666 (Heavy Gas Oil)

PB 667

PB 668 (Light Cycle Oil)

AOI8-BH-16-059
AOI8-BH-16-061
AOI8-BH-16-062
AOI8-BH-16-079
AOI8-BH-16-080
663 AREA-3 AOI8
663 AREA-2 AOI8
663 AREA-1 AOI8
TG01-MW-02
TG01-MW-01
TG01-MW-03
N-6
672-23

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Toluene	10000	10000	100
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

PB-663-01	3-3.5(ft)
VOCs	
Benzene	0.001 U
Toluene	0.0025
SVOCs	
Benzo(a)pyrene	7.8
Naphthalene	1.2
Metals	
Lead	**1470 (C)**

Sample Location
Sampling Depth
Result
MSC Exceeded

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).
AP is an unknown qualifier.

0 20 40 60 80 ft
1 Inch = 20 Feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

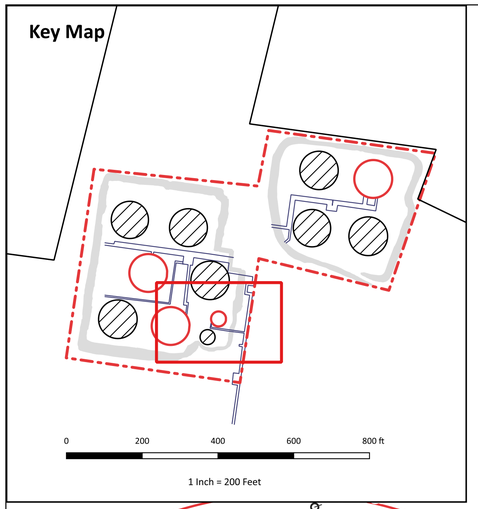
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Soil Analytical Results (AST PB 666)

FIGURE 10b

N:\0035\P044.001_PEMA-PASSOFF_GDZ and GPM\Branch_AST\TG01\20230413\0062328_P044.001_BDH_AST_TG01-Database.mpr Figure 10b - PB666 Analytical Results 2023-10-17T10:53:57.000 Created by: A.Speirs Checked by: initial



PB 664

PB 666
(Heavy Gas Oil)

PB 667

PB 668
(Light Cycle Oil)

PB-666-16
PB-666-15
PB-666-06
PB-666-08
PB-666-09
PB-666-10
PB-666-13
PB-666-12
TG01-MW-03
PB-666-14
PB-666-28
PB-668-01
PB-668-02
PB-668-03
PB-668-04
PB-668-05
PB-668-06
TG01-MW-01
PB-668-07
PB-668-08
N-6

PB-668-01	3-3.5(ft)
VOCs	
Benzene	0.00087 U
Toluene	0.0017 U
SVOCs	
Benzo(a)pyrene	0.0062 J
Naphthalene	0.026
Metals	
Lead	26.9

PB-668-05	3-3.5(ft)
VOCs	
Benzene	0.0011 U
Toluene	0.0022 U
SVOCs	
Benzo(a)pyrene	0.047 U
Naphthalene	0.053
Metals	
Lead	156

PB-668-02	3-3.5(ft)
VOCs	
Benzene	0.00074 U
Toluene	0.0015 U
SVOCs	
Benzo(a)pyrene	0.04
Naphthalene	0.25
Metals	
Lead	**1600 (C)**

PB-668-03	1.5-2(ft)
VOCs	
Benzene	0.001 U
Toluene	0.002 U
SVOCs	
Benzo(a)pyrene	0.13 J
Naphthalene	0.14 J
Metals	
Lead	**483 (C)**

PB-666-10	3-3.5(ft)
VOCs	
Benzene	0.0017
Toluene	0.0038
SVOCs	
Benzo(a)pyrene	0.53 U
Naphthalene	0.66 U
Metals	
Lead	9.14

PB-668-06	0-0.5(ft)	2.5-3(ft)	6-6.5(ft)	7.5-8(ft)	8-8.5(ft)
VOCs					
Benzene	--	0.36	--	**10 (C) / 9.5 (C)**	**0.79 (C)**
Toluene	--	2.7	--	0.31 / 0.39	0.13 J
SVOCs					
Benzo(a)pyrene	0.94	**76 (C)**	0.19 U	-- / --	--
Naphthalene	0.15 J	**150 (BC)**	0.24 U	0.17 / 0.17	1.6
Metals					
Lead	--	195	--	90.8 / 99.7 J	190

PB-668-08	0-0.5(ft)	2.5-3(ft)	6-6.5(ft)
VOCs			
Benzene	--	--	--
Toluene	--	--	--
SVOCs			
Benzo(a)pyrene	3.8	3.7	0.39 U
Naphthalene	0.54 J	0.32 J	0.51
Metals			
Lead	--	--	--

PB-668-07	3-3.5(ft)
VOCs	
Benzene	0.0012 U
Toluene	0.0024 U
SVOCs	
Benzo(a)pyrene	0.048 U
Naphthalene	0.048 U
Metals	
Lead	87

PB-668-04	3-3.5(ft)
VOCs	
Benzene	0.00066 U
Toluene	0.0013 U
SVOCs	
Benzo(a)pyrene	0.011
Naphthalene	0.012
Metals	
Lead	192

Legend
- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location

PB-663-01	3-3.5(ft)
VOCs	
Benzene	0.001 U
Toluene	0.0025
SVOCs	
Benzo(a)pyrene	7.8
Naphthalene	1.2
Metals	
Lead	**1470 (C)**

Sampling Depth
Result
MSC Exceeded

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Toluene	10000	10000	100
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 10 20 30 40 ft
1 Inch = 10 Feet
N

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

Soil Analytical Results (AST PB 668)

FIGURE 10c

N:\GIS\Proj\P044.001_PEDRA #35\GIS_Qgis and GPKG\Revised_AST\TG01\20250416\20250416_P044.001_BDH_AST_TG01-Outdoor.mxd Figure 10c_PB668 Analytical Results_2025-05-27T10:19:57-05:00 Created By: A.Spiers Checked by: initial

PB 670
PB 662
PB 672
PB 661
PB 671
PB 663
PB 669
PB 664
PB 665
PB 668
PB 667
PB 666
AOI 8
AOI 10
AOI 2
Belmont Terminal

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Evergreen's Area of Interest
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Note:
Results presented are the maximum concentrations found at each location regardless of depth.

0 250 500 750 1,000 ft

1 Inch = 250 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

General Distribution of Benzene in Soil

FIGURE 11a

N:\GIS\P\P044.001_PEDRA HSS\MXDS_GIS\Final\Bennett_AST\TGS01\20250418\20250423\B_P044.001_BDH_AST_TGS01_BB.mxd Figure 11 a.pdf Gen Dist SD 2023-10-17T10:19:57.000 Created By: A.Sjoerdsma Checked By: K.Long

PB 670
PB 662
PB 672
PB 661
PB 671
PB 663
PB 669
PB 664
PB 665
PB 668
PB 667
PB 666
AOI 8
AOI 2
Belmont Terminal
AOI 10

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Evergreen's Area of Interest
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Note:
Results presented are the maximum concentrations found at each location regardless of depth.

0 250 500 750 1,000 ft

1 Inch = 250 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

General Distribution of Toluene in Soil

FIGURE 11b

N:\GIS\P\P044.001_PEDRA FEVS\MXD\FS_QAE and GWM\Bruno_AST\TGS01\20250418\20250328_P044.001_BDH_AST_TGS01_RB.mxd Figure 11.aprx Gen Dist SP 2023-10-17T10:19:57.000 Created By: A.Sjerin Checked By: K.Long

PB 670
PB 662
PB 672
PB 661
PB 671
PB 663
PB 669
PB 664
PB 665
PB 668
PB 667
PB 666
AOI 8
AOI 8
AOI 2
Belmont Terminal
AOI 10

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Evergreen's Area of Interest
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Note:
Results presented are the maximum concentrations found at each location regardless of depth.

0 250 500 750 1,000 ft

1 Inch = 250 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

General Distribution of Benzo(a)pyrene in Soil

FIGURE 11c

N:\GIS\Projects\P044.001_PEDRM-FEF\MXDs\PS_QAE and DPM\Bruno_AST\TGS01\20250418\20250328_P044.001_BDH_AST_TGS01_BB.mxd Figure 11 ort - Gen Dist SD 2023-10-17T10:19:57.000 Created By: A.Sjoers Checked By: K.Long

PB 670
PB 662
PB 672
PB 661
PB 671
PB 663
PB 669
PB 664
PB 665
PB 668
PB 667
PB 666
AOI 8
AOI 10
AOI 2
Belmont Terminal

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Evergreen's Area of Interest
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Note:
Results presented are the maximum concentrations found at each location regardless of depth.

0 250 500 750 1,000 ft

1 Inch = 250 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

General Distribution of Naphthalene in Soil

FIGURE 11d

N:\GIS\P\P044.001_PEDRA HSS\MXD\FS_Q&E and GPM\Bruno_AST\TGS01\20250418\20250423\B_P044.001_BDH_AST_TGS01_RR.mxd Figure 11.aprx Gen Dist SP 2023-10-17T10:19:57.000 Created By: A.Sjoerdsma Checked By: K.Long

PB 670
PB 662
PB 672
PB 661
PB 671
PB 663
PB 669
PB 664
PB 665
PB 668
PB 667
PB 666
AOI 8
AOI 10
AOI 2
Belmont Terminal

Legend

- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Berm Boundary
- Evergreen's Area of Interest
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Note:
Results presented are the maximum concentrations found at each location regardless of depth.

0 250 500 750 1,000 ft

1 Inch = 250 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

General Distribution of Lead in Soil

FIGURE 11e

N:\GIS\P\P044.001_PEMM-FEES\MXD\01_QbE and GPW\Bravo_AST\TIOS\20250418\20250423\9_P044.001_BDH_AST_TIOS_RR.mxd - Figure 11.aprx - Gen Dist SD - 2023-10-17T10:19:57.000 - Created By: M.Chellis - Checked By: E.Long

TG01-MW-02	01/26/2023
VOCs	
Benzene	0.00044 J / 0.00044 J
Toluene	0.016 / 0.017
1,2,4-Trimethylbenzene	0.0025 U / 0.00031 J
1,3,5-Trimethylbenzene	0.0025 U / 0.0025 U

TG01-MW-03	01/25/2023	02/27/2023
VOCs		
Benzene	**0.0057 {A}**	**0.0081 {A} / 0.0084 {A}**
Toluene	0.00075 U	0.0075 U / 0.0038 U
1,2,4-Trimethylbenzene	0.00051 J	0.0075 J / 0.0015 J
1,3,5-Trimethylbenzene	0.00028 J	0.0027 J / 0.012 U

TG01-MW-01	01/25/2023	02/27/2023
VOCs		
Benzene	**0.01 {A}**	**0.0095 {A}**
Toluene	**1.2 {A}**	**1.3 {A}**
1,2,4-Trimethylbenzene	**1.6 {A}**	**1.7 {A}**
1,3,5-Trimethylbenzene	**0.66 {A}**	**0.67 {A}**

Groundwater Screening Levels	
Chemical	{A} Non-Residential GW Used Aquifer (TDS ≤ 2500) (mg/L)
VOCs	
Benzene	0.005
Toluene	1
1,2,4-Trimethylbenzene	0.53
1,3,5-Trimethylbenzene	0.53

Qualifiers:
J - Estimated Concentration
U - Not Detected

Abbreviations:
GW - Groundwater
MSC - Medium Specific Concentration

Exceedance Code:
{A} Non-Res GW Used Aquifer

Notes:
All concentrations are presented in mg/L.
Results exceeding the MSCs are shaded.
Interpreted groundwater flow is primarily based on the 2025 water-table elevation data prepared by Stantec in their Site-Wide Fate and Transfer RIR (Stantec 2025) and supplemented with the water-table elevation data prepared by Terraphase (February 2023).
The current estimated extent of LNAPL is based upon the most recent gauging event at each location, which range from November 2, 2020 to September 11, 2025.

Legend
- Property Boundary
- Tank Group 01 Boundary
- Previously Closed AST
- Remediation Area
- Berm Boundary
- Estimated Extent of LNAPL
- Associated Piping
- Approx. Groundwater Flow Direction
- Interpreted Groundwater Divide
- BDH Monitoring Well
- Evergreen Monitoring Well

Sample Location
Sample Date
MSC Exceedance
Result

TG01-MW-03	01/25/2023	02/27/2023
VOCs		
Benzene	**0.0057 (A)**	**0.0081 (A) / 0.0084 (A)**
Toluene	0.00075 U	0.0075 U / 0.0038 U
1,2,4-Trimethylbenzene	0.00051 J	0.0075 J / 0.0015 J
1,3,5-Trimethylbenzene	0.00028 J	0.0027 J / 0.012 U

0 50 100 150 200 ft
1 Inch = 50 Feet

N

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

Site Characterization
GW Analytical Results

FIGURE 12

N:\GIS\Proj\P044.001_P&M\P45\GIS_052 and GPKG\Branch_AST\TG01\20250410\GIS\231_P044.001_BDH_AST_TG01_BB.mpr Figure 12 - GW Analytical Results 2023-10-17T10:15:57.000 Created by: M.Civello Checked by: K. Long

Appendix A

Evergreen's Agreement Letter

Evergreen Resources Management
2 Righter Parkway, Suite 120
Wilmington, DE 19803

January 15, 2026

VIA email to cfazzino@pa.gov

Chelsea Fazzino, PG
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

Subject: Bellwether District Holdings, LLC Release Investigation Report – Tank Group 01
3144 West Passyunk Avenue, Philadelphia, PA 19145

Dear Ms. Fazzino,

Evergreen Resources Group, LLC (Evergreen) has reviewed Terraphase Engineering Inc.'s *Release Investigation Report – Tank Group 01*, written on behalf of Bellwether District Holdings, LLC (BDH). The data collected during BDH's investigation activities generally align with data collected by Evergreen as part of our ongoing Act 2 activities for the former refinery property and the Tank Group 01 area is being managed by Evergreen within our Act 2 Site. Available data for the Tank Group 01 area has been incorporated into recent Fate & Transport, Human Health Risk Assessment, Cleanup Plan, and Final Report activities under primary facility ID 780190.

Regards,

Evergreen Resources Management Operations

Tiffani L. Doerr, PG

cc: Julianna Connolly (jconnolly@hilcoglobal.com)
Amy Piccone (apiccone@hilcoglobal.com)

Appendix B

Aboveground Storage Tank System Closure Report Forms

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

51-33620
Facility I.D.

Former Philadelphia Refinery Point Breeze - Tank Group 1
Facility Name

Philadelphia — Municipality
Philadelphia — County

9/16/2022
Date Prepared

Kevin L. Long
Name of Person Submitting Report
(Please Print)

Terraphase Engineering Inc
Company Name
(If Applicable)

Principal Consultant
Title

Closure Method (Check all that apply):

- ☒ AST Removal
- ☐ AST Closure-In-Place
- ☐ AST Change-In-Service

Site Assessment Results (Check all that apply):

- ☒ No Obvious Contamination - Sample Results Meet Standards/Levels
- ☒ No Obvious Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Extensive Contamination

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

DATE RECEIVED: _____

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Owners who are permanently closing aboveground storage tank systems may use this form to demonstrate that a storage tank system closure was performed in accordance with technical guidance document 263-4200-001 "Closure Requirements for Aboveground Storage Tank Systems". PLEASE PRINT OR TYPE. COMPLETE ALL QUESTIONS.

SECTION I. Owner/Facility/Tank/Waste Management and Disposal Information

1. Facility ID Number 51-33620
2. Facility Name Former Philadelphia Refinery Point Breeze - Tank Group 1
3. Facility County Philadelphia
4. Facility Municipality Philadelphia
5. Facility Address 3144 West Passyunk Avenue, Philadelphia, PA, 19153
6. Facility Contact Person Anne Garr
7. Facility Telephone Number (312) 796-6564
8. Owner Name Philadelphia Energy Solutions Refining and Marketing LLC
9. Owner Mailing Address 111 S. Wacker Drive, Suite 3000, Chicago, IL 60606
10. Description of Aboveground Storage Tank Systems (Complete for each tank system closed)

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		1- 21 -2021	1- 20 -2021	1- 27 -2021	4- 20 -2021
Description of Aboveground Storage Tank System (Complete for each tank system undergoing closure)					
DEP Tank ID Number		008A	043A	044A	074A
Total Capacity (Gallons)		449,400	2,818,200	2,818,200	2,935,800
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**				
	Unleaded Gasoline	☐	☐	☐	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Pure Ethanol	☐	☐	☐	☐
	Blended Ethanol _____%	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Biodiesel _____%	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☐	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Nonpetroleum Oil, Specify				
	Other, Specify	Light Cycle Oil	Heavy Gas Oil	Vacuum Gas Oil	Heavy Gas Oil
NOTE: If Hazardous Substance Block is Checked, Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**	☐	☐	☐	☐
	Name of Principal CERCLA Substance AND Chemical Abstract Service (CAS) No.				
	c. Unknown	☐	☐	☐	☐

CLOSURE METHOD(s): DEP Tank ID Number:		008A	043A	044A	074A
Partial Storage Tank System Closure		☐	☐	☐	☐
Tank ☐ N/A	a. Removal	☒	☒	☒	☒
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Piping ☐ N/A	a. Removal	☒	☒	☒	☒
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Dispenser ☒ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Other _____	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐

Describe Closure Activities:

The tanks were drained via the in-place piping systems. Associated piping was also drained. Residual product was retained for use in other areas of the refinery complex. The interiors of tanks were cleaned. The tanks and piping were dismantled and removed from the site for disposal. When encountered, double bottoms were excavated and removed at a later date. No soil or other backfill material was excavated as part of the closure. Site Assessment sampling was performed in accordance with the Aboveground Storage Tank Closure Work Plan (Terraphase 2021) which was approved by PADEP on April 23, 2021. Site Characterization sampling has also been performed to adequately characterize the horizontal and vertical extent of concentrations greater than applicable MSCs.

Yes **N/A**

11. Briefly describe the storage tank facility and the nature of the operations which were conducted at the facility (both historical and present) **including use of the storage tank systems:**

Tank Group 01 is located near the intersection of South 34th Street, Maiden Lane, and Schuylkill Avenue in the Northern area of the refinery complex. Prior to demolition, Tank Group 01 consisted of four large ASTs, associated piping, open air support buildings, roads and containment berms. Except for the asphalt roadway that cuts through the central portion of Tank Group 01, and the tank foundations themselves, the area is not covered by hardscape. The four large tanks held refinery materials typically associated with processing products from the atmospheric distillation tower.

☒ ☐ 12. A site location and sampling map of the site, drawn to scale, is attached. See page 11 of 11.

☒ ☐ 13. Original, color photographs of the closure process involving any excavation are attached (i.e., inside of excavation/piping runs, pit water, containment structure and foundation showing condition).

☒ ☐ 14. An amended "Storage Tanks Registration/Permitting Application" Form was submitted to the DEP, Bureau of Environmental Cleanup and Brownfields, Division of Storage Tanks, P.O. Box 8762, Harrisburg, PA 17105-8762.

Date: 1 / 20 / 2021

☒ ☐ 15. If a release was confirmed, the appropriate regional office of DEP was notified by the owner or operator.

Date: 6 / 23 / 2021 Office: Southeast

Yes **N/A**

☒ ☐ 16. If tanks were cleaned on-site:

a. Briefly describe the disposition of usable product: Usable product was drained from the tanks prior to cleaning. Any residual product was discharged to the on-site proces sewer and wastewater treatment system.

b. Briefly describe the disposal of unusable product, sludges, sediments, and wastewater generated during cleaning. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
Remaining tank bottom waste was conslidated in tank PB 663. This waste was transported for disposal to Chemical Waste Management, Inc in Sulphur, LA. EPA ID LAD000777201. Documentation of this disposal is attached.

c. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: PAD 04979109

(2) Licensed Hazardous Waste Transporter Name and ID Number: Chemical Waste Management Transportation LA000014272

☐ ☒ 17. If tanks were removed from the site for cleaning:

a. Provide the name and permit number of the processing, treatment, storage or disposal facility performing the tank cleaning:

b. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

18. Briefly describe the disposition of tanks/piping (Attach documentation of proper disposal):
All tanks, associated piping were cleaned, demolished and recycled for scrap value. See Scrap Disposal Documentation Attached.

☐ ☒ 19. If contaminated soil is excavated:

a. Briefly describe the disposition and amount _____ (tons) of contaminated soil. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):

b. If contaminated soil is determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

Yes	N/A		
☐	☒	20.	Briefly describe the disposition of and amount _____ (tons) of uncontaminated soil and debris (attach analyses):

_____

_____

_____

☐	☒	21.	If the tanks were "Closed-in-Place" provide information below:

a. Briefly describe the tank cleaning process: _____

_____

b. If subcontracted, name and address of company that performed the tank cleaning:

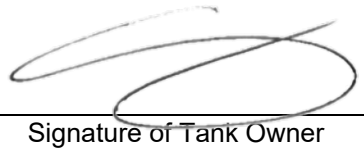
_____

c. How were tanks marked/labeled with permanent closure date: _____

_____

_____

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating
(Print Name)
to unsworn falsification to authorities) that I am the owner of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.



Signature of Tank Owner

09 / 26 / 2022
Date

Philadelphia Energy Solutions Refining and Marketing LLC
Company Name
(If applicable)

Assistant Secretary
Title

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION II. Tank Handling Information

Facility ID Number 51 - 33620
DEP Tank ID Number(s) 008A. 043A, 044A, 074A

Yes N/A

1. Briefly describe the excavation and initial on-site staging of uncontaminated/contaminated soil and debris:

   Removed tank and piping debris was segregated and loaded into roll-off containters during demolition.

2. Briefly describe the method of piping system closure and the closure of the piping systems including the quantity and condition of the piping:

   Piping was removed from service, evacuated of any residual product, and systematically dismantled. The piping was in generally in good condtion.

3. Briefly describe the condition of the tanks and any problems encountered during tank handling or tank removal activities:

   The tanks were in good condition. No leaks or releases were identified.

4. Briefly describe the method used to purge the tanks of and monitor for hazardous or explosive vapors:

   Tanks were cut open and vapors were allowed to evacuate.

☒ ☐ 5. If tanks were cleaned on-site:

   a. Briefly describe the tank cleaning process: Tanks were drained, cut open, rinsed and scrubbed clean of any residuals before demolition.

   b. If subcontracted, name and address of company that performed the tank cleaning:

      NorthStar Contracting Group, Inc., 2250 East Adams Avenue, Philadelphia, PA 19124

☐ ☒ 6. If tanks were “Closed-in-Place”, briefly describe how tanks were rendered inoperative, marked permanently closed with date, vented and secured to prevent unauthorized entry:

☒ ☐ 7. If contamination was suspected or observed, the “Notification of Contamination” form was submitted.

I, Kristian Satterthwaite (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the certified remover who performed the tank handling activities associated with the closure of the above referenced storage tank(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Kristian Satterthwaite
Signature of Certified Remover

5 / 4 / 2022
Date

5081
Remover Certification Number

1557
Company Certification Number

JD2 Environmental Inc.
Company Name

800 East Washington Street
Street

West Chester , PA 19380
City/Town, State, Zip

(610) 430-8151
Phone

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 008A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33620

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water N/A feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

09 / 26 /2022
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33620

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached Summary Table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure.

Table 1 - 008A (PB 668)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-668-01-SS01	3	3.5	Lead	SW6010D	Soil	26.9	2.84	5/19/2021	5/31/2021
PB-668-01-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00087	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00045	0.0035	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00087	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-668-01-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0089	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0028	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.0062	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0073	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0054	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.0024	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.018	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.026	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.045	0.0095	5/19/2021	6/1/2021
PB-668-01-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.02	0.0095	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Lead	SW6010D	Soil	1600	3.75	5/19/2021	5/31/2021
PB-668-02-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.012	0.003	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00074	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0015	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.006	0.003	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00074	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0015	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0015	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.003	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0015	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.0035	0.003	5/19/2021	5/26/2021
PB-668-02-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0077	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.046	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.04	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.055	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.026	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.039	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0022	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.25	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.034	0.012	5/19/2021	6/1/2021
PB-668-02-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.059	0.012	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Lead	SW6010D	Soil	483	2.8	5/19/2021	5/31/2021
PB-668-03-SS01	1.5	2	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0078	0.0041	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	1,2-Dibromoethane	SW8260C	Soil	ND	0.001	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	1,2-Dichloroethane	SW8260C	Soil	ND	0.002	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	1,3,5-Trimethylbenzene	SW8260C	Soil	0.012	0.0041	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Benzene	SW8260C	Soil	ND	0.001	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Cumene	SW8260C	Soil	0.00042	0.002	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Ethyl Benzene	SW8260C	Soil	0.00084	0.002	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0041	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Toluene	SW8260C	Soil	ND	0.002	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Xylenes (total)	SW8260C	Soil	0.0082	0.0041	5/19/2021	5/26/2021
PB-668-03-SS01	1.5	2	Anthracene	SW8270DSIM	Soil	0.35	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Benzo(a)anthracene	SW8270DSIM	Soil	0.18	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Benzo(a)pyrene	SW8270DSIM	Soil	0.13	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.14	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.09	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Chrysene	SW8270DSIM	Soil	0.27	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Fluorene	SW8270DSIM	Soil	0.58	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Naphthalene	SW8270DSIM	Soil	0.14	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Phenanthrene	SW8270DSIM	Soil	0.86	0.2	5/19/2021	6/1/2021
PB-668-03-SS01	1.5	2	Pyrene	SW8270DSIM	Soil	0.65	0.2	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Lead	SW6010D	Soil	192	2.22	5/19/2021	5/31/2021
PB-668-04-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0026	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00066	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0026	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00066	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0026	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021

Table 1 - 008A (PB 668)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-668-04-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0026	5/19/2021	5/26/2021
PB-668-04-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.003	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.01	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.011	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.017	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.013	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.01	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0011	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.012	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.0096	0.0074	5/19/2021	6/1/2021
PB-668-04-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.015	0.0074	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Lead	SW6010D	Soil	156	2.86	5/19/2021	5/31/2021
PB-668-05-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0044	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0011	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0022	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0044	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0011	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0022	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0022	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0044	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0022	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0044	5/19/2021	5/26/2021
PB-668-05-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	ND	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0068	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	ND	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0052	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	ND	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.0045	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	ND	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.053	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.0082	0.047	5/19/2021	6/1/2021
PB-668-05-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.0052	0.047	5/19/2021	6/1/2021
PB-668-06R-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	0.94	0.4	11/30/2021	12/13/2021
PB-668-06R-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	1.3	0.3	11/30/2021	12/13/2021
PB-668-06R-0.0-0.5	0	0.5	Naphthalene	SW8270D	Soil	0.15	0.5	11/30/2021	12/13/2021
PB-668-06R-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.19	11/30/2021	12/11/2021
PB-668-06R-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	0.043	0.14	11/30/2021	12/11/2021
PB-668-06R-6.0-6.5	6	6.5	Naphthalene	SW8270D	Soil	ND	0.24	11/30/2021	12/11/2021
PB-668-06-SS01	2.5	3	Lead	SW6010D	Soil	195	2.87	5/19/2021	5/31/2021
PB-668-06-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260C	Soil	38	0.26	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	1,2-Dibromoethane	SW8260C	Soil	ND	0.066	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	1,2-Dichloroethane	SW8260C	Soil	ND	0.13	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260C	Soil	13	0.26	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Benzene	SW8260C	Soil	0.36	0.066	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Cumene	SW8260C	Soil	1.5	0.13	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Ethyl Benzene	SW8260C	Soil	1.3	0.13	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Methyl tert-butyl ether	SW8260C	Soil	ND	0.26	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Toluene	SW8260C	Soil	2.7	0.13	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Xylenes (total)	SW8260C	Soil	13	0.26	5/19/2021	5/27/2021
PB-668-06-SS01	2.5	3	Anthracene	SW8270DSIM	Soil	58	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Benzo(a)anthracene	SW8270DSIM	Soil	120	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Benzo(a)pyrene	SW8270DSIM	Soil	76	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Benzo(b)fluoranthene	SW8270DSIM	Soil	120	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270DSIM	Soil	48	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Chrysene	SW8270DSIM	Soil	90	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Fluorene	SW8270DSIM	Soil	25	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Naphthalene	SW8270DSIM	Soil	150	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Phenanthrene	SW8270DSIM	Soil	320	3.9	5/19/2021	6/2/2021
PB-668-06-SS01	2.5	3	Pyrene	SW8270DSIM	Soil	190	3.9	5/19/2021	6/2/2021
PB-668-07-SS01	3	3.5	Lead	SW6010D	Soil	87	2.85	5/19/2021	5/31/2021
PB-668-07-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0048	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0012	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0024	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0048	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0012	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0024	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0024	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0048	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0024	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0048	5/19/2021	5/26/2021
PB-668-07-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0051	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021

Table 1 - 008A (PB 668)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-668-07-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-07-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	ND	0.048	5/19/2021	6/1/2021
PB-668-08-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	3.8	0.52	11/30/2021	12/13/2021
PB-668-08-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	5.1	0.39	11/30/2021	12/13/2021
PB-668-08-0.0-0.5	0	0.5	Naphthalene	SW8270D	Soil	0.54	0.64	11/30/2021	12/13/2021
PB-668-08-2.5-3.0	2.5	3	Benzo(a)pyrene	SW8270D	Soil	3.7	0.28	11/30/2021	12/13/2021
PB-668-08-2.5-3.0	2.5	3	Benzo(b)fluoranthene	SW8270D	Soil	4.9	0.21	11/30/2021	12/13/2021
PB-668-08-2.5-3.0	2.5	3	Naphthalene	SW8270D	Soil	0.32	0.36	11/30/2021	12/13/2021
PB-668-08-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.39	11/30/2021	12/13/2021
PB-668-08-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	0.24	0.29	11/30/2021	12/13/2021
PB-668-08-6.0-6.5	6	6.5	Naphthalene	SW8270D	Soil	0.51	0.49	11/30/2021	12/13/2021

Notes
SS -- Soil Sample.
-- R indicates that the sample location was returned to for further delineation.

PB 672

PB 662

PB 663

PB 664

PB 666

PB 668

PB 667

PB-668-01
PB-668-02
PB-668-03
PB-668-04
PB-668-05
PB-668-06
PB-668-06R
PB-668-07
PB-668-08

Legend

- PESRM Soil Sample Location

Tank Group

- 01
- Previously Closed
- Berm Boundary
- Associated Piping

0 17.5 35 70 Feet

1 inch = 35 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map (PB 668)

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 01\Figure 1 - Site Location and Sampling Map.mxd 2/4/2022 Created by: RKW Checked by: INITIAL Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet



Photograph 1:

View of Tank 008A (PB 668) area following demolition

Product Movement and Waste Disposal Documentation (Tank 008A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#S120103

Load Ticket: 13877

Date: 2-3-21

Scrap

Sold to: Allegheny

Location: 66E

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #: _____

Gross Weight: 55260 lbs

Tare Weight: 40460 lbs

Net Weight: 14800 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location: _____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20026628
Date: 02/03/2021 12:05 PM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 7081.806
Loads: 520

PR-1 - ALLEGHANY PENSKE RENTAL W/TRAILER 50
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	7.4 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	55260.00	40460.00	14800.00

1387

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 043A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33620

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water N/A feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

09 / 26 / 2022
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33620

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached Summary Table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure.

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-01-SS01	3.5	4	Lead	SW6010D	Soil	653	2.22	5/18/2021	5/27/2021
PB-666-01-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00047	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.00095	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Benzene	SW8260C	Soil	ND	0.00047	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Cumene	SW8260C	Soil	ND	0.00095	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.00095	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.00095	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-01-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	0.086	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	0.36	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	0.3	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.4	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.13	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	0.25	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	0.025	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	0.025	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	0.29	0.038	5/18/2021	5/31/2021
PB-666-01-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	0.48	0.038	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Lead	SW6010D	Soil	910	2.18	5/18/2021	5/27/2021
PB-666-02-SS01	2	2.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00053	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Benzene	SW8260C	Soil	ND	0.00053	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Cumene	SW8260C	Soil	ND	0.0011	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Ethyl Benzene	SW8260C	Soil	ND	0.0011	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0021	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Toluene	SW8260C	Soil	ND	0.0011	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Xylenes (total)	SW8260C	Soil	ND	0.0021	5/18/2021	5/24/2021
PB-666-02-SS01	2	2.5	Anthracene	SW8270DSIM	Soil	ND	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Benzo(a)anthracene	SW8270DSIM	Soil	1	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Benzo(a)pyrene	SW8270DSIM	Soil	1	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	1.4	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	2.8	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Chrysene	SW8270DSIM	Soil	0.74	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Fluorene	SW8270DSIM	Soil	0.05	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Naphthalene	SW8270DSIM	Soil	ND	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Phenanthrene	SW8270DSIM	Soil	0.6	0.3	5/18/2021	5/31/2021
PB-666-02-SS01	2	2.5	Pyrene	SW8270DSIM	Soil	0.95	0.3	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Lead	SW6010D	Soil	8660	7.1	5/18/2021	5/27/2021
PB-666-03-SS01	1	1.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0036	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0009	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0036	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Benzene	SW8260C	Soil	ND	0.0009	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Cumene	SW8260C	Soil	ND	0.0018	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0036	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Toluene	SW8260C	Soil	ND	0.0018	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Xylenes (total)	SW8260C	Soil	ND	0.0036	5/18/2021	5/23/2021
PB-666-03-SS01	1	1.5	Anthracene	SW8270DSIM	Soil	0.23	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Benzo(a)anthracene	SW8270DSIM	Soil	1.5	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Benzo(a)pyrene	SW8270DSIM	Soil	1.4	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	1.8	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.72	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Chrysene	SW8270DSIM	Soil	1.2	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Fluorene	SW8270DSIM	Soil	0.048	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Naphthalene	SW8270DSIM	Soil	0.26	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Phenanthrene	SW8270DSIM	Soil	1	0.025	5/18/2021	5/31/2021
PB-666-03-SS01	1	1.5	Pyrene	SW8270DSIM	Soil	1.9	0.025	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Lead	SW6010D	Soil	4310	4.34	5/18/2021	5/27/2021
PB-666-04-SS01	1.5	2	1,2,4-Trimethylbenzene	SW8260C	Soil	1.3	0.1	5/18/2021	5/20/2021
PB-666-04-SS01	1.5	2	1,2-Dibromoethane	SW8260C	Soil	ND	0.00061	5/18/2021	5/21/2021
PB-666-04-SS01	1.5	2	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	5/18/2021	5/21/2021
PB-666-04-SS01	1.5	2	1,3,5-Trimethylbenzene	SW8260C	Soil	0.61	0.1	5/18/2021	5/20/2021
PB-666-04-SS01	1.5	2	Benzene	SW8260C	Soil	0.015	0.025	5/18/2021	5/20/2021
PB-666-04-SS01	1.5	2	Cumene	SW8260C	Soil	0.024	0.05	5/18/2021	5/20/2021
PB-666-04-SS01	1.5	2	Ethyl Benzene	SW8260C	Soil	0.052	0.05	5/18/2021	5/20/2021
PB-666-04-SS01	1.5	2	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	5/18/2021	5/21/2021
PB-666-04-SS01	1.5	2	Toluene	SW8260C	Soil	0.057	0.05	5/18/2021	5/20/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-04-SS01	1.5	2	Xylenes (total)	SW8260C	Soil	0.45	0.1	5/18/2021	5/20/2021
PB-666-04-SS01	1.5	2	Anthracene	SW8270DSIM	Soil	ND	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Benzo(a)anthracene	SW8270DSIM	Soil	0.17	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Benzo(a)pyrene	SW8270DSIM	Soil	0.33	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.23	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Benzo(g,h,i)perylene	SW8270DSIM	Soil	7.2	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Chrysene	SW8270DSIM	Soil	0.12	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Fluorene	SW8270DSIM	Soil	0.02	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Naphthalene	SW8270DSIM	Soil	0.12	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Phenanthrene	SW8270DSIM	Soil	0.19	0.073	5/18/2021	5/31/2021
PB-666-04-SS01	1.5	2	Pyrene	SW8270DSIM	Soil	0.17	0.073	5/18/2021	5/31/2021
PB-666-05-SS01	3	3.5	Lead	SW6010D	Soil	54.8	2.53	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0011	0.0028	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0007	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00074	0.0028	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0007	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0014	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0014	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0028	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0014	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0028	1/17/2022	1/20/2022
PB-666-05-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.39	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.4	0.39	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.35	0.52	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.4	0.39	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.21	0.52	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Chrysene	SW8270D	Soil	0.22	0.39	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.64	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.64	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.099	0.39	1/17/2022	1/19/2022
PB-666-05-SS01	3	3.5	Pyrene	SW8270D	Soil	0.55	0.39	1/17/2022	1/19/2022
PB-666-06-SS01	3.5	4	Lead	SW6010D	Soil	2200	3.49	5/19/2021	5/31/2021
PB-666-06-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0031	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00077	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.0015	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0031	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Benzene	SW8260C	Soil	ND	0.00077	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Cumene	SW8260C	Soil	ND	0.0015	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.0015	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0031	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.0015	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	ND	0.0031	5/19/2021	5/25/2021
PB-666-06-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	7.5	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	34	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	36	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	47	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	29	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	27	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	1.2	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	0.55	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	22	0.57	5/19/2021	6/2/2021
PB-666-06-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	39	0.57	5/19/2021	6/2/2021
PB-666-07-SS01	3.5	4	Lead	SW6010D	Soil	49.7	2.88	5/18/2021	5/27/2021
PB-666-07-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	6.4	0.23	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.058	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.12	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	5.5	0.23	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Benzene	SW8260C	Soil	ND	0.058	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Cumene	SW8260C	Soil	0.15	0.12	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	0.041	0.12	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.23	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.12	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	0.77	0.23	5/18/2021	5/23/2021
PB-666-07-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	ND	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	0.0098	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	0.006	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0091	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.12	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	0.018	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	ND	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	0.4	0.048	5/18/2021	5/31/2021
PB-666-07-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	0.54	0.048	5/18/2021	5/31/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-07-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	0.066	0.048	5/18/2021	5/31/2021
PB-666-08-SS01	4.5	5	Lead	SW6010D	Soil	258	2.83	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0065	0.0032	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0008	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0016	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0043	0.0032	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.0008	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Cumene	SW8260C	Soil	0.00058	0.0016	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.00083	0.0016	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0032	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Toluene	SW8260C	Soil	0.0051	0.0016	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.0097	0.0032	1/17/2022	1/18/2022
PB-666-08-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	0.43	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	ND	0.43	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	0.57	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.43	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.57	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Chrysene	SW8270D	Soil	ND	0.43	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Fluorene	SW8270D	Soil	ND	0.71	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	0.71	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Phenanthrene	SW8270D	Soil	ND	0.43	1/17/2022	1/19/2022
PB-666-08-SS01	4.5	5	Pyrene	SW8270D	Soil	ND	0.43	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Lead	SW6010D	Soil	9.66	2.69	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.00089	0.0029	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00074	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0015	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00044	0.0029	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Benzene	SW8260C	Soil	0.002	0.00074	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Cumene	SW8260C	Soil	0.0002	0.0015	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0015	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0029	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0015	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.00173	0.0029	1/17/2022	1/18/2022
PB-666-09-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.14	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	ND	0.14	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.18	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.14	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.18	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Chrysene	SW8270D	Soil	ND	0.14	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.23	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.23	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Phenanthrene	SW8270D	Soil	ND	0.14	1/17/2022	1/19/2022
PB-666-09-SS01	3	3.5	Pyrene	SW8270D	Soil	ND	0.14	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Lead	SW6010D	Soil	9.14	2.71	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0037	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00092	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0037	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Benzene	SW8260C	Soil	0.0017	0.00092	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Cumene	SW8260C	Soil	0.00051	0.0018	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0037	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Toluene	SW8260C	Soil	0.0038	0.0018	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0037	1/17/2022	1/18/2022
PB-666-10-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.4	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	ND	0.4	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.53	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.4	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.53	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Chrysene	SW8270D	Soil	ND	0.4	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.66	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.66	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Phenanthrene	SW8270D	Soil	ND	0.4	1/17/2022	1/19/2022
PB-666-10-SS01	3	3.5	Pyrene	SW8270D	Soil	ND	0.4	1/17/2022	1/19/2022
PB-666-11R-0.0-0.5	0	0.5	Benzene	SW8260C	Soil	0.0013	0.00078	11/29/2021	12/2/2021
PB-666-11R-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	34	0.8	11/29/2021	12/6/2021
PB-666-11R-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	57	1.2	11/29/2021	12/6/2021
PB-666-11R-6.0-6.5	6	6.5	Benzene	SW8260C	Soil	0.00088	0.00065	11/29/2021	12/2/2021
PB-666-11R-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	12	5.2	11/29/2021	12/6/2021
PB-666-11R-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	18	3.9	11/29/2021	12/6/2021
PB-666-11-SS01	3.5	4	Lead	SW6010D	Soil	253	2.49	5/18/2021	5/27/2021
PB-666-11-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	0.22	0.23	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.058	5/18/2021	5/20/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-11-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.12	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	0.061	0.23	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Benzene	SW8260C	Soil	3.6	0.058	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Cumene	SW8260C	Soil	7.1	0.12	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	0.28	0.12	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.23	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Toluene	SW8260C	Soil	0.095	0.12	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	0.368	0.23	5/18/2021	5/20/2021
PB-666-11-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	41	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	130	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	140	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	170	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	84	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	110	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	18	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	1.4	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	72	4.2	5/18/2021	6/1/2021
PB-666-11-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	180	4.2	5/18/2021	6/1/2021
PB-666-12R-0.0-0.5	0	0.5	Lead	SW6010D	Soil	2460	2.68	11/29/2021	12/6/2021
PB-666-12R-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	20	0.93	11/29/2021	12/6/2021
PB-666-12R-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	31	0.7	11/29/2021	12/6/2021
PB-666-12R-0.0-0.5	0	0.5	Naphthalene	SW8270D	Soil	0.84	1.2	11/29/2021	12/6/2021
PB-666-12R-6.0-6.5	6	6.5	Lead	SW6010D	Soil	307	2.69	11/29/2021	12/6/2021
PB-666-12R-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	0.25	0.18	11/29/2021	12/4/2021
PB-666-12R-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	0.32	0.13	11/29/2021	12/4/2021
PB-666-12R-6.0-6.5	6	6.5	Naphthalene	SW8270D	Soil	0.054	0.22	11/29/2021	12/4/2021
PB-666-12-SS01	2.5	3	Lead	SW6010D	Soil	6170	5.64	5/18/2021	5/27/2021
PB-666-12-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260C	Soil	20	0.24	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	1,2-Dibromoethane	SW8260C	Soil	ND	0.061	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	1,2-Dichloroethane	SW8260C	Soil	ND	0.12	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260C	Soil	11	0.24	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Benzene	SW8260C	Soil	0.45	0.061	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Cumene	SW8260C	Soil	1.2	0.12	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Ethyl Benzene	SW8260C	Soil	2	0.12	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Methyl tert-butyl ether	SW8260C	Soil	ND	0.24	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Toluene	SW8260C	Soil	2.6	0.12	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Xylenes (total)	SW8260C	Soil	24.1	0.24	5/18/2021	5/20/2021
PB-666-12-SS01	2.5	3	Anthracene	SW8270DSIM	Soil	74	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Benzo(a)anthracene	SW8270DSIM	Soil	110	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Benzo(a)pyrene	SW8270DSIM	Soil	90	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Benzo(b)fluoranthene	SW8270DSIM	Soil	120	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270DSIM	Soil	50	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Chrysene	SW8270DSIM	Soil	86	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Fluorene	SW8270DSIM	Soil	53	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Naphthalene	SW8270DSIM	Soil	160	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Phenanthrene	SW8270DSIM	Soil	270	4.8	5/18/2021	6/1/2021
PB-666-12-SS01	2.5	3	Pyrene	SW8270DSIM	Soil	190	4.8	5/18/2021	6/1/2021
PB-666-13-SS01	4.5	5	Lead	SW6010D	Soil	176	2.75	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0036	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0009	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0036	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Benzene	SW8260C	Soil	0.0034	0.0009	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Cumene	SW8260C	Soil	0.0015	0.0018	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0036	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0018	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0036	1/17/2022	1/20/2022
PB-666-13-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	0.41	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.3	0.41	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.57	0.55	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.91	0.41	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	1.3	0.55	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Chrysene	SW8270D	Soil	0.28	0.41	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Fluorene	SW8270D	Soil	ND	0.69	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	0.69	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Phenanthrene	SW8270D	Soil	ND	0.41	1/17/2022	1/19/2022
PB-666-13-SS01	4.5	5	Pyrene	SW8270D	Soil	0.52	0.41	1/17/2022	1/19/2022
PB-666-14-SS01	4	4.5	Lead	SW6010D	Soil	103	2.42	5/18/2021	5/27/2021
PB-666-14-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0011	0.0023	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00059	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00048	0.0023	5/18/2021	5/20/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-14-SS01	4	4.5	Benzene	SW8260C	Soil	0.0013	0.00059	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	Cumene	SW8260C	Soil	0.0011	0.0012	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	Ethyl Benzene	SW8260C	Soil	0.02	0.0012	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0023	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	Toluene	SW8260C	Soil	0.0023	0.0012	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	Xylenes (total)	SW8260C	Soil	0.09	0.0023	5/18/2021	5/20/2021
PB-666-14-SS01	4	4.5	Anthracene	SW8270DSIM	Soil	7.9	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Benzo(a)anthracene	SW8270DSIM	Soil	19	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Benzo(a)pyrene	SW8270DSIM	Soil	16	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	20	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	8.1	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Chrysene	SW8270DSIM	Soil	15	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Fluorene	SW8270DSIM	Soil	3.1	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Naphthalene	SW8270DSIM	Soil	1.4	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Phenanthrene	SW8270DSIM	Soil	30	0.42	5/18/2021	6/1/2021
PB-666-14-SS01	4	4.5	Pyrene	SW8270DSIM	Soil	28	0.42	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Lead	SW6010D	Soil	784	2.5	5/18/2021	5/27/2021
PB-666-15-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00048	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.00096	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Benzene	SW8260C	Soil	ND	0.00048	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Cumene	SW8260C	Soil	ND	0.00096	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.00096	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.00096	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	ND	0.0019	5/18/2021	5/23/2021
PB-666-15-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	0.81	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	15	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	38	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	18	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	19	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	53	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	ND	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	1.8	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	1.2	5	5/18/2021	6/1/2021
PB-666-15-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	47	5	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Lead	SW6010D	Soil	5200	4.75	5/18/2021	5/27/2021
PB-666-16-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0022	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00056	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0022	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00056	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0011	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0011	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0022	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0011	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0022	5/18/2021	5/23/2021
PB-666-16-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	4.6	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	18	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	15	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	20	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	8.6	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	14	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	1.3	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	1.8	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	17	0.4	5/18/2021	6/1/2021
PB-666-16-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	25	0.4	5/18/2021	6/1/2021
PB-666-17-SS01	3.5	4	Lead	SW6010D	Soil	456	2.85	5/18/2021	5/27/2021
PB-666-17-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0029	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00073	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0029	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Benzene	SW8260C	Soil	ND	0.00073	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Cumene	SW8260C	Soil	ND	0.0014	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.0014	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0029	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.0014	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	ND	0.0029	5/18/2021	5/23/2021
PB-666-17-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	0.089	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	0.28	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	0.24	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.32	0.019	5/18/2021	5/31/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-17-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.12	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	0.21	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	0.022	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	0.021	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	0.3	0.019	5/18/2021	5/31/2021
PB-666-17-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	0.4	0.019	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Lead	SW6010D	Soil	375	2.45	5/18/2021	5/27/2021
PB-666-18-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0031	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00077	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0015	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0031	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Benzene	SW8260C	Soil	0.00037	0.00077	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0015	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0015	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0031	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0015	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0031	5/18/2021	5/23/2021
PB-666-18-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0085	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.035	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.029	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.031	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.016	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.045	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0032	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0022	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.031	0.0083	5/18/2021	5/31/2021
PB-666-18-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.046	0.0083	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Lead	SW6010D	Soil	60.3	2.8	5/18/2021	5/27/2021
PB-666-19-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0027	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00067	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0027	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00067	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0013	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0013	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0027	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Toluene	SW8260C	Soil	0.0013	0.0013	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0027	5/18/2021	5/23/2021
PB-666-19-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0095	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.036	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.043	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.068	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.047	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.036	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.002	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0098	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.026	0.0093	5/18/2021	5/31/2021
PB-666-19-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.04	0.0093	5/18/2021	5/31/2021
PB-666-20R-0.0-0.5	0	0.5	Benzene	SW8260C	Soil	ND	0.00089	12/1/2021	12/4/2021
PB-666-20R-0.0-0.5	0	0.5	Toluene	SW8260C	Soil	0.0043	0.0018	12/1/2021	12/4/2021
PB-666-20R-6.0-6.5	6	6.5	Benzene	SW8260C	Soil	ND	0.00084	12/1/2021	12/4/2021
PB-666-20R-6.0-6.5	6	6.5	Toluene	SW8260C	Soil	0.0062	0.0017	12/1/2021	12/4/2021
PB-666-20-SS01	3.5	4	Lead	SW6010D	Soil	105	2.7	5/18/2021	5/27/2021
PB-666-20-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	6.6	0.61	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.15	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.3	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	3.5	0.61	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	Benzene	SW8260C	Soil	5.8	0.15	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	Cumene	SW8260C	Soil	0.81	0.3	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	1.9	0.3	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.61	5/18/2021	5/24/2021
PB-666-20-SS01	3.5	4	Toluene	SW8260C	Soil	1500	12	5/18/2021	5/23/2021
PB-666-20-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	12.3	0.61	5/18/2021	5/23/2021
PB-666-20-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	0.015	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	0.018	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	0.013	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.017	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	ND	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	0.012	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	ND	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	0.034	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	0.051	0.0093	5/18/2021	5/31/2021
PB-666-20-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	0.027	0.0093	5/18/2021	5/31/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-21R-0.0-0.5	0	0.5	Lead	SW6010D	Soil	3340	2.38	12/1/2021	12/8/2021
PB-666-21R-14.5-15.0	14.5	15	Lead	SW6010D	Soil	19.3	11.8	12/1/2021	12/23/2021
PB-666-21R-6.0-6.5	6	6.5	Lead	SW6010D	Soil	8990	9.01	12/1/2021	12/8/2021
PB-666-21-SS01	4.5	5	Lead	SW6010D	Soil	16800	18.2	5/18/2021	5/27/2021
PB-666-21-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.088	0.35	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.088	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.18	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.044	0.35	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Benzene	SW8260C	Soil	0.067	0.088	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.18	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.048	0.18	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.35	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Toluene	SW8260C	Soil	0.1	0.18	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.19	0.35	5/18/2021	5/21/2021
PB-666-21-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	0.0034	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.031	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.037	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.061	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.032	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.029	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	ND	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	0.0034	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.0063	0.012	5/18/2021	5/31/2021
PB-666-21-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	0.023	0.012	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Lead	SW6010D	Soil	89	3.65	5/18/2021	5/27/2021
PB-666-22-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0014	0.0053	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0013	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0026	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0053	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.0013	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Cumene	SW8260C	Soil	0.0039	0.0026	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.00056	0.0026	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0053	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0026	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0053	5/18/2021	5/24/2021
PB-666-22-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	ND	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.59	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.31	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.17	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.11	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.99	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	2.5	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	ND	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	1.6	0.06	5/18/2021	5/31/2021
PB-666-22-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	1.8	0.06	5/18/2021	5/31/2021
PB-666-23-SS01	4.5	5	Lead	SW6010D	Soil	66.3	2.88	5/19/2021	5/31/2021
PB-666-23-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00087	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00087	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0017	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0035	5/19/2021	5/25/2021
PB-666-23-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	0.0046	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.017	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.013	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.014	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0074	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.013	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	0.0046	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	0.019	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.024	0.0099	5/19/2021	6/1/2021
PB-666-23-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	0.017	0.0099	5/19/2021	6/1/2021
PB-666-24-SS01	3.5	4	Lead	SW6010D	Soil	385	2.3	5/19/2021	5/31/2021
PB-666-24-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	0.091	0.0024	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.0006	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	0.019	0.0024	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	Benzene	SW8260C	Soil	0.0064	0.0006	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	Cumene	SW8260C	Soil	0.003	0.0012	5/19/2021	5/25/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-666-24-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	0.025	0.0012	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	Toluene	SW8260C	Soil	0.0032	0.0012	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	0.027	0.0024	5/19/2021	5/25/2021
PB-666-24-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	1.5	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	2.3	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	1.6	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.85	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.61	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	3.3	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	2.9	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	5.7	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	8	0.2	5/19/2021	6/2/2021
PB-666-24-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	4.5	0.2	5/19/2021	6/2/2021
PB-666-25-SS01	3	3.5	Lead	SW6010D	Soil	205	2.31	5/19/2021	5/31/2021
PB-666-25-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00053	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00053	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0011	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0011	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0021	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0011	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0021	5/19/2021	5/25/2021
PB-666-25-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.056	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.27	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.26	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.31	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.16	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.24	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.029	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.07	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.2	0.0076	5/19/2021	6/1/2021
PB-666-25-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.36	0.0076	5/19/2021	6/1/2021
PB-666-26-0.0-0.5	0	0.5	Lead	SW6010D	Soil	21.7	2.65	11/30/2021	12/10/2021
PB-666-26-3.5-4.0	3.5	4	Lead	SW6010D	Soil	141	2.76	11/30/2021	12/10/2021
PB-666-26-6.0-6.5	6	6.5	Lead	SW6010D	Soil	21.9	2.86	11/30/2021	12/10/2021
PB-666-27-0.0-0.5	0	0.5	Benzene	SW8260C	Soil	0.00045	0.00085	11/30/2021	12/9/2021
PB-666-27-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	ND	1.1	11/30/2021	12/13/2021
PB-666-27-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.86	11/30/2021	12/13/2021
PB-666-27-3.5-4.0	3.5	4	Benzene	SW8260C	Soil	0.0016	0.00075	11/30/2021	12/9/2021
PB-666-27-3.5-4.0	3.5	4	Benzo(a)pyrene	SW8270D	Soil	0.36	0.4	11/30/2021	12/13/2021
PB-666-27-3.5-4.0	3.5	4	Benzo(b)fluoranthene	SW8270D	Soil	0.52	0.3	11/30/2021	12/13/2021
PB-666-27-6.0-6.5	6	6.5	Benzene	SW8260C	Soil	0.0039	0.0012	11/30/2021	12/9/2021
PB-666-27-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	1.4	0.4	11/30/2021	12/13/2021
PB-666-27-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	1.8	0.3	11/30/2021	12/13/2021
PB-666-28-0.0-0.5	0	0.5	Lead	SW6010D	Soil	392	3.04	11/30/2021	12/10/2021
PB-666-28-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	1	0.2	11/30/2021	12/11/2021
PB-666-28-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	1.5	0.15	11/30/2021	12/11/2021
PB-666-28-0.0-0.5	0	0.5	Naphthalene	SW8270D	Soil	0.16	0.26	11/30/2021	12/11/2021
PB-666-28-2.5-3.0	2.5	3	Lead	SW6010D	Soil	25.5	3.05	11/30/2021	12/10/2021
PB-666-28-2.5-3.0	2.5	3	Benzo(a)pyrene	SW8270D	Soil	ND	0.2	11/30/2021	12/11/2021
PB-666-28-2.5-3.0	2.5	3	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.15	11/30/2021	12/11/2021
PB-666-28-2.5-3.0	2.5	3	Naphthalene	SW8270D	Soil	ND	0.26	11/30/2021	12/11/2021
PB-666-28-6.0-6.5	6	6.5	Lead	SW6010D	Soil	34.7	2.73	11/30/2021	12/10/2021
PB-666-28-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.18	11/30/2021	12/11/2021
PB-666-28-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.14	11/30/2021	12/11/2021
PB-666-28-6.0-6.5	6	6.5	Naphthalene	SW8270D	Soil	ND	0.23	11/30/2021	12/11/2021
PB-666-29-0.0-0.5	0	0.5	Benzene	SW8260C	Soil	ND	0.00078	11/29/2021	12/2/2021
PB-666-29-0.0-0.5	0	0.5	Benzo(a)pyrene	SW8270D	Soil	0.37	0.19	11/29/2021	12/3/2021
PB-666-29-0.0-0.5	0	0.5	Benzo(b)fluoranthene	SW8270D	Soil	0.45	0.14	11/29/2021	12/3/2021
PB-666-29-3.5-4.0	3.5	4	Benzene	SW8260C	Soil	ND	0.00093	11/29/2021	12/2/2021
PB-666-29-3.5-4.0	3.5	4	Benzo(a)pyrene	SW8270D	Soil	1	0.85	11/29/2021	12/6/2021
PB-666-29-3.5-4.0	3.5	4	Benzo(b)fluoranthene	SW8270D	Soil	1.4	0.64	11/29/2021	12/6/2021
PB-666-29-6.0-6.5	6	6.5	Benzene	SW8260C	Soil	ND	0.00079	11/29/2021	12/2/2021
PB-666-29-6.0-6.5	6	6.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.19	11/29/2021	12/4/2021
PB-666-29-6.0-6.5	6	6.5	Benzo(b)fluoranthene	SW8270D	Soil	0.051	0.14	11/29/2021	12/4/2021
DUP-01	4.5	5	Lead	SW6010D	Soil	12100	12.8	5/18/2021	5/27/2021
DUP-01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0026	5/18/2021	5/21/2021
DUP-01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00065	5/18/2021	5/21/2021
DUP-01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/18/2021	5/21/2021
DUP-01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0026	5/18/2021	5/21/2021

Table 1 - 043A (PB 666)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
DUP-01	4.5	5	Benzene	SW8260C	Soil	ND	0.00065	5/18/2021	5/21/2021
DUP-01	4.5	5	Cumene	SW8260C	Soil	ND	0.0013	5/18/2021	5/21/2021
DUP-01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0013	5/18/2021	5/21/2021
DUP-01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0026	5/18/2021	5/21/2021
DUP-01	4.5	5	Toluene	SW8260C	Soil	0.003	0.0013	5/18/2021	5/21/2021
DUP-01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0026	5/18/2021	5/21/2021
DUP-01	4.5	5	Anthracene	SW8270DSIM	Soil	0.057	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.13	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.11	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.15	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.054	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Chrysene	SW8270DSIM	Soil	0.089	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Fluorene	SW8270DSIM	Soil	0.037	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Naphthalene	SW8270DSIM	Soil	0.039	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.13	0.0086	5/18/2021	5/31/2021
DUP-01	4.5	5	Pyrene	SW8270DSIM	Soil	0.15	0.0086	5/18/2021	5/31/2021

Notes
SS -- Soil Sample.
-- R indicates that the sample location was returned to for further delineation.
-- DUP-01 is a field duplicate associated with sample PB-666-21-SS01.

PB 672

PB 662

PB 663

PB 664

PB 666

PB 667

PB 668

PB-666-20R
PB-666-21R
PB-666-20
PB-666-21
PB-666-17
PB-666-16
PB-666-26
PB-666-01
PB-666-02
PB-666-15
PB-666-04
PB-666-05
PB-666-06
PB-666-08
PB-666-07
PB-666-09
PB-666-10
PB-666-13
PB-666-27
PB-666-11
PB-666-11R
PB-666-12
PB-666-12R
PB-666-14
PB-666-29
PB-666-28

Legend

- PESRM Soil Sample Location

Tank Group

- 01
- Previously Closed
- Berm Boundary
- Associated Piping

0 17.5 35 70 Feet

1 inch = 35 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map (PB 666)

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 01\Figure 1 - Site Location and Sampling Map.mxd 2/4/2022 Created by: RKW Checked by: INITIAL Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet



Photograph 1:

View of Tank 043A (PB 666) area following demolition

Product Movement and Waste Disposal Documentation (Tank 043A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#5120103

Load Ticket: 13822

Date: 1-28-21

Scrap

Sold to: Allegheny Tank Car

Location:

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 71240 lbs

Tare Weight: 41010 lbs

Net Weight: 30230 lbs

NorthStar Rep. Signature:

Received By:

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

HILADELPHIA PA, 19145

Ticket #: 20026598
Date: 01/28/2021 10:04 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 6707.666
Loads: 490

DT326-1108 - TRACTOR 1108 TRAILER DT326
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	15.4 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	71240.00	40440.00	30800.00


13822
THE MONSTER
TRAILERS

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 044A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33620

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water N/A feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

09/ 26 / 2022
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33620

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached Summary Table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure.

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-01-SS01	3	3.5	Lead	SW6010D	Soil	52.1	2.28	5/20/2021	6/1/2021
PB-672-01-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00051	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00051	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-01-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.054	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.2	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.18	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.25	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.12	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.15	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.017	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0068	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.21	0.0075	5/20/2021	6/3/2021
PB-672-01-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.28	0.0075	5/20/2021	6/3/2021
PB-672-02-SS01	3	3.5	Lead	SW6010D	Soil	16.8	2.26	5/20/2021	6/1/2021
PB-672-02-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0005	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0005	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-02-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.53	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	2	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	1.7	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	2.2	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	1	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	1.8	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.14	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.035	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	2.9	0.076	5/20/2021	6/4/2021
PB-672-02-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	3.7	0.076	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Lead	SW6010D	Soil	23.4	2.31	5/20/2021	6/1/2021
PB-672-03-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0023	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00058	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0023	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00058	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0023	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0023	5/20/2021	5/28/2021
PB-672-03-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	3.8	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	7.9	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	6.5	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	8.1	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	3.3	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	6.6	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	1.8	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	2.4	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	15	0.2	5/20/2021	6/4/2021
PB-672-03-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	14	0.2	5/20/2021	6/4/2021
PB-672-04-SS01	3	3.5	Lead	SW6010D	Soil	12.1	2.21	5/20/2021	6/1/2021
PB-672-04-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00043	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00043	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-04-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-04-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.017	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.094	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.083	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.1	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.042	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.068	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0035	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.011	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.078	0.0078	5/20/2021	6/3/2021
PB-672-04-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.12	0.0078	5/20/2021	6/3/2021
PB-672-05-SS01	3	3.5	Lead	SW6010D	Soil	14.4	2.3	5/20/2021	6/1/2021
PB-672-05-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0024	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0006	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0024	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0006	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0012	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0024	5/20/2021	5/28/2021
PB-672-05-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.071	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.8	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.78	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.92	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.45	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.64	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0089	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	ND	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.099	0.038	5/20/2021	6/4/2021
PB-672-05-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	1.1	0.038	5/20/2021	6/4/2021
PB-672-06-SS01	4.5	5	Lead	SW6010D	Soil	16.6	2.23	5/20/2021	6/1/2021
PB-672-06-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00048	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00048	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-06-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	0.00098	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0013	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.0011	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0016	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0017	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.00087	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	0.001	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	ND	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.0045	0.0076	5/20/2021	6/3/2021
PB-672-06-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	0.0025	0.0076	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Lead	SW6010D	Soil	20.4	2.24	5/20/2021	6/1/2021
PB-672-07-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.003	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00074	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0015	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.003	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00074	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0015	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0015	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.003	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0015	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.003	5/20/2021	5/28/2021
PB-672-07-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.014	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.16	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.15	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.21	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.1	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.13	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0012	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0037	0.0077	5/20/2021	6/3/2021
PB-672-07-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.058	0.0077	5/20/2021	6/3/2021

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-07-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.22	0.0077	5/20/2021	6/3/2021
PB-672-08-SS01	3	3.5	Lead	SW6010D	Soil	22.8	2.33	5/20/2021	6/1/2021
PB-672-08-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00051	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00051	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	5/20/2021	5/28/2021
PB-672-08-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.68	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	1.4	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	1.1	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	1.2	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.58	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	1.2	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.19	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.02	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	2.6	0.039	5/20/2021	6/4/2021
PB-672-08-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	2.7	0.039	5/20/2021	6/4/2021
PB-672-09-SS01	3	3.5	Lead	SW6010D	Soil	24.5	2.22	5/20/2021	6/1/2021
PB-672-09-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00047	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00094	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00047	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.00094	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00094	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00094	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-09-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0021	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.013	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.023	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.032	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.023	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.012	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	ND	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0023	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.0018	0.0078	5/20/2021	6/3/2021
PB-672-09-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.012	0.0078	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Lead	SW6010D	Soil	20.7	2.26	5/20/2021	6/1/2021
PB-672-10-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00049	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00097	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00049	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.00097	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00097	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00097	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-10-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	ND	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0015	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.0022	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0032	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0046	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.00096	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	ND	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	ND	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.00084	0.0076	5/20/2021	6/3/2021
PB-672-10-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.0011	0.0076	5/20/2021	6/3/2021
PB-672-11-SS01	3.5	4	Lead	SW6010D	Soil	16.2	2.35	5/20/2021	6/1/2021
PB-672-11-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00043	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	Benzene	SW8260C	Soil	0.00043	0.00043	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	Cumene	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-11-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.00086	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	ND	0.0017	5/20/2021	5/28/2021
PB-672-11-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	ND	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	0.0061	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	0.0054	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0069	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0031	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	0.0048	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	ND	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	ND	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	0.0039	0.016	5/20/2021	6/4/2021
PB-672-11-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	0.0076	0.016	5/20/2021	6/4/2021
PB-672-12-SS01	4.5	5	Lead	SW6010D	Soil	133	2.28	5/20/2021	6/1/2021
PB-672-12-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00054	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00054	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0021	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0021	5/20/2021	5/30/2021
PB-672-12-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	0.08	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.24	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.22	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.28	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.11	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.18	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	0.059	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	0.044	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.34	0.0076	5/20/2021	6/3/2021
PB-672-12-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	0.33	0.0076	5/20/2021	6/3/2021
PB-672-13-SS01	4.5	5	Lead	SW6010D	Soil	14.2	2.3	5/20/2021	6/1/2021
PB-672-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0028	0.0025	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00063	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0011	0.0025	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00063	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Cumene	SW8260C	Soil	0.00026	0.0013	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.00032	0.0013	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0025	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0013	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.00174	0.0025	5/20/2021	5/30/2021
PB-672-13-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	0.14	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.47	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.48	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.58	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.27	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.4	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	0.73	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	8.1	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.58	0.15	5/20/2021	6/4/2021
PB-672-13-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	0.62	0.15	5/20/2021	6/4/2021
PB-672-14-SS01	4.5	5	Lead	SW6010D	Soil	128	2.29	5/20/2021	6/1/2021
PB-672-14-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0023	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00058	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0023	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00058	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.0012	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0012	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0023	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0012	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0023	5/20/2021	5/30/2021
PB-672-14-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	0.073	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	0.24	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	0.24	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.26	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.12	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	0.16	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	0.039	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	0.028	0.015	5/20/2021	6/3/2021

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-14-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	0.22	0.015	5/20/2021	6/3/2021
PB-672-14-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	0.3	0.015	5/20/2021	6/3/2021
PB-672-15-SS01	3	3.5	Lead	SW6010D	Soil	18.1	2.31	5/20/2021	6/1/2021
PB-672-15-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00049	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00098	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00049	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.00098	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00098	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00098	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-15-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0076	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.036	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.03	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.042	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.015	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.032	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.002	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.005	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.026	0.0079	5/20/2021	6/4/2021
PB-672-15-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.048	0.0079	5/20/2021	6/4/2021
PB-672-16-SS01	3	3.5	Lead	SW6010D	Soil	34.5	2.29	5/20/2021	6/1/2021
PB-672-16-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0018	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00044	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00088	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0018	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00044	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.00088	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00088	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0018	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00088	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0018	5/20/2021	5/28/2021
PB-672-16-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.00082	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0045	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.0029	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0043	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.002	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.0036	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	ND	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0019	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.0035	0.0078	5/20/2021	6/3/2021
PB-672-16-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.0055	0.0078	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Lead	SW6010D	Soil	80.6	2.41	5/20/2021	6/1/2021
PB-672-17-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0005	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0005	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.001	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.001	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.001	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	5/20/2021	5/30/2021
PB-672-17-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.028	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.11	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.086	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.11	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.054	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.088	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.011	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.011	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.12	0.0081	5/20/2021	6/3/2021
PB-672-17-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.18	0.0081	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Lead	SW6010D	Soil	21.3	2.42	5/20/2021	6/1/2021
PB-672-18-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0026	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00065	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0026	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00065	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0013	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0013	5/20/2021	5/28/2021

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-18-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0026	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0013	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0026	5/20/2021	5/28/2021
PB-672-18-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.013	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.069	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.056	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.068	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.036	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.057	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0039	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.05	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.041	0.0083	5/20/2021	6/3/2021
PB-672-18-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.086	0.0083	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Lead	SW6010D	Soil	21.1	2.27	5/20/2021	6/1/2021
PB-672-19-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00048	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00048	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00096	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0019	5/20/2021	5/28/2021
PB-672-19-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.001	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.0069	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.0053	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.0068	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0038	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.0048	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	ND	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0017	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.0049	0.008	5/20/2021	6/3/2021
PB-672-19-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.01	0.008	5/20/2021	6/3/2021
PB-672-20-SS01	4.5	5	Lead	SW6010D	Soil	45.4	2.28	5/20/2021	6/1/2021
PB-672-20-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0022	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00056	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0022	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00056	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.0011	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0011	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0022	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0011	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0022	5/20/2021	5/28/2021
PB-672-20-SS01	4.5	5	Anthracene	SW8270DSIM	Soil	2.5	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Benzo(a)anthracene	SW8270DSIM	Soil	7	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Benzo(a)pyrene	SW8270DSIM	Soil	4.6	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Benzo(b)fluoranthene	SW8270DSIM	Soil	6	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	1.9	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Chrysene	SW8270DSIM	Soil	5.1	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Fluorene	SW8270DSIM	Soil	0.66	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Naphthalene	SW8270DSIM	Soil	0.15	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Phenanthrene	SW8270DSIM	Soil	6.7	0.16	5/20/2021	6/5/2021
PB-672-20-SS01	4.5	5	Pyrene	SW8270DSIM	Soil	8.8	0.16	5/20/2021	6/5/2021
PB-672-21-SS01	2	2.5	Lead	SW6010D	Soil	15.2	2.2	5/20/2021	6/1/2021
PB-672-21-SS01	2	2.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00052	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0021	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Benzene	SW8260C	Soil	0.0014	0.00052	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Cumene	SW8260C	Soil	ND	0.001	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Ethyl Benzene	SW8260C	Soil	0.00029	0.001	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0021	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Toluene	SW8260C	Soil	0.0019	0.001	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Xylenes (total)	SW8260C	Soil	0.00177	0.0021	5/20/2021	5/28/2021
PB-672-21-SS01	2	2.5	Anthracene	SW8270DSIM	Soil	0.0044	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.02	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.022	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.024	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.017	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Chrysene	SW8270DSIM	Soil	0.019	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Fluorene	SW8270DSIM	Soil	0.0042	0.0077	5/20/2021	6/4/2021

Table 1 - 044A (PB 672)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-672-21-SS01	2	2.5	Naphthalene	SW8270DSIM	Soil	0.0069	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Phenanthrene	SW8270DSIM	Soil	0.02	0.0077	5/20/2021	6/4/2021
PB-672-21-SS01	2	2.5	Pyrene	SW8270DSIM	Soil	0.03	0.0077	5/20/2021	6/4/2021
PB-672-22-SS01	1	1.5	Lead	SW6010D	Soil	292	2.37	5/20/2021	6/1/2021
PB-672-22-SS01	1	1.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0008	0.0023	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00057	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.001	0.0028	5/20/2021	5/28/2021
PB-672-22-SS01	1	1.5	Benzene	SW8260C	Soil	ND	0.00057	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	Cumene	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	Ethyl Benzene	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0023	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	Toluene	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	Xylenes (total)	SW8260C	Soil	0.00172	0.0023	5/20/2021	5/30/2021
PB-672-22-SS01	1	1.5	Anthracene	SW8270DSIM	Soil	0.23	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Benzo(a)anthracene	SW8270DSIM	Soil	1.5	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Benzo(a)pyrene	SW8270DSIM	Soil	1.3	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	1.5	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	1	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Chrysene	SW8270DSIM	Soil	1.2	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Fluorene	SW8270DSIM	Soil	0.05	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Naphthalene	SW8270DSIM	Soil	0.17	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Phenanthrene	SW8270DSIM	Soil	0.87	0.04	5/20/2021	6/3/2021
PB-672-22-SS01	1	1.5	Pyrene	SW8270DSIM	Soil	2	0.04	5/20/2021	6/3/2021
PB-672-23-SS01	2	2.5	Lead	SW6010D	Soil	153	2.72	5/21/2021	6/8/2021
PB-672-23-SS01	2	2.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0036	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00089	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0036	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Benzene	SW8260C	Soil	0.00082	0.00089	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Cumene	SW8260C	Soil	ND	0.0018	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0036	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Toluene	SW8260C	Soil	ND	0.0018	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Xylenes (total)	SW8260C	Soil	ND	0.0036	5/21/2021	5/28/2021
PB-672-23-SS01	2	2.5	Anthracene	SW8270DSIM	Soil	0.034	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.28	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.52	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.37	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.56	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Chrysene	SW8270DSIM	Soil	0.43	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Fluorene	SW8270DSIM	Soil	0.024	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Naphthalene	SW8270DSIM	Soil	0.1	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Phenanthrene	SW8270DSIM	Soil	0.16	0.094	5/21/2021	6/4/2021
PB-672-23-SS01	2	2.5	Pyrene	SW8270DSIM	Soil	0.2	0.094	5/21/2021	6/4/2021

Note
SS -- Soil Sample.

PB 662

PB 663

PB 664

PB 666

PB 667

PB 668

PB 672

PB-672-01
PB-672-02
PB-672-03
PB-672-04
PB-672-05
PB-672-06
PB-672-07
PB-672-08
PB-672-09
PB-672-10
PB-672-11
PB-672-12
PB-672-13
PB-672-14
PB-672-15
PB-672-16
PB-672-17
PB-672-18
PB-672-19
PB-672-20
PB-672-21
PB-672-22
PB-672-23

Legend

- PESRM Soil Sample Location

Tank Group

- 01
- Previously Closed
- Berm Boundary
- Associated Piping

0 17.5 35 70 Feet

1 inch = 35 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map (PB 672)

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXD\AST Work\Tank Group 01\Figure 1 - Site Location and Sampling Map.mxd 2/4/2022 Created by: RKW Checked by: INITIAL Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet



Photograph 1:

View of Tank 044A (PB 672) area following demolition

Product Movement and Waste Disposal Documentation (Tank 044A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#25120103

Load Ticket: 11107

Date: 03-23-21

Scrap

Sold to: Allegheny

Location: Tank 663

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 66496 lbs

Tare Weight: 41780 lbs

Net Weight: 24716 lbs

NorthStar Rep. Signature:_____

Received By: Jose C

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20026847
Date: 03/23/2021 1:13 PM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 9735.656
Loads: 738

DT328-1109 - TRACTOR 1109 TRAILER DT328
CARLAD - CARLA DAVILA

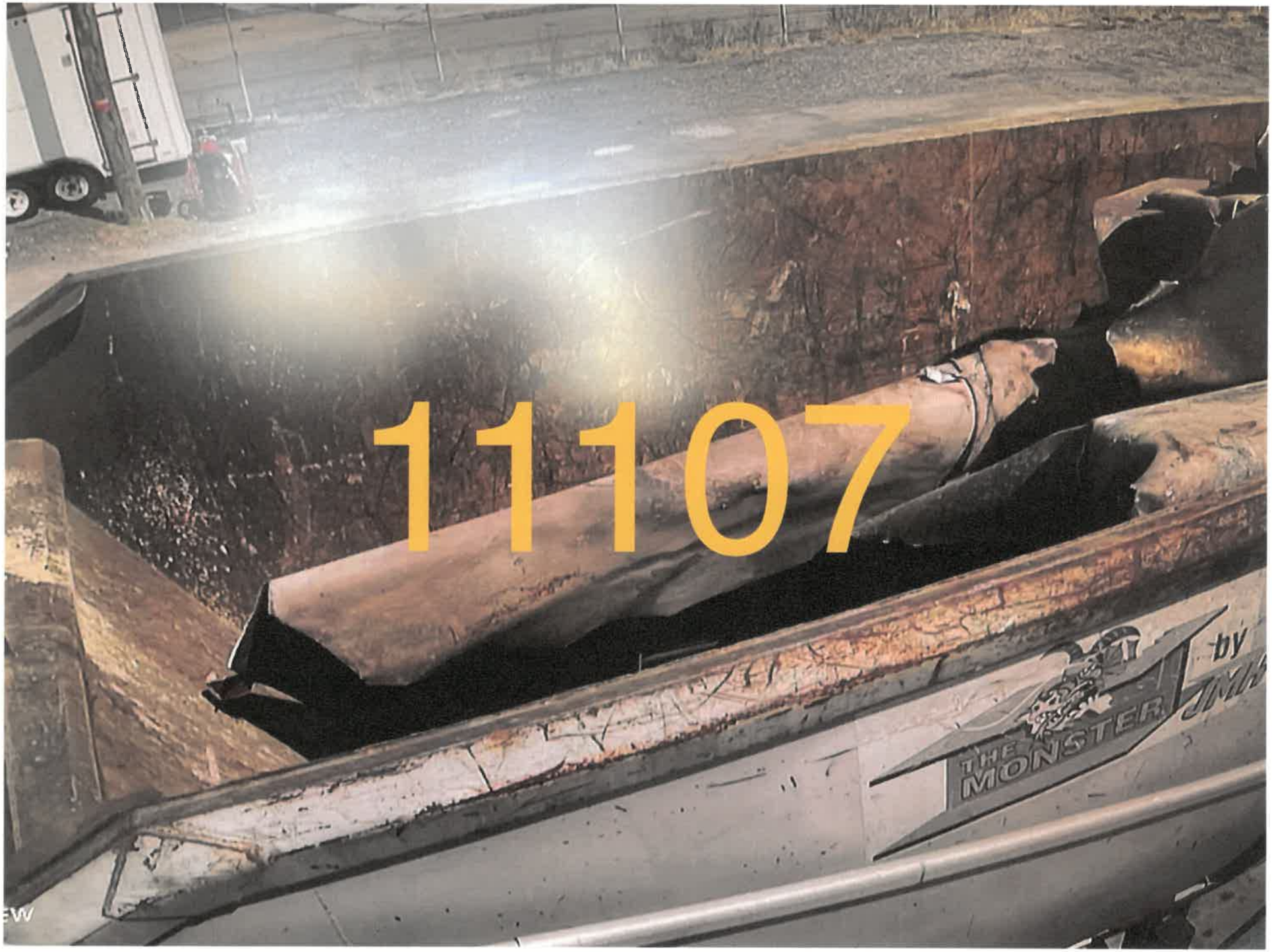
Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	12.08 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	66440.00	42280.00	24160.00


11107
THE MONSTER
by

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 074A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33620

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water N/A feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

09 / 26 / 2022
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33620

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached Summary Table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure.

Table 1 - 074A (PB 663)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-663-01-SS01	3	3.5	Lead	SW6010D	Soil	1470	2.84	5/19/2021	5/31/2021
PB-663-01-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.004	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.001	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.002	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.004	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.001	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.002	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.002	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.004	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Toluene	SW8260C	Soil	0.0025	0.002	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.004	5/19/2021	5/26/2021
PB-663-01-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	3.4	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	9	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	7.8	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	10	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	4.8	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	7	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	1.3	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	1.2	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	13	0.19	5/19/2021	6/2/2021
PB-663-01-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	14	0.19	5/19/2021	6/2/2021
PB-663-02-SS01	3	3.5	Lead	SW6010D	Soil	7180	15.1	5/19/2021	5/31/2021
PB-663-02-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.17	0.22	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.056	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.11	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.092	0.22	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Benzene	SW8260C	Soil	0.1	0.056	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Cumene	SW8260C	Soil	0.022	0.11	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.038	0.11	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.22	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Toluene	SW8260C	Soil	4.4	0.11	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.268	0.22	5/19/2021	5/26/2021
PB-663-02-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.072	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.7	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.67	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.98	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.47	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.62	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0096	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.1	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.35	0.02	5/19/2021	6/1/2021
PB-663-02-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.81	0.02	5/19/2021	6/1/2021
PB-663-03-SS01	2	2.5	Lead	SW6010D	Soil	3380	2.79	5/19/2021	5/31/2021
PB-663-03-SS01	2	2.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.097	0.22	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00064	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.039	0.22	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Benzene	SW8260C	Soil	0.27	0.055	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Cumene	SW8260C	Soil	0.014	0.11	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Ethyl Benzene	SW8260C	Soil	0.034	0.11	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0026	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Toluene	SW8260C	Soil	2.8	0.11	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Xylenes (total)	SW8260C	Soil	0.143	0.22	5/19/2021	5/26/2021
PB-663-03-SS01	2	2.5	Anthracene	SW8270DSIM	Soil	7.7	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Benzo(a)anthracene	SW8270DSIM	Soil	22	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Benzo(a)pyrene	SW8270DSIM	Soil	18	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	23	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	10	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Chrysene	SW8270DSIM	Soil	18	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Fluorene	SW8270DSIM	Soil	3.3	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Naphthalene	SW8270DSIM	Soil	0.92	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Phenanthrene	SW8270DSIM	Soil	30	0.48	5/19/2021	6/2/2021
PB-663-03-SS01	2	2.5	Pyrene	SW8270DSIM	Soil	33	0.48	5/19/2021	6/2/2021
PB-663-04-SS01	3	3.5	Lead	SW6010D	Soil	461	2.78	5/19/2021	5/31/2021
PB-663-04-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0035	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00087	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0017	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0035	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	Benzene	SW8260C	Soil	0.00048	0.00087	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0017	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0017	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0035	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	Toluene	SW8260C	Soil	0.0011	0.0017	5/19/2021	5/26/2021
PB-663-04-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0035	5/19/2021	5/26/2021

Table 1 - 074A (PB 663)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-663-04-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.059	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.045	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.1	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.13	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.12	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.043	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.05	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.23	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.062	0.0097	5/19/2021	6/1/2021
PB-663-04-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.034	0.0097	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Lead	SW6010D	Soil	23.1	3.04	5/19/2021	5/31/2021
PB-663-05-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0033	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00083	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.0016	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0033	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Benzene	SW8260C	Soil	ND	0.00083	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Cumene	SW8260C	Soil	ND	0.0016	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.0016	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0033	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.0016	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	ND	0.0033	5/19/2021	5/26/2021
PB-663-05-SS01	3.5	4	Anthracene	SW8270DSIM	Soil	0.13	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Benzo(a)anthracene	SW8270DSIM	Soil	0.42	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Benzo(a)pyrene	SW8270DSIM	Soil	0.57	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.79	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.53	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Chrysene	SW8270DSIM	Soil	0.36	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Fluorene	SW8270DSIM	Soil	0.014	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Naphthalene	SW8270DSIM	Soil	0.052	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Phenanthrene	SW8270DSIM	Soil	0.91	0.02	5/19/2021	6/1/2021
PB-663-05-SS01	3.5	4	Pyrene	SW8270DSIM	Soil	0.56	0.02	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Lead	SW6010D	Soil	27.7	2.45	5/19/2021	5/31/2021
PB-663-06-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260C	Soil	0.063	0.15	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	1,2-Dibromoethane	SW8260C	Soil	ND	0.0008	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	1,2-Dichloroethane	SW8260C	Soil	ND	0.0016	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260C	Soil	0.017	0.15	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Benzene	SW8260C	Soil	0.02	0.038	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Cumene	SW8260C	Soil	ND	0.0016	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Ethyl Benzene	SW8260C	Soil	0.018	0.077	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0032	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Toluene	SW8260C	Soil	1.9	0.077	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Xylenes (total)	SW8260C	Soil	0.087	0.15	5/19/2021	5/26/2021
PB-663-06-SS01	2.5	3	Anthracene	SW8270DSIM	Soil	0.87	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Benzo(a)anthracene	SW8270DSIM	Soil	5.3	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Benzo(a)pyrene	SW8270DSIM	Soil	4.8	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Benzo(b)fluoranthene	SW8270DSIM	Soil	6.6	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270DSIM	Soil	3	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Chrysene	SW8270DSIM	Soil	4.3	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Fluorene	SW8270DSIM	Soil	0.17	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Naphthalene	SW8270DSIM	Soil	0.22	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Phenanthrene	SW8270DSIM	Soil	3	0.081	5/19/2021	6/1/2021
PB-663-06-SS01	2.5	3	Pyrene	SW8270DSIM	Soil	6.4	0.081	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Lead	SW6010D	Soil	1420	2.05	5/19/2021	5/31/2021
PB-663-07-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0027	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00067	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0027	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00067	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0027	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0013	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0027	5/19/2021	5/26/2021
PB-663-07-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.15	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.19	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.12	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.21	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.17	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.19	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0042	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.014	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.49	0.035	5/19/2021	6/1/2021
PB-663-07-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.37	0.035	5/19/2021	6/1/2021
PB-663-08-SS01	3	3.5	Lead	SW6010D	Soil	28.7	2.13	5/20/2021	6/1/2021

Table 1 - 074A (PB 663)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-663-08-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0029	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00072	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0029	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00072	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0014	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0014	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0029	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0014	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0029	5/20/2021	5/26/2021
PB-663-08-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.32	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	1.2	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.96	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	1.3	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.59	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.84	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.082	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.089	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	1.1	0.036	5/20/2021	6/3/2021
PB-663-08-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	1.5	0.036	5/20/2021	6/3/2021
PB-663-09-SS01	3	3.5	Lead	SW6010D	Soil	2010	2.16	5/20/2021	6/1/2021
PB-663-09-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0036	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00089	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0036	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00089	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0036	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0036	5/20/2021	5/26/2021
PB-663-09-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.85	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.34	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.37	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.56	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.38	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.32	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.1	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.014	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	2.4	0.072	5/20/2021	6/4/2021
PB-663-09-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	2.4	0.072	5/20/2021	6/4/2021
PB-663-10-SS01	3	3.5	Lead	SW6010D	Soil	3420	2.27	5/20/2021	6/1/2021
PB-663-10-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0032	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0008	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0016	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0032	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0008	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0016	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0016	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0032	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0016	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0032	5/20/2021	5/26/2021
PB-663-10-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.17	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.11	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.096	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.13	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.079	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.087	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.27	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.098	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	1	0.016	5/20/2021	6/3/2021
PB-663-10-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.4	0.016	5/20/2021	6/3/2021
PB-663-11-SS01	1.5	2	Lead	SW6010D	Soil	1010	2.64	5/18/2021	5/27/2021
PB-663-11-SS01	1.5	2	1,2,4-Trimethylbenzene	SW8260C	Soil	0.035	0.0025	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	1,2-Dibromoethane	SW8260C	Soil	ND	0.00063	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	1,3,5-Trimethylbenzene	SW8260C	Soil	0.011	0.0025	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Benzene	SW8260C	Soil	0.00063	0.00063	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Cumene	SW8260C	Soil	0.0011	0.0013	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Ethyl Benzene	SW8260C	Soil	0.0033	0.0013	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0025	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Toluene	SW8260C	Soil	0.0062	0.0013	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Xylenes (total)	SW8260C	Soil	0.031	0.0025	5/18/2021	5/23/2021
PB-663-11-SS01	1.5	2	Anthracene	SW8270DSIM	Soil	28	1.8	5/18/2021	6/1/2021

Table 1 - 074A (PB 663)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-663-11-SS01	1.5	2	Benzo(a)anthracene	SW8270DSIM	Soil	57	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Benzo(a)pyrene	SW8270DSIM	Soil	46	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Benzo(b)fluoranthene	SW8270DSIM	Soil	55	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Benzo(g,h,i)perylene	SW8270DSIM	Soil	25	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Chrysene	SW8270DSIM	Soil	46	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Fluorene	SW8270DSIM	Soil	11	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Naphthalene	SW8270DSIM	Soil	6.1	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Phenanthrene	SW8270DSIM	Soil	100	1.8	5/18/2021	6/1/2021
PB-663-11-SS01	1.5	2	Pyrene	SW8270DSIM	Soil	87	1.8	5/18/2021	6/1/2021
PB-663-12-SS01	3	3.5	Lead	SW6010D	Soil	2430	2.97	5/20/2021	6/1/2021
PB-663-12-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0037	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00092	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0037	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00092	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0037	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0018	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0037	5/20/2021	5/26/2021
PB-663-12-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.032	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.022	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.017	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.024	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.013	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.016	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.037	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.014	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.14	0.01	5/20/2021	6/3/2021
PB-663-12-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.067	0.01	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Lead	SW6010D	Soil	73.6	2.27	5/20/2021	6/1/2021
PB-663-13-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0005	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.0005	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.001	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.001	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.001	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	5/20/2021	5/26/2021
PB-663-13-SS01	3	3.5	Anthracene	SW8270DSIM	Soil	0.0078	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.055	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.024	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.04	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.0084	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Chrysene	SW8270DSIM	Soil	0.038	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Fluorene	SW8270DSIM	Soil	0.0018	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0019	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.015	0.0077	5/20/2021	6/3/2021
PB-663-13-SS01	3	3.5	Pyrene	SW8270DSIM	Soil	0.053	0.0077	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Lead	SW6010D	Soil	34.4	2.74	5/20/2021	6/1/2021
PB-663-14-SS01	1	1.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.014	0.0044	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0011	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0022	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0043	0.0044	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Benzene	SW8260C	Soil	0.028	0.0011	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Cumene	SW8260C	Soil	0.0026	0.0022	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Ethyl Benzene	SW8260C	Soil	0.016	0.0022	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0044	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Toluene	SW8260C	Soil	0.071	0.0022	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Xylenes (total)	SW8260C	Soil	0.072	0.0044	5/20/2021	5/30/2021
PB-663-14-SS01	1	1.5	Anthracene	SW8270DSIM	Soil	6.2	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Benzo(a)anthracene	SW8270DSIM	Soil	14	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Benzo(a)pyrene	SW8270DSIM	Soil	18	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	19	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	12	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Chrysene	SW8270DSIM	Soil	11	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Fluorene	SW8270DSIM	Soil	2.6	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Naphthalene	SW8270DSIM	Soil	1.1	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Phenanthrene	SW8270DSIM	Soil	19	0.48	5/20/2021	6/3/2021
PB-663-14-SS01	1	1.5	Pyrene	SW8270DSIM	Soil	24	0.48	5/20/2021	6/3/2021
PB-663-15-0.0-0.5	0	0.5	Lead	SW6010D	Soil	785	2.55	11/30/2021	12/10/2021
PB-663-15-14.5-15.0	14.5	15	Lead	SW6010D	Soil	50.6	3.35	1/17/2022	1/19/2022

Table 1 - 074A (PB 663)
Sample/Analysis Information (Attachment for Section III.)

Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
PB-663-15-3.0-3.5	3	3.5	Lead	SW6010D	Soil	834	2.46	11/30/2021	12/10/2021
PB-663-15-6.0-6.5	6	6.5	Lead	SW6010D	Soil	1060	2.4	11/30/2021	12/10/2021
PB-663-16-0.0-0.5	0	0.5	Lead	SW6010D	Soil	621	3.02	12/1/2021	12/8/2021
PB-663-16-3.0-3.5	3	3.5	Lead	SW6010D	Soil	234	2.53	12/1/2021	12/8/2021
PB-663-16-6.0-6.5	6	6.5	Lead	SW6010D	Soil	87.1	2.71	12/1/2021	12/8/2021
PB-663-17-0.0-0.5	0	0.5	Lead	SW6010D	Soil	508	2.92	12/1/2021	12/8/2021
PB-663-17-6.0-6.5	6	6.5	Lead	SW6010D	Soil	156	2.79	12/1/2021	12/8/2021
DUP-02	3	3.5	Lead	SW6010D	Soil	54.9	2.63	5/20/2021	6/1/2021
DUP-02	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0032	5/20/2021	5/30/2021
DUP-02	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0008	5/20/2021	5/30/2021
DUP-02	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0016	5/20/2021	5/30/2021
DUP-02	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0032	5/20/2021	5/30/2021
DUP-02	3	3.5	Benzene	SW8260C	Soil	ND	0.0008	5/20/2021	5/30/2021
DUP-02	3	3.5	Cumene	SW8260C	Soil	ND	0.0016	5/20/2021	5/30/2021
DUP-02	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0016	5/20/2021	5/30/2021
DUP-02	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0032	5/20/2021	5/30/2021
DUP-02	3	3.5	Toluene	SW8260C	Soil	ND	0.0016	5/20/2021	5/30/2021
DUP-02	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0032	5/20/2021	5/30/2021
DUP-02	3	3.5	Anthracene	SW8270DSIM	Soil	0.034	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Benzo(a)anthracene	SW8270DSIM	Soil	0.15	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Benzo(a)pyrene	SW8270DSIM	Soil	0.11	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Benzo(b)fluoranthene	SW8270DSIM	Soil	0.14	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Benzo(g,h,i)perylene	SW8270DSIM	Soil	0.062	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Chrysene	SW8270DSIM	Soil	0.11	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Fluorene	SW8270DSIM	Soil	0.0066	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Naphthalene	SW8270DSIM	Soil	0.0055	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Phenanthrene	SW8270DSIM	Soil	0.15	0.0088	5/20/2021	6/4/2021
DUP-02	3	3.5	Pyrene	SW8270DSIM	Soil	0.22	0.0088	5/20/2021	6/4/2021

Notes
SS -- Soil Sample.
-- DUP-02 is a field duplicate associated with sample PB-663-08-SS01.

PB-663-16
PB-663-17
PB 662
PB-663-15
PB-663-01
PB-663-02
PB-663-03
PB-663-04
PB-663-05
PB-663-06
PB-666-22
PB-666-23
PB-666-24
PB-663-07
PB-666-19
PB-663-08
PB-663-09
PB-663-10
PB-666-25
PB 663
PB-663-13
PB-666-18
PB 664
PB-663-11
PB-663-14
PB-663-12
PB-666-03
PB 666
PB 668
PB 667
PB 672

Legend

- PESRM Soil Sample Location

Tank Group

- 01
- Previously Closed
- Berm Boundary
- Associated Piping

0 17.5 35 70 Feet

1 inch = 35 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map (PB 663)

Figure 1

File: N:\GIS\Pr\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 01\Figure 1 - Site Location and Sampling Map.mxd 2/4/2022 Created by: RKW Checked by: INITIAL Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet



Photograph 1:

View of Tank 074A (PB 663) during the beginning stages of demolition.



Photograph 2:

View of Tank 074A (PB 663) interior during demolition process.



Photograph 3:

View of waste loading.



Photograph 4:

View of former tank location.

Product Movement and Waste Disposal Documentation (Tank 074A)

NorthStar
Contracting Group, Inc.

PES Project Load Ticket

#5120103

Load Ticket: 13760

Date: 1-22-21

Scrap

Sold to: Allgreen

Location: Tank 622

Carrier: Allgreen

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Shoring and Pipe

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 64560 lbs

Tare Weight: 40440 lbs

Net Weight: 24120 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20026546
Date: 01/22/2021 10:24 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 6016.776
Loads: 438

DT326-1108 - TRACTOR 1108 TRAILER DT326
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	12.06 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	64560.00	40440.00	24120.00


13760

Product Movement and Waste Disposal Documentation (Tank Group 01)

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
2522	PB 663	**79,220**	**35,100**	**22.06**	**21.74**	91111	A	**-1.94**
4167	PB 663	**76,460**	**31,380**	**22.54**	**22.71**	91111	B	**-1.46**
4214	PB 663	**79,200**	**31,040**	**24.08**	**24.12**	91111	C	**0.08**
4112	PB 663			**24.63**	**24.71**	91111	D	**0.63**
3335	PB 663	81,340	34,700	**23.32**	**23.34**	91111	E	**-0.68**
2387	PB 663	**70,180**	**30,520**	**19.83**	**19.92**	91111	F	**-4.17**
3417	PB 663	**72,240**	**31,000**	**20.62**	**20.72**	91434	A	**-3.38**
4211	PB 663	**82,020**	**37,140**	**22.44**	**22.88**	91434	B	**-1.56**
4234	PB 663	**77,300**	**30,840**	**23.23**	**23.22**	91434	C	**-0.77**
4151	PB 663	83,340	35,120	**24.11**	**24.15**	91434	D	**0.11**
2029	PB 663	**75,120**	**30,340**	**22.39**	**22.51**	91434	E	**-1.61**
2128	PB 663	**79,180**	**35,220**	**21.98**	**24.07**	91434	F	**-2.02**
4178	PB 663	79,880	34,840	**22.52**	**22.42**	91525	A	**-1.48**
4035	PB 663	78,980	34,840	**22.07**	**24.20**	91525	B	**-1.93**
4169	PB 663	79,960	31,060	**24.45**	**22.84**	91525	C	**0.45**
4059	PB 663	79,280	30,980	**24.15**	**24.17**	91525	D	**0.15**
3121	PB 663	82,400	34,820	**23.79**	**23.76**	91525	E	**-0.21**
4196	PB 663	81,100	35,220	**22.94**	24.55	91525	F	**-1.06**
				411.15	**416.03**			**-20.85**
		Running Total (tons)		**411.15**	**416.03**			

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
4201	PB 663	79,240	35,140	**22.05**	**21.94**	91458	A	**-1.95**
3036	PB 663	82,670	35,320	**23.68**	**23.75**	91458	B	**-0.325**
4172	PB 663	83,120	35,520	**23.80**	**23.53**	91458	C	**-0.2**
4204	PB 663	81,560	34,180	**23.69**	**23.18**	91458	D	**-0.31**
4095	PB 663	82,600	35,380	**23.61**	**23.63**	91458	E	**-0.39**
4188	PB 663	81,680	35,120	**23.28**	**23.31**	91458	F	**-0.72**
3402	PB 663	75,960	32,160	**21.90**	**22.84**	91497	A	**-2.1**
2487	PB 663	80,900	34,660	**23.12**	**23.06**	91497	B	**-0.88**
3074	PB 663	82,280	35,000	**23.64**	**23.55**	91497	C	**-0.36**
3437	PB 663	81,640	34,720	**23.46**	**23.01**	91497	D	**-0.54**
4068	PB 663	80,880	35,100	**22.89**	**22.84**	91497	E	**-1.11**
4135	PB 663	80,000	35,160	**22.42**	**22.37**	91497	F	**-1.58**
				277.54	**277.01**			**-10.47**
		Running Total (tons)		**688.69**	**693.04**			

Start Date	End Date	From Tank #	Product Qty. (gal)	Product Qty. (bbls)	Transferred To Tank #	Product	Method of Movement
1/4/2021	1/26/2021	663		298	227	Main Frac Bottoms	Vacuum Truck

Bill of Lading (Page 1 of 2)

DOCUMENT # 91458A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41265

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224201		nh	
		RAIL CAR # EPIX91458		17039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 03/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rembodeaux Date: 4-30-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91458A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA0000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: STEPHEN RITCHIE	Date: 4-30-21

EPI4224201

TICKET 13 TICKET 13

ID 653209
GROSS 79140 lb INBOUND
09:19AM 04/30/2021

OUTBOUND

GROSS 79140 lb RECALLED
TARE 35260 lb
NET 43880 lb

NET 21.94 TON

03:52PM 04/30/2021

1

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760905

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

760458

DOCUMENT # 91458B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a)(24)
Ticket 42666

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223036			
		RAIL CAR # EPIX91458			
		ERG#171			1039

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carder of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 4-30-21

760408

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT #: 91450B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA0000 117272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per:	Date: 4.30.21

EPIU223039

TICKET 18 TICKET 18

ID 653375
GROSS 82220 lb INBOUND
09:51AM 04/30/2021

OUTBOUND

GROSS 82220 lb RECALLED
TARE 34720 lb
NET 47500 lb

NET 23.75 TON

03:59PM 04/30/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760108

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

760410

DOCUMENT # 91458C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41267	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224172			
		RAIL CAR # EPIX91458			
		ER60471			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubuleaux Date: 4-30-21

Bill of Lading (Continuation Sheet) 2 of 2

760410

DOCUMENT # 91458C

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company

Carrier 3:Chemical Waste Management Transportation LAD000777272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt

Per: Date:

Carrier 3 Acknowledgement of Receipt

Per: Joseph Courville Date: 4-30-2021

EPIU224172

TICKET 21 TICKET 21

ID 652592
GROSS 80120 lb INBOUND
09:58AM 04/30/2021

OUTBOUND

GROSS 80120 lb RECALLED
TARE 33060 lb
NET 47060 lb

NET 23.53 TON

04:59PM 04/30/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760110

WEIGHED BY _____

760416

.ding (Page 1 of 2)

DOCUMENT # 91468D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41268	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224204			
		RAIL CAR # EPIX91458		NA	
		ERG#171		1H039	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Chabodeaux Date: 4-29-21

30

7604/16

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91460D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA0000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: STEPHEN BUCHIE	Date: 4-30-21

EPIH 224204

TICKET 33

ID 914 853155
GROSS 81360 lb INBOUND
01:06PM 04/30/2021

CC

DD

GROSS 35000 lb

2:24PM 05/03/2021

net 46360

23.18

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760416

WEIGHED BY _____

760428

Bill of Lading (Page 1 of 2)

DOCUMENT # 91458E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2165	Special Instructions:

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 4269	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224095			
		RAIL CAR # EPIX91458			
		926#171 H035			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville /AD Date: 05-03-21

760428

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91450E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LAD000147272 8003362169

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Joseph Connelly	Date: 4-30-2021

EPTU22407

TICKET 27

ID 652593
GROSS 79720 lb INBOUND
11:56AM 05/03/2021

GROSS 32460 lb

0:48AM 05/04/2021

47260

23.63

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760428

WEIGHED BY 5-3-21

Bill of Lading (Page 1 of 2)

760418

DOCUMENT # 91458F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)

Ticket 41270

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224188		17039	
		RAIL CAR # EPIX91458			
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbar Leaux Date: 4-30-21

Bill of Lading (Continuation Sheet) 2 of 2

7604118

DOCUMENT # 91458F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LAD000777272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Dan McCrary	Date: 4.30.21

"Epi4 22c/18d

TICKET 35 80960

ID 653156
GROSS 80960 lb INBOUND
01:40PM 04/30/2021
2:03PM 05/03/2021

GROSS 34340 lb

46620

23.31

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760c18

WEIGHED BY _____

160299 00009149711

760599

Bill of Lading (Page 1 of 2)

DOCUMENT # 91497A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION FROM	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FORM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41262	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223402		NA	
		RAIL CAR # EPIX91497			
		ERG#171		17.39	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per.	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shippor's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Thibodeaux Date: 4-29-21

Bill of Lading (Continuation Sheet) 2 of 2

760299

DOCUMENT # 91497A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA 0000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Derrick Lear	Date: 4-29-21

EPIU 223102

TICKET 48

ID 653155
GROSS 80520 lb INBOUND
02:47PM 04/29/2021

-34840
45680

22.84

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760399

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

760400

DOCUMENT # 91497B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2109

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM

VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41261

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU222487		nh	
		RAIL CAR # EPIX91497		14039	
		ERG# 171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardson Date: 4-29-21

760x100

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 914978

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LAD000777272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Joseph Cano	Date: 4-29-2021

EPIU222487

TICKET 50

ID 652593
GROSS 78340 lb INBOUND
02:59PM 04/29/2021

GROSS 32220 lb
01:29PM 04/30/2021
IN

46120
32220

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760400

WEIGHED BY _____

760398

Bill of Lading (Page 1 of 2)

DOCUMENT # 91497C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM

VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)

Ticket 41259

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223074		AH	
		RAIL CAR # EPIX91497		1039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordieux Date: 4-29-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91497C

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LAD000777272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: STEPHEN RITCHIE	Date: 4-29-21

EPIC
223074

ID 156
RECEIVING ID 760398
BOX ID .

GROSS 81180 LB INBOUND

04/29/2021 14:25
ID 156
RECEIVING ID 760398
BOX ID .

GROSS 81180 LB RECALLED
TARE 34080 LB SWAPPED
NET 47100 LB

TONS 23.55

15:24 04/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET #_____

WEIGHED BY_____

760596

Bill of Lading (Page 1 of 2)

DOCUMENT # 91497D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2165

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41258

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223437			
		RAIL CAR # EPIX91497			
		SPG#171 H038			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (lii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Neille/GQuille Date: 04-29-21

Bill of Lading (Continuation Sheet) 2 of 2 760396

DOCUMENT # 91497D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-2165

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management ~~Transportation~~ Inc LAD000147272 800-336-2165

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Joseph	Date: 4-29-2021

9PIU283151

TICKET 39 TICKET 39

ID 652592
GROSS 78880 lb INBOUND
12:53PM 04/29/2021

OUTBOUND

GROSS 78880 lb RECALLED
TARE 32860 lb
NET 46020 lb

NET 23.01 TON

04:54PM 04/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760396

WEIGHED BY _____

760395

Bill of Lading (Page 1 of 2)

DOCUMENT # 91497E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions: 440-258-7524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
4121
Ticket [redacted]

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224068			
		RAIL CAR # EPIX91497			
		9176#171 HD35			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville A. Deville Date: 04-29-21

760395

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91497E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-3169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Inc ~~Transportation~~ ~~800~~ 800-336-2169 LAD000147372

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: STEPHEN BISCHIE	Date: 4-29-21

TICKET 32 TICKET 32

ID 653209
GROSS 81060 lb INBOUND
11:44AM 04/29/2021

OUTBOUND

GROSS 81060 lb RECALLED
TARE 35380 lb
NET 45680 lb

NET 22.84 TON

03:35PM 04/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 700355

WEIGHED BY _____

760393

Bill of Lading (Page 1 of 2)

DOCUMENT # 91497F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM

VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)

Ticket 41264

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224135		AH	
		RAIL CAR # EPIX91497		41039	
		ERG #171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/31/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 4-29-21

Bill of Lading (Continuation Sheet) 2 of 2

760393

DOCUMENT # 91497F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LAD000147222

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:
Carrier 3 Acknowledgement of Receipt	
Per: Derrick Gary	Date: 4-29-21

EPIU224135

TICKET 29

TICKET 29

ID 653372

GROSS 79720 lb INBOUND

11:29AM 04/29/2021

OUTBOUND CO

GROSS 79720 lb RECALLED

TARE 34980 lb

NET 44740 lb

NET 22.37 TON

02:43PM 04/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

760393

RECEIVING TICKET #_____

WEIGHED BY_____

Bill of Lading (Page 1 of 2)

760235

DOCUMENT # 91111A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION from	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FORM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41213	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU222522			
		RAIL CAR # EPIX91111		17039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro ~~Luisa A. Castro~~ LAC	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials or Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49 Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbar Date: 4-15-21

760235

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91111A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA0000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:

Carrier 3 Acknowledgement of Receipt	
Per: STEPHEN RITCHIE	Date: 4-16-21

ID 000522
RECEIVING ID 760235
BOX ID .

GROSS 75640 LB INBOUND

04/16/2021 13:51
ID 000522
RECEIVING ID 760235
BOX ID .

GROSS 75640 LB RECALLED
TARE 32160 LB SWAPPED
NET 43480 LB

TONS 21.74

15:09 04/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

91111A

RECEIVING TICKET #_____

WEIGHED BY_____

760249

Bill of Lading (Page 1 of 2)

DOCUMENT # 91111B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION FROM	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41219	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224167			
		RAIL CAR # EPIX91111			
		EPG#171 HB39			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville / A Deville Date: 4-19-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91111B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-3145

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management ~~Transportation~~ Inc LA0000147222 8004536216

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per:	Date: 4-19-21

TICKET 71

TICKET 71

ID 653375
GROSS 80400 lb INBOUND
10:41AM 04/19/2021

OUTBOUND

GROSS 80400 lb RECALLED
TARE 34980 lb
NET 45420 lb

NET 22.71 TON

03:14PM 04/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760248

WEIGHED BY _____

760248

Bill of Lading (Page 1 of 2)

DOCUMENT # 91111C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM

VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41220

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			nh
		IM CONTAINER # EPIU224214			HD39
		RAIL CAR # EPIX91111			
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column Is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbalewx Date: 4-19-21

Bill of Lading (Continuation Sheet) 2 of 2

760248

DOCUMENT # 91111C

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LAD000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:
Carrier 3 Acknowledgement of Receipt	
Per: Joseph Courville	Date: 4-19-2021

EPIU221214

TICKET 66 TICKET 66

ID 652592
GROSS 81020 lb INBOUND
10:10AM 04/19/2021

OUTBOUND

GROSS 81020 lb RECALLED
TARE 32780 lb
NET 48240 lb

NET 24.12 TON

02:21PM 04/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760218

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

760246

DOCUMENT # 01111D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION From	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FORM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41221	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224112		AH	
		RAIL CAR # EPIX91111		14039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172 204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 4-19-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91111D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper. PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LABOOO147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Edgar Valenzuela	Date: 4/19/21

ID 504
RECEIVING ID 760246
BOX ID .

GROSS 79960 LB INBOUND

04/19/2021 10:10
ID 504
RECEIVING ID 760246
BOX ID .

GROSS 79960 LB RECALLED
TARE 30540 LB SWAPPED
NET 49420 LB

TONS 24.71

11:04 04/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET #_____

WEIGHED BY_____

76024

Bill of Lading (Page 1 of 2)

DOCUMENT # 91111E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-585-2109

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions: 440-228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41222

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223335			
		RAIL CAR # EPIX91111			
		4216171 H035			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville Date: 4-19-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 011116

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management ~~Transportation~~ Inc LAD000147272 800-336-2169

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt

Per:	Date:

Carrier 3 Acknowledgement of Receipt

Per: Randy Sowell	Date: 4-19-21

99IU22337

TICKET 63

TICKET 63

ID 652593
GROSS 79100 lb INBOUND
09:50AM 04/19/2021

OUTBOUND

GROSS 79100 lb RECALLED
TARE 32420 lb
NET 46680 lb

NET 23.34 TON

01:57PM 04/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760347

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91111F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FORM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41223	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU222387			NA
		RAIL CAR # EPIX91111			1039
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbodeaux Date: 4-15-21 4/16/21

4/856

Bill of Lading (Continuation Sheet) 2 of 2

760233

DOCUMENT # 91111F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA D000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:

Carrier 3 Acknowledgement of Receipt	
Per: Derrick Vaz	Date: 4-16-21

EPIU22287

TICKET 30 TICKET 30

ID 653375
GROSS 73200 lb INBOUND
11:29AM 04/16/2021

OUTBOUND

GROSS 73200 lb RECALLED
TARE 33360 lb
NET 39840 lb

NET 19.92 TON

03:37PM 04/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760233

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76022R

DOCUMENT # 91434A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION From	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 91238	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU222128			nh
		RAIL CAR # EPIX91434			17039
		EROH171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rubadeaux Date: 4-15-21

Bill of Lading (Continuation Sheet) 2 of 2

760228

DOCUMENT # 91434A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA 0000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:
Carrier 3 Acknowledgement of Receipt	
Per: Joseph Courville	Date: 4-16-2021

ID 592
RECEIVING ID 760228
BOX ID .

GROSS 81080 LB INBOUND

04/16/2021 10:46
ID 592
RECEIVING ID 760228
BOX ID .

GROSS 81080 LB RECALLED
TARE 32940 LB SWAPPED
NET 48140 LB

TONS 24.07

12:23 04/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

91434A

RECEIVING TICKET #_____

WEIGHED BY_____

W58604 000091434B 760230

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145 440-228-1524
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION From

VRE TANK BOTTOMS EXCLUDED FORM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)

Ticket 41239

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU222029		nh	
		RAIL CAR # EPIX91434		14039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 4-18-21 4/16/21

4/26D

760230

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91434B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation LA D000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Eduardo Villagrana	Date: 4/16/21

TICKET 25 TICKET 25

ID 653204
GROSS 74900 lb INBOUND
11:09AM 04/16/2021

OUTBOUND

GROSS 74900 lb RECALLED
TARE 29880 lb
NET 45020 lb

NET 22.51 TON

03:53PM 04/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET #_____

WEIGHED BY_____

100093 CW11434C 76227

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434C

FROM 440-228-1524

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2108

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 91241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224151			
		RAIL CAR # EPIX91434			
		8GH171 1-1039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(4) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devilla/Quille Date: 4-16-21

4/26/9

760227

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91434C

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-3145

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management ~~Transportation~~ Inc LAD000147272

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Randy	Date: 4-16-21

GPTL120421

TICKET 20 TICKET 20

ID 652593
GROSS 81120 lb INBOUND
10:27AM 04/16/2021

OUTBOUND

GROSS 81120 lb RECALLED
TARE 32820 lb
NET 48300 lb

NET 24.15 TON

01:25PM 04/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760227

WEIGHED BY _____

653156 0000914340 760220

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION From
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 4242

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224234			
		RAIL CAR # EPIX91434			
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cumbody Date: 4-15-21

41223

Bill of Lading (Continuation Sheet) 2 of 2

760220

DOCUMENT # 91434D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Joseph Cobb	Date: 4-15-2021

EPA224354

TICKET 47

ID 653156
GROSS 81140 lb INBOUND
03:29PM 04/15/2021

GROSS 34700 lb

2:08PM 04/16/2021

4/16/21

81140
34700
46440

NET 23.22

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760220

WEIGHED BY _____

W53155 000091434E

7/6/2019

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM
VRE TANK BOTTOMS EXCLUDED FORM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41243

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224211		nh	
		RAIL CAR # EPIX91434		17039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbadeaux Date: 8-4-15-21

41213

760219

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91434E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: STEPHEN BISCHOFF	Date: 4-15-21

TICKET 46

ID 653155
GROSS 81100 lb INBOUND
GROSS 03:18PM 35340 lb 04/15/2021

2:17PM 04/16/2021

45760
net

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

81100
35340
45760
NET 22.88

RECEIVING TICKET # 2200117

WEIGHED BY _____

1653854 0000914345 760217

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2165	Special Instructions:

ADDITIONAL INFORMATION FROM	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41241	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T nk
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223417			
		RAIL CAR # EPIX91434			
		EPGH171 HOBS			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devillo/AQuille Date: 04-15-21

41242

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91434F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-2160

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3: Chemical Waste Management Inc Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:

Carrier 3 Acknowledgement of Receipt	
Per: Edgardo Velazquez	Date: 4/15/21

GPIL 2023/17

TICKET 45

ID 653204
GROSS 77080 lb INBOUND
02:35PM 04/15/2021
GROSS 35640 lb

2:05PM 04/16/2021

1/14/10 Net

77080
35640
41440

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

20.72
NET

RECEIVING TICKET # 760017

WEIGHED BY _____

053501 WWTP0511 760199

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION From
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41250

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224178			nh
		RAIL CAR # EPIX91525			14039
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
~~Per:~~	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: ~~STEPHEN BOSCHE~~ Carrie Dumbolleaux Date: 4-15-21 4-15-21

4/12/20

760199

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91525A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:

Carrier 3 Acknowledgement of Receipt	
Per: STEPHEN RITCHIE	Date: 4-15-21

EPIU224178

TICKET 24 TICKET 24

ID 653501
GROSS 75680 lb INBOUND
11:17AM 04/15/2021

OUTBOUND

GROSS 75680 lb RECALLED
TARE 30840 lb
NET 44840 lb

NET 22.42 TON

06:13PM 04/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760199

WEIGHED BY _____

1652109 0000116205 760211

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41251

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224035			
		RAIL CAR # EPIX91525			
		EPGH 171 H035			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Leding terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Smith Date: 4-15-21

4/22

760211

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91525B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-3168

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company

Carrier 3:Chemical Waste Management Inc Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt

Per:

Date:

Carrier 3 Acknowledgement of Receipt

Per: [signature]

Date: 4.15-24

EPTU2D1/03>

TICKET 42

ID 653209
GROSS 83940 lb INBOUND
02:23PM 04/15/2021

GROSS 35560 lb

GROSS 35580 lb

8:58AM 04/16/2021

5030

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

83940
35560
48400

NET 24.20

RECEIVING TICKET # 760211

WEIGHED BY _____

760193

Bill of Lading (Page 1 of 2)

DOCUMENT # / 91525C

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION FROM
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 41253

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224169			
		RAIL CAR # EPIX91525			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: ~~Joseph Cowell~~ Carrie Dubodeaux Date: ~~4-15-2021~~ 4-15-21

760193

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91525C

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Joseph Cornell	Date: 9-15-2021

ID 592
RECEIVING ID 760193
BOX ID .

GROSS 78720 LB INBOUND

04/15/2021 11:49
ID 592
RECEIVING ID 760193
BOX ID .

GROSS 78720 LB RECALLED
TARE 33040 LB SWAPPED
NET 45680 LB

TONS 22.84

13:50 04/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET #_____

WEIGHED BY_____

760197

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2169	Special Instructions:

ADDITIONAL INFORMATION FROM	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 4254	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224059			
		RAIL CAR # EPIX91525			
		912GH171 HOBS			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devitt Date: 4-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91525D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

337-583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Inc Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt Per:	Date:
Carrier 3 Acknowledgement of Receipt Per: Randy	Date: 4-15-21

652593

ID 592
RECEIVING ID ~~760193~~
BOX ID .

GROSS 81700 LB INBOUND

04/15/2021 10:47
ID 592
RECEIVING ID 760193
BOX ID .

GROSS 81700 LB RECALLED
TARE 33360 LB SWAPPED
NET 48340 LB

TONS 24.17

11:44 04/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760197

WEIGHED BY _____

760192

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
337-583-2168

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Special Instructions:

ADDITIONAL INFORMATION From
VRE TANK BOTTOMS EXCLUDED ~~FORM~~ THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)
Ticket 4255

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU223121			
		RAIL CAR # EPIX91525			
		926#171 4035			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/11/2021	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper' s certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: ~~Deandra~~ Carrie Duboclearse Date: ~~4-15-21~~ 4-15-21

760192

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT # 91525E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company JAL
Carrier 3:Chemical Waste Management Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:

Carrier 3 Acknowledgement of Receipt	
Per:	Date: 4-15-21

ID 375
RECEIVING ID .
BOX ID .

GROSS 81660 LB INBOUND

04/15/2021 14:06
ID 375
RECEIVING ID .
BOX ID .

GROSS 81660 LB RECALLED
TARE 34140 LB SWAPPED
NET 47520 LB

TONS 23.76

15:18 04/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760192

WEIGHED BY

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNK AVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
337-583-2109	Special Instructions:

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) (24)	
Ticket 41256	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	24	T
		PROFILE : 969843LA			
		IM CONTAINER # EPIU224196		nh	
		RAIL CAR # EPIX91525		17039	
		ERG#171			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: NORFOLK SOUTHERN RAILWAY	
Per:	Date: 3/18/21	Per: Luis A. Castro	Date: 3/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Material s Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials	
Per: Carrie Cauley	Date: 4/15/21

4-15-21

4/1239

Bill of Lading (Continuation Sheet) 2 of 2

760196

DOCUMENT # 91525F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145

Carrier 2: BNSF Railway Company
Carrier 3:Chemical Waste Management Transportation

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	TYPE	VOLUME	UOM

Carrier 2 Acknowledgement of Receipt	
Per:	Date:
Carrier 3 Acknowledgement of Receipt	
Per: Edgardo Vazquez	Date: 4/15/21

EPA ID 1196

TICKET 21 TICKET 21

ID 653504
GROSS 79880 lb INBOUND
10:59AM 04/15/2021

OUTBOUND

GROSS	79880 lb	RECALLED
TARE	30780 lb	
NET	49100 lb	
NET	24.55 TON	

06:08PM 04/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 760196

WEIGHED BY _____

Laboratory Reports

ANALYTICAL REPORT

Lab Number:	L2126144
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/02/21

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126144-01	PB-666-14-SS01	SOIL	PHILADELPHIA, PA	05/18/21 09:05	05/18/21
L2126144-02	PB-666-12-SS01	SOIL	PHILADELPHIA, PA	05/18/21 09:55	05/18/21
L2126144-03	PB-666-11-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:05	05/18/21
L2126144-04	PB-666-07-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:19	05/18/21
L2126144-05	PB-666-04-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:35	05/18/21
L2126144-06	PB-666-02-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:50	05/18/21
L2126144-07	PB-666-01-SS01	SOIL	PHILADELPHIA, PA	05/18/21 11:10	05/18/21
L2126144-08	PB-663-11-SS01	SOIL	PHILADELPHIA, PA	05/18/21 11:50	05/18/21
L2126144-09	PB-666-03-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:05	05/18/21
L2126144-10	PB-666-15-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:15	05/18/21
L2126144-11	PB-666-16-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:30	05/18/21
L2126144-12	PB-666-17-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:45	05/18/21
L2126144-13	PB-666-18-SS01	SOIL	PHILADELPHIA, PA	05/18/21 13:20	05/18/21
L2126144-14	PB-666-19-SS01	SOIL	PHILADELPHIA, PA	05/18/21 13:35	05/18/21
L2126144-15	PB-666-20-SS01	SOIL	PHILADELPHIA, PA	05/18/21 13:50	05/18/21
L2126144-16	PB-666-21-SS01	SOIL	PHILADELPHIA, PA	05/18/21 14:00	05/18/21
L2126144-17	PB-666-22-SS01	SOIL	PHILADELPHIA, PA	05/18/21 14:40	05/18/21
L2126144-18	DUP-01	SOIL	PHILADELPHIA, PA	05/18/21 14:05	05/18/21
L2126144-19	FB-210518-1	WATER	PHILADELPHIA, PA	05/18/21 14:45	05/18/21
L2126144-20	FB-210518-2	WATER	PHILADELPHIA, PA	05/18/21 14:50	05/18/21
L2126144-21	TB-210518	WATER	PHILADELPHIA, PA	05/18/21 00:00	05/18/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L2126144-01: The collection date and time on the chain of custody was 18-MAY-21 09:05; however, the collection date/time on the container label was 18-MAY-21 09:15. At the client's request, the collection date/time is reported as 18-MAY-21 09:05.

L2126144-08: The sample identified as "PB-666-11-SS01" on the chain of custody was identified as "PB-663-11-SS01" on the container label. At the client's request, the sample is reported as "PB-663-11-SS01".

L2126144-21: At the client's request, the Trip Blank was analyzed.

Volatile Organics

L2126144-05: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2126144-16: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (38%) and the surrogate recovery for 4-bromofluorobenzene (159%) were outside the acceptance criteria in the low-level analysis. A second low-level vial was analyzed, but yielded no internal standard recoveries. Since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2126144-21: The pH of the sample was greater than two; however, the sample was analyzed within the method required holding time.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Case Narrative (continued)

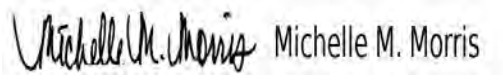
Semivolatile Organics by SIM

L2126144-01D, -02D, -03D, -06D, -08D, -10D, and -11D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

L2126144-03D, -04D, -05D, -07D, -12D, and -17D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2126144-06D and -10D: The sample has elevated detection limits due to the dilution required by the matrix interferences encountered during the concentration of the sample and the analytical dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 06/02/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 17:44
Analyst: MV
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00024	1
Benzene	0.0013		mg/kg	0.00059	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.0023		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00034	1
Ethylbenzene	0.020		mg/kg	0.0012	0.00016	1
p/m-Xylene	0.066		mg/kg	0.0023	0.00066	1
o-Xylene	0.024		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.090		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.0011	J	mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.00048	J	mg/kg	0.0023	0.00023	1
1,2,4-Trimethylbenzene	0.0011	J	mg/kg	0.0023	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 23:36
Analyst: MV
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.24	0.024	1
Benzene	0.45		mg/kg	0.061	0.020	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.031	1
Toluene	2.6		mg/kg	0.12	0.066	1
1,2-Dibromoethane	ND		mg/kg	0.061	0.036	1
Ethylbenzene	2.0		mg/kg	0.12	0.017	1
p/m-Xylene	16.		mg/kg	0.24	0.068	1
o-Xylene	8.1		mg/kg	0.12	0.036	1
Xylenes, Total	24.		mg/kg	0.12	0.036	1
Isopropylbenzene	1.2		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	11.		mg/kg	0.24	0.024	1
1,2,4-Trimethylbenzene	20.		mg/kg	0.24	0.041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03 Date Collected: 05/18/21 10:05
Client ID: PB-666-11-SS01 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 22:46
Analyst: MV
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	3.6		mg/kg	0.058	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.030	1
Toluene	0.095	J	mg/kg	0.12	0.063	1
1,2-Dibromoethane	ND		mg/kg	0.058	0.034	1
Ethylbenzene	0.28		mg/kg	0.12	0.016	1
p/m-Xylene	0.29		mg/kg	0.23	0.065	1
o-Xylene	0.078	J	mg/kg	0.12	0.034	1
Xylenes, Total	0.37	J	mg/kg	0.12	0.034	1
Isopropylbenzene	7.1		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	0.061	J	mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	0.22	J	mg/kg	0.23	0.039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 20:57
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	ND		mg/kg	0.058	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.030	1
Toluene	ND		mg/kg	0.12	0.063	1
1,2-Dibromoethane	ND		mg/kg	0.058	0.034	1
Ethylbenzene	0.041	J	mg/kg	0.12	0.016	1
p/m-Xylene	0.15	J	mg/kg	0.23	0.065	1
o-Xylene	0.62		mg/kg	0.12	0.034	1
Xylenes, Total	0.77	J	mg/kg	0.12	0.034	1
Isopropylbenzene	0.15		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	5.5		mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	6.4		mg/kg	0.23	0.039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 23:11
Analyst: MV
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	0.015	J	mg/kg	0.025	0.0083	1
1,2-Dichloroethane	ND		mg/kg	0.050	0.013	1
Toluene	0.057		mg/kg	0.050	0.027	1
1,2-Dibromoethane	ND		mg/kg	0.025	0.015	1
Ethylbenzene	0.052		mg/kg	0.050	0.0070	1
p/m-Xylene	0.27		mg/kg	0.10	0.028	1
o-Xylene	0.18		mg/kg	0.050	0.014	1
Xylenes, Total	0.45		mg/kg	0.050	0.014	1
Isopropylbenzene	0.024	J	mg/kg	0.050	0.0054	1
1,3,5-Trimethylbenzene	0.61		mg/kg	0.10	0.0096	1
1,2,4-Trimethylbenzene	1.3		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/21/21 23:40
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00025	1
Benzene	0.00023	J	mg/kg	0.00061	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	0.00098	J	mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00061	0.00036	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00069	1
o-Xylene	0.00045	J	mg/kg	0.0012	0.00036	1
Xylenes, Total	0.00045	J	mg/kg	0.0012	0.00036	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.00043	J	mg/kg	0.0024	0.00024	1
1,2,4-Trimethylbenzene	0.00094	J	mg/kg	0.0024	0.00041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/24/21 11:16
Analyst: AJK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	ND		mg/kg	0.00053	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00027	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00053	0.00031	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00059	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 16:45
Analyst: JC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	ND		mg/kg	0.00095	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00028	1
Ethylbenzene	ND		mg/kg	0.00095	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00053	1
o-Xylene	ND		mg/kg	0.00095	0.00028	1
Xylenes, Total	ND		mg/kg	0.00095	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 17:11
Analyst: JC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	0.00063		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	0.0062		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	0.0033		mg/kg	0.0013	0.00018	1
p/m-Xylene	0.019		mg/kg	0.0025	0.00071	1
o-Xylene	0.012		mg/kg	0.0013	0.00037	1
Xylenes, Total	0.031		mg/kg	0.0013	0.00037	1
Isopropylbenzene	0.0011	J	mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.011		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.035		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 17:36
Analyst: JC
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00098	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 18:01
Analyst: JC
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	ND		mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00096	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00096	0.00028	1
Xylenes, Total	ND		mg/kg	0.00096	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 18:26
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00061	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0022	0.00062	1
o-Xylene	ND		mg/kg	0.0011	0.00032	1
Xylenes, Total	ND		mg/kg	0.0011	0.00032	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12
Client ID: PB-666-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 18:51
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0029	0.00082	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	ND		mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 19:16
Analyst: JC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	0.00037	J	mg/kg	0.00077	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00040	1
Toluene	ND		mg/kg	0.0015	0.00084	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00086	1
o-Xylene	ND		mg/kg	0.0015	0.00045	1
Xylenes, Total	ND		mg/kg	0.0015	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 19:41
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00067	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.0013		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00067	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00075	1
o-Xylene	ND		mg/kg	0.0013	0.00039	1
Xylenes, Total	ND		mg/kg	0.0013	0.00039	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15 D2 Date Collected: 05/18/21 13:50
Client ID: PB-666-20-SS01 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/24/21 12:07
Analyst: AJK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.61	0.061	2.5
Benzene	5.8		mg/kg	0.15	0.050	2.5
1,2-Dichloroethane	ND		mg/kg	0.30	0.078	2.5
Toluene	1100	E	mg/kg	0.30	0.16	2.5
1,2-Dibromoethane	ND		mg/kg	0.15	0.089	2.5
Ethylbenzene	1.9		mg/kg	0.30	0.043	2.5
p/m-Xylene	8.1		mg/kg	0.61	0.17	2.5
o-Xylene	4.2		mg/kg	0.30	0.088	2.5
Xylenes, Total	12.		mg/kg	0.30	0.088	2.5
Isopropylbenzene	0.81		mg/kg	0.30	0.033	2.5
1,3,5-Trimethylbenzene	3.5		mg/kg	0.61	0.058	2.5
1,2,4-Trimethylbenzene	6.6		mg/kg	0.61	0.10	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15 D
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 22:13
Analyst: JC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Toluene	1500		mg/kg	12	6.6	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 22:21
Analyst: MV
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0049	0.00049	1
Benzene	ND		mg/kg	0.0012	0.00040	1
1,2-Dichloroethane	ND		mg/kg	0.0024	0.00063	1
Toluene	ND		mg/kg	0.0024	0.0013	1
1,2-Dibromoethane	ND		mg/kg	0.0012	0.00071	1
Ethylbenzene	ND		mg/kg	0.0024	0.00034	1
p/m-Xylene	ND		mg/kg	0.0049	0.0014	1
o-Xylene	ND		mg/kg	0.0024	0.00071	1
Xylenes, Total	ND		mg/kg	0.0024	0.00071	1
Isopropylbenzene	ND		mg/kg	0.0024	0.00026	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0049	0.00047	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0049	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**159**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/21/21 23:15
Analyst: NLK
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.35	0.035	1
Benzene	0.067	J	mg/kg	0.088	0.029	1
1,2-Dichloroethane	ND		mg/kg	0.18	0.045	1
Toluene	0.10	J	mg/kg	0.18	0.096	1
1,2-Dibromoethane	ND		mg/kg	0.088	0.052	1
Ethylbenzene	0.048	J	mg/kg	0.18	0.025	1
p/m-Xylene	0.10	J	mg/kg	0.35	0.098	1
o-Xylene	ND		mg/kg	0.18	0.051	1
Xylenes, Total	0.10	J	mg/kg	0.18	0.051	1
Isopropylbenzene	ND		mg/kg	0.18	0.019	1
1,3,5-Trimethylbenzene	0.044	J	mg/kg	0.35	0.034	1
1,2,4-Trimethylbenzene	0.088	J	mg/kg	0.35	0.059	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/24/21 11:41
Analyst: AJK
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0053	0.00053	1
Benzene	ND		mg/kg	0.0013	0.00044	1
1,2-Dichloroethane	ND		mg/kg	0.0026	0.00068	1
Toluene	ND		mg/kg	0.0026	0.0014	1
1,2-Dibromoethane	ND		mg/kg	0.0013	0.00077	1
Ethylbenzene	0.00056	J	mg/kg	0.0026	0.00037	1
p/m-Xylene	ND		mg/kg	0.0053	0.0015	1
o-Xylene	ND		mg/kg	0.0026	0.00077	1
Xylenes, Total	ND		mg/kg	0.0026	0.00077	1
Isopropylbenzene	0.0039		mg/kg	0.0026	0.00029	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0053	0.00051	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0053	0.00088	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/21/21 07:36
Analyst: MKS
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	0.0030		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00072	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19
Client ID: FB-210518-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/21/21 11:44
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19 Date Collected: 05/18/21 14:45
Client ID: FB-210518-1 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 09:18
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20
Client ID: FB-210518-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/21/21 11:50
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20 Date Collected: 05/18/21 14:50
Client ID: FB-210518-2 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 09:42
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	80		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-21
Client ID: TB-210518
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 00:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/21/21 11:57
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-21
Client ID: TB-210518
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 00:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 10:08
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/21/21 10:42
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 19-21 Batch: WG1501981-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/20/21 16:03
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,16 Batch: WG1502132-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/20/21 16:03
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02-03,05 Batch: WG1502133-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/21/21 07:11
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 18 Batch: WG1502164-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/21/21 16:08
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 16 Batch: WG1502604-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/21/21 16:08
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1502605-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/23/21 15:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07-14 Batch: WG1502761-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/24/21 10:51
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 15 Batch: WG1502764-10					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/23/21 15:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04,15 Batch: WG1502764-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/24/21 10:51
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,17 Batch: WG1503461-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-21 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 19-21 Batch: WG1501981-2								
1,2-Dibromoethane	93		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,16 Batch: WG1502132-3 WG1502132-4								
Methyl tert butyl ether	112		114		66-130	2		30
Benzene	114		112		70-130	2		30
1,2-Dichloroethane	114		114		70-130	0		30
Toluene	114		111		70-130	3		30
1,2-Dibromoethane	105		106		70-130	1		30
Ethylbenzene	114		111		70-130	3		30
p/m-Xylene	104		102		70-130	2		30
o-Xylene	104		101		70-130	3		30
Isopropylbenzene	118		113		70-130	4		30
1,3,5-Trimethylbenzene	113		110		70-130	3		30
1,2,4-Trimethylbenzene	111		108		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		108		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02-03,05 Batch: WG1502133-3 WG1502133-4								
Methyl tert butyl ether	112		114		66-130	2		30
Benzene	114		112		70-130	2		30
1,2-Dichloroethane	114		114		70-130	0		30
Toluene	114		111		70-130	3		30
1,2-Dibromoethane	105		106		70-130	1		30
Ethylbenzene	114		111		70-130	3		30
p/m-Xylene	104		102		70-130	2		30
o-Xylene	104		101		70-130	3		30
Isopropylbenzene	118		113		70-130	4		30
1,3,5-Trimethylbenzene	113		110		70-130	3		30
1,2,4-Trimethylbenzene	111		108		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		108		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 18 Batch: WG1502164-3 WG1502164-4								
Methyl tert butyl ether	110		109		66-130	1		30
Benzene	105		106		70-130	1		30
1,2-Dichloroethane	107		106		70-130	1		30
Toluene	105		106		70-130	1		30
1,2-Dibromoethane	102		102		70-130	0		30
Ethylbenzene	104		105		70-130	1		30
p/m-Xylene	96		97		70-130	1		30
o-Xylene	96		96		70-130	0		30
Isopropylbenzene	106		108		70-130	2		30
1,3,5-Trimethylbenzene	103		105		70-130	2		30
1,2,4-Trimethylbenzene	102		104		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 16 Batch: WG1502604-3 WG1502604-4								
Methyl tert butyl ether	111		111		66-130	0		30
Benzene	108		107		70-130	1		30
1,2-Dichloroethane	109		109		70-130	0		30
Toluene	110		107		70-130	3		30
1,2-Dibromoethane	105		103		70-130	2		30
Ethylbenzene	107		104		70-130	3		30
p/m-Xylene	99		96		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	109		106		70-130	3		30
1,3,5-Trimethylbenzene	107		105		70-130	2		30
1,2,4-Trimethylbenzene	106		103		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1502605-3 WG1502605-4								
Methyl tert butyl ether	111		111		66-130	0		30
Benzene	108		107		70-130	1		30
1,2-Dichloroethane	109		109		70-130	0		30
Toluene	110		107		70-130	3		30
1,2-Dibromoethane	105		103		70-130	2		30
Ethylbenzene	107		104		70-130	3		30
p/m-Xylene	99		96		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	109		106		70-130	3		30
1,3,5-Trimethylbenzene	107		105		70-130	2		30
1,2,4-Trimethylbenzene	106		103		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07-14 Batch: WG1502761-3 WG1502761-4								
Methyl tert butyl ether	117		115		66-130	2		30
Benzene	112		111		70-130	1		30
1,2-Dichloroethane	113		110		70-130	3		30
Toluene	112		111		70-130	1		30
1,2-Dibromoethane	108		106		70-130	2		30
Ethylbenzene	110		109		70-130	1		30
p/m-Xylene	102		101		70-130	1		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	112		112		70-130	0		30
1,3,5-Trimethylbenzene	109		110		70-130	1		30
1,2,4-Trimethylbenzene	108		107		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	106		105		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	93		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04,15 Batch: WG1502764-3 WG1502764-4								
Methyl tert butyl ether	117		115		66-130	2		30
Benzene	112		111		70-130	1		30
1,2-Dichloroethane	113		110		70-130	3		30
Toluene	112		111		70-130	1		30
1,2-Dibromoethane	108		106		70-130	2		30
Ethylbenzene	110		109		70-130	1		30
p/m-Xylene	102		101		70-130	1		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	112		112		70-130	0		30
1,3,5-Trimethylbenzene	109		110		70-130	1		30
1,2,4-Trimethylbenzene	108		107		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	106		105		70-130
4-Bromofluorobenzene	114		115		70-130
Dibromofluoromethane	93		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 15 Batch: WG1502764-8 WG1502764-9								
Methyl tert butyl ether	121		116		66-130	4		30
Benzene	108		113		70-130	5		30
1,2-Dichloroethane	113		111		70-130	2		30
Toluene	106		112		70-130	6		30
1,2-Dibromoethane	112		108		70-130	4		30
Ethylbenzene	104		110		70-130	6		30
p/m-Xylene	96		101		70-130	5		30
o-Xylene	97		102		70-130	5		30
Isopropylbenzene	104		112		70-130	7		30
1,3,5-Trimethylbenzene	103		110		70-130	7		30
1,2,4-Trimethylbenzene	102		107		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		100		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	113		114		70-130
Dibromofluoromethane	93		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,17 Batch: WG1503461-3 WG1503461-4								
Methyl tert butyl ether	121		116		66-130	4		30
Benzene	108		113		70-130	5		30
1,2-Dichloroethane	113		111		70-130	2		30
Toluene	106		112		70-130	6		30
1,2-Dibromoethane	112		108		70-130	4		30
Ethylbenzene	104		110		70-130	6		30
p/m-Xylene	96		101		70-130	5		30
o-Xylene	97		102		70-130	5		30
Isopropylbenzene	104		112		70-130	7		30
1,3,5-Trimethylbenzene	103		110		70-130	7		30
1,2,4-Trimethylbenzene	102		107		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		100		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	113		114		70-130
Dibromofluoromethane	93		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-21 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01 D
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 17:58
Analyst: DV
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.4		mg/kg	0.42	0.075	50
Fluorene	3.1		mg/kg	0.42	0.050	50
Phenanthrene	30.		mg/kg	0.42	0.036	50
Anthracene	7.9		mg/kg	0.42	0.033	50
Pyrene	28.		mg/kg	0.42	0.029	50
Benzo(a)anthracene	19.		mg/kg	0.42	0.040	50
Chrysene	15.		mg/kg	0.42	0.031	50
Benzo(b)fluoranthene	20.		mg/kg	0.42	0.040	50
Benzo(a)pyrene	16.		mg/kg	0.42	0.050	50
Benzo(ghi)perylene	8.1		mg/kg	0.42	0.036	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02 D
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 18:14
Analyst: DV
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	160		mg/kg	4.8	0.87	500
Fluorene	53.		mg/kg	4.8	0.58	500
Phenanthrene	270		mg/kg	4.8	0.41	500
Anthracene	74.		mg/kg	4.8	0.39	500
Pyrene	190		mg/kg	4.8	0.34	500
Benzo(a)anthracene	110		mg/kg	4.8	0.46	500
Chrysene	86.		mg/kg	4.8	0.36	500
Benzo(b)fluoranthene	120		mg/kg	4.8	0.46	500
Benzo(a)pyrene	90.		mg/kg	4.8	0.58	500
Benzo(ghi)perylene	50.		mg/kg	4.8	0.41	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03 D
Client ID: PB-666-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 18:31
Analyst: DV
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.4	J	mg/kg	4.2	0.76	500
Fluorene	18.		mg/kg	4.2	0.50	500
Phenanthrene	72.		mg/kg	4.2	0.36	500
Anthracene	41.		mg/kg	4.2	0.34	500
Pyrene	180		mg/kg	4.2	0.29	500
Benzo(a)anthracene	130		mg/kg	4.2	0.40	500
Chrysene	110		mg/kg	4.2	0.32	500
Benzo(b)fluoranthene	170		mg/kg	4.2	0.40	500
Benzo(a)pyrene	140		mg/kg	4.2	0.50	500
Benzo(ghi)perylene	84.		mg/kg	4.2	0.36	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04 D
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 15:42
Analyst: JJW
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.40		mg/kg	0.048	0.0086	5
Fluorene	ND		mg/kg	0.048	0.0058	5
Phenanthrene	0.54		mg/kg	0.048	0.0041	5
Anthracene	ND		mg/kg	0.048	0.0038	5
Pyrene	0.066		mg/kg	0.048	0.0034	5
Benzo(a)anthracene	0.0098	J	mg/kg	0.048	0.0046	5
Chrysene	0.018	J	mg/kg	0.048	0.0036	5
Benzo(b)fluoranthene	0.0091	J	mg/kg	0.048	0.0046	5
Benzo(a)pyrene	0.0060	J	mg/kg	0.048	0.0058	5
Benzo(ghi)perylene	0.12		mg/kg	0.048	0.0041	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**143**	Q	23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05 D
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 17:04
Analyst: JJW
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.12		mg/kg	0.073	0.013	10
Fluorene	0.020	J	mg/kg	0.073	0.0088	10
Phenanthrene	0.19		mg/kg	0.073	0.0062	10
Anthracene	ND		mg/kg	0.073	0.0058	10
Pyrene	0.17		mg/kg	0.073	0.0051	10
Benzo(a)anthracene	0.17		mg/kg	0.073	0.0069	10
Chrysene	0.12		mg/kg	0.073	0.0055	10
Benzo(b)fluoranthene	0.23		mg/kg	0.073	0.0069	10
Benzo(a)pyrene	0.33		mg/kg	0.073	0.0088	10
Benzo(ghi)perylene	7.2		mg/kg	0.073	0.0062	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	31		30-120
4-Terphenyl-d14	30		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06 D
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 17:20
Analyst: JJW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.30	0.055	20
Fluorene	0.050	J	mg/kg	0.30	0.037	20
Phenanthrene	0.60		mg/kg	0.30	0.026	20
Anthracene	ND		mg/kg	0.30	0.024	20
Pyrene	0.95		mg/kg	0.30	0.021	20
Benzo(a)anthracene	1.0		mg/kg	0.30	0.029	20
Chrysene	0.74		mg/kg	0.30	0.023	20
Benzo(b)fluoranthene	1.4		mg/kg	0.30	0.029	20
Benzo(a)pyrene	1.0		mg/kg	0.30	0.037	20
Benzo(ghi)perylene	2.8		mg/kg	0.30	0.026	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07 D
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 15:58
Analyst: JJW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.025	J	mg/kg	0.038	0.0068	5
Fluorene	0.025	J	mg/kg	0.038	0.0045	5
Phenanthrene	0.29		mg/kg	0.038	0.0032	5
Anthracene	0.086		mg/kg	0.038	0.0030	5
Pyrene	0.48		mg/kg	0.038	0.0026	5
Benzo(a)anthracene	0.36		mg/kg	0.038	0.0036	5
Chrysene	0.25		mg/kg	0.038	0.0028	5
Benzo(b)fluoranthene	0.40		mg/kg	0.038	0.0036	5
Benzo(a)pyrene	0.30		mg/kg	0.038	0.0045	5
Benzo(ghi)perylene	0.13		mg/kg	0.038	0.0032	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**146**	Q	23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08 D
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 18:47
Analyst: DV
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	6.1		mg/kg	1.8	0.32	200
Fluorene	11.		mg/kg	1.8	0.22	200
Phenanthrene	100		mg/kg	1.8	0.15	200
Anthracene	28.		mg/kg	1.8	0.14	200
Pyrene	87.		mg/kg	1.8	0.13	200
Benzo(a)anthracene	57.		mg/kg	1.8	0.17	200
Chrysene	46.		mg/kg	1.8	0.14	200
Benzo(b)fluoranthene	55.		mg/kg	1.8	0.17	200
Benzo(a)pyrene	46.		mg/kg	1.8	0.22	200
Benzo(ghi)perylene	25.		mg/kg	1.8	0.15	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09 D
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:36
Analyst: JJW
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.26		mg/kg	0.025	0.0045	2
Fluorene	0.048		mg/kg	0.025	0.0030	2
Phenanthrene	1.0		mg/kg	0.025	0.0021	2
Anthracene	0.23		mg/kg	0.025	0.0020	2
Pyrene	1.9		mg/kg	0.025	0.0018	2
Benzo(a)anthracene	1.5		mg/kg	0.025	0.0024	2
Chrysene	1.2		mg/kg	0.025	0.0019	2
Benzo(b)fluoranthene	1.8		mg/kg	0.025	0.0024	2
Benzo(a)pyrene	1.4		mg/kg	0.025	0.0030	2
Benzo(ghi)perylene	0.72		mg/kg	0.025	0.0021	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**130**	Q	23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10 D
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:03
Analyst: DV
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.8	J	mg/kg	5.0	0.91	600
Fluorene	ND		mg/kg	5.0	0.61	600
Phenanthrene	1.2	J	mg/kg	5.0	0.43	600
Anthracene	0.81	J	mg/kg	5.0	0.40	600
Pyrene	47.		mg/kg	5.0	0.35	600
Benzo(a)anthracene	15.		mg/kg	5.0	0.48	600
Chrysene	53.		mg/kg	5.0	0.38	600
Benzo(b)fluoranthene	18.		mg/kg	5.0	0.48	600
Benzo(a)pyrene	38.		mg/kg	5.0	0.61	600
Benzo(ghi)perylene	19.		mg/kg	5.0	0.43	600

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11 D
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:20
Analyst: DV
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.8		mg/kg	0.40	0.072	50
Fluorene	1.3		mg/kg	0.40	0.048	50
Phenanthrene	17.		mg/kg	0.40	0.034	50
Anthracene	4.6		mg/kg	0.40	0.032	50
Pyrene	25.		mg/kg	0.40	0.028	50
Benzo(a)anthracene	18.		mg/kg	0.40	0.038	50
Chrysene	14.		mg/kg	0.40	0.030	50
Benzo(b)fluoranthene	20.		mg/kg	0.40	0.038	50
Benzo(a)pyrene	15.		mg/kg	0.40	0.048	50
Benzo(ghi)perylene	8.6		mg/kg	0.40	0.034	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12 D
Client ID: PB-666-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:53
Analyst: JJW
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.021		mg/kg	0.019	0.0035	2
Fluorene	0.022		mg/kg	0.019	0.0023	2
Phenanthrene	0.30		mg/kg	0.019	0.0016	2
Anthracene	0.089		mg/kg	0.019	0.0015	2
Pyrene	0.40		mg/kg	0.019	0.0013	2
Benzo(a)anthracene	0.28		mg/kg	0.019	0.0018	2
Chrysene	0.21		mg/kg	0.019	0.0014	2
Benzo(b)fluoranthene	0.32		mg/kg	0.019	0.0018	2
Benzo(a)pyrene	0.24		mg/kg	0.019	0.0023	2
Benzo(ghi)perylene	0.12		mg/kg	0.019	0.0016	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 13:14
Analyst: JJW
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0022	J	mg/kg	0.0083	0.0015	1
Fluorene	0.0032	J	mg/kg	0.0083	0.0010	1
Phenanthrene	0.031		mg/kg	0.0083	0.00071	1
Anthracene	0.0085		mg/kg	0.0083	0.00067	1
Pyrene	0.046		mg/kg	0.0083	0.00058	1
Benzo(a)anthracene	0.035		mg/kg	0.0083	0.00079	1
Chrysene	0.045		mg/kg	0.0083	0.00062	1
Benzo(b)fluoranthene	0.031		mg/kg	0.0083	0.00079	1
Benzo(a)pyrene	0.029		mg/kg	0.0083	0.0010	1
Benzo(ghi)perylene	0.016		mg/kg	0.0083	0.00071	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**130**	Q	23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 13:31
Analyst: JJW
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0098		mg/kg	0.0093	0.0017	1
Fluorene	0.0020	J	mg/kg	0.0093	0.0011	1
Phenanthrene	0.026		mg/kg	0.0093	0.00079	1
Anthracene	0.0095		mg/kg	0.0093	0.00074	1
Pyrene	0.040		mg/kg	0.0093	0.00065	1
Benzo(a)anthracene	0.036		mg/kg	0.0093	0.00088	1
Chrysene	0.036		mg/kg	0.0093	0.00070	1
Benzo(b)fluoranthene	0.068		mg/kg	0.0093	0.00088	1
Benzo(a)pyrene	0.043		mg/kg	0.0093	0.0011	1
Benzo(ghi)perylene	0.047		mg/kg	0.0093	0.00079	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**140**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 13:47
Analyst: JJW
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.034		mg/kg	0.0093	0.0017	1
Fluorene	ND		mg/kg	0.0093	0.0011	1
Phenanthrene	0.051		mg/kg	0.0093	0.00079	1
Anthracene	0.015		mg/kg	0.0093	0.00074	1
Pyrene	0.027		mg/kg	0.0093	0.00065	1
Benzo(a)anthracene	0.018		mg/kg	0.0093	0.00088	1
Chrysene	0.012		mg/kg	0.0093	0.00070	1
Benzo(b)fluoranthene	0.017		mg/kg	0.0093	0.00088	1
Benzo(a)pyrene	0.013		mg/kg	0.0093	0.0011	1
Benzo(ghi)perylene	ND		mg/kg	0.0093	0.00079	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**123**	Q	23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:04
Analyst: JJW
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0034	J	mg/kg	0.012	0.0022	1
Fluorene	ND		mg/kg	0.012	0.0015	1
Phenanthrene	0.0063	J	mg/kg	0.012	0.0010	1
Anthracene	0.0034	J	mg/kg	0.012	0.00098	1
Pyrene	0.023		mg/kg	0.012	0.00086	1
Benzo(a)anthracene	0.031		mg/kg	0.012	0.0012	1
Chrysene	0.029		mg/kg	0.012	0.00092	1
Benzo(b)fluoranthene	0.061		mg/kg	0.012	0.0012	1
Benzo(a)pyrene	0.037		mg/kg	0.012	0.0015	1
Benzo(ghi)perylene	0.032		mg/kg	0.012	0.0010	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	51		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17 D
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 15:09
Analyst: JJW
Percent Solids: 54%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.060	0.011	5
Fluorene	2.5		mg/kg	0.060	0.0072	5
Phenanthrene	1.6		mg/kg	0.060	0.0051	5
Anthracene	ND		mg/kg	0.060	0.0048	5
Pyrene	1.8		mg/kg	0.060	0.0042	5
Benzo(a)anthracene	0.59		mg/kg	0.060	0.0057	5
Chrysene	0.99		mg/kg	0.060	0.0045	5
Benzo(b)fluoranthene	0.17		mg/kg	0.060	0.0057	5
Benzo(a)pyrene	0.31		mg/kg	0.060	0.0072	5
Benzo(ghi)perylene	0.11		mg/kg	0.060	0.0051	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**121**	Q	23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:20
Analyst: JJW
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.039		mg/kg	0.0086	0.0016	1
Fluorene	0.037		mg/kg	0.0086	0.0010	1
Phenanthrene	0.13		mg/kg	0.0086	0.00073	1
Anthracene	0.057		mg/kg	0.0086	0.00069	1
Pyrene	0.15		mg/kg	0.0086	0.00060	1
Benzo(a)anthracene	0.13		mg/kg	0.0086	0.00082	1
Chrysene	0.089		mg/kg	0.0086	0.00065	1
Benzo(b)fluoranthene	0.15		mg/kg	0.0086	0.00082	1
Benzo(a)pyrene	0.11		mg/kg	0.0086	0.0010	1
Benzo(ghi)perylene	0.054		mg/kg	0.0086	0.00073	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	42		30-120
4-Terphenyl-d14	42		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19
Client ID: FB-210518-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 13:27
Analyst: DV
Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.09	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	81		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20
Client ID: FB-210518-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 14:06
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	70		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 11:50
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19-20 Batch: WG1502995-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	60		10-120
4-Terphenyl-d14	106		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/30/21 17:50
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 05/29/21 11:55

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-12 Batch: WG1505342-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00053
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	0.00063	J	mg/kg	0.0066	0.00063
Chrysene	ND		mg/kg	0.0066	0.00050
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00063
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	101		25-120
Phenol-d6	110		10-120
Nitrobenzene-d5	**127**	Q	23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	85		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 12:25
Analyst: JJW

Extraction Method: EPA 3546
Extraction Date: 05/30/21 10:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13-18 Batch: WG1505502-1					
Naphthalene	ND		mg/kg	0.0065	0.0012
Fluorene	ND		mg/kg	0.0065	0.00078
Phenanthrene	0.0044	J	mg/kg	0.0065	0.00055
Anthracene	0.0012	J	mg/kg	0.0065	0.00052
Pyrene	0.0031	J	mg/kg	0.0065	0.00045
Benzo(a)anthracene	0.0012	J	mg/kg	0.0065	0.00061
Chrysene	0.00068	J	mg/kg	0.0065	0.00048
Benzo(b)fluoranthene	0.00071	J	mg/kg	0.0065	0.00061
Benzo(a)pyrene	ND		mg/kg	0.0065	0.00078
Benzo(ghi)perylene	ND		mg/kg	0.0065	0.00055

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	90		25-120
Phenol-d6	96		10-120
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	65		30-120
2,4,6-Tribromophenol	85		10-136
4-Terphenyl-d14	78		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19-20 Batch: WG1502995-2 WG1502995-3								
Naphthalene	78		62		40-140	23		40
Fluorene	90		79		40-140	13		40
Phenanthrene	93		86		40-140	8		40
Anthracene	95		88		40-140	8		40
Pyrene	97		95		26-127	2		40
Benzo(a)anthracene	95		94		40-140	1		40
Chrysene	95		94		40-140	1		40
Benzo(b)fluoranthene	102		100		40-140	2		40
Benzo(a)pyrene	100		99		40-140	1		40
Benzo(ghi)perylene	95		92		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	62		44		21-120
Phenol-d6	54		40		10-120
Nitrobenzene-d5	81		62		23-120
2-Fluorobiphenyl	77		64		15-120
2,4,6-Tribromophenol	74		67		10-120
4-Terphenyl-d14	96		93		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-12 Batch: WG1505342-2 WG1505342-3								
Naphthalene	62		81		40-140	27		50
Fluorene	68		86		40-140	23		50
Phenanthrene	67		87		40-140	26		50
Anthracene	73		95		40-140	26		50
Pyrene	67		87		35-142	26		50
Benzo(a)anthracene	69		89		40-140	25		50
Chrysene	60		78		40-140	26		50
Benzo(b)fluoranthene	74		93		40-140	23		50
Benzo(a)pyrene	71		92		40-140	26		50
Benzo(ghi)perylene	68		87		40-140	25		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	75		97		25-120
Phenol-d6	80		105		10-120
Nitrobenzene-d5	94		**123**	Q	23-120
2-Fluorobiphenyl	53		69		30-120
2,4,6-Tribromophenol	68		87		10-136
4-Terphenyl-d14	60		78		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13-18 Batch: WG1505502-2 WG1505502-3								
Naphthalene	86		82		40-140	5		50
Fluorene	98		89		40-140	10		50
Phenanthrene	95		87		40-140	9		50
Anthracene	105		95		40-140	10		50
Pyrene	97		88		35-142	10		50
Benzo(a)anthracene	103		90		40-140	13		50
Chrysene	81		74		40-140	9		50
Benzo(b)fluoranthene	103		99		40-140	4		50
Benzo(a)pyrene	103		94		40-140	9		50
Benzo(ghi)perylene	96		89		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	105		101		25-120
Phenol-d6	116		112		10-120
Nitrobenzene-d5	**133**	Q	**130**	Q	23-120
2-Fluorobiphenyl	76		73		30-120
2,4,6-Tribromophenol	101		92		10-136
4-Terphenyl-d14	85		80		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	103		mg/kg	2.42	0.130	1	05/27/21 07:30	05/27/21 15:45	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	6170		mg/kg	5.64	0.302	2	05/27/21 07:30	05/27/21 17:47	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03
Client ID: PB-666-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	253		mg/kg	2.49	0.134	1	05/27/21 07:30	05/27/21 15:40	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	49.7		mg/kg	2.88	0.154	1	05/27/21 07:30	05/27/21 17:10	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4310		mg/kg	4.34	0.232	2	05/27/21 07:30	05/27/21 18:42	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	910		mg/kg	2.18	0.117	1	05/27/21 07:30	05/27/21 17:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	653		mg/kg	2.22	0.119	1	05/27/21 07:30	05/27/21 17:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1010		mg/kg	2.64	0.141	1	05/27/21 07:30	05/27/21 17:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	8660		mg/kg	7.10	0.380	2	05/27/21 07:30	05/27/21 18:47	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	784		mg/kg	2.50	0.134	1	05/27/21 07:30	05/27/21 17:41	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5200		mg/kg	4.75	0.255	2	05/27/21 07:30	05/27/21 19:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12 Date Collected: 05/18/21 12:45

Client ID: PB-666-17-SS01 Date Received: 05/18/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	456		mg/kg	2.85	0.152	1	05/27/21 07:30	05/27/21 18:07	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	375		mg/kg	2.45	0.132	1	05/27/21 07:30	05/27/21 18:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	60.3		mg/kg	2.80	0.150	1	05/27/21 07:30	05/27/21 18:16	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	105		mg/kg	2.70	0.145	1	05/27/21 07:30	05/27/21 18:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16800		mg/kg	18.2	0.978	5	05/27/21 07:30	05/27/21 20:09	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	89.0		mg/kg	3.65	0.196	1	05/27/21 07:30	05/27/21 18:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12100		mg/kg	12.8	0.685	5	05/27/21 07:30	05/27/21 19:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19
Client ID: FB-210518-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 11:02	05/27/21 19:13	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20
Client ID: FB-210518-2
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 11:02	05/27/21 19:18	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-18 Batch: WG1501757-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/27/21 07:30	05/27/21 17:01	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 19-20 Batch: WG1503339-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 11:02	05/27/21 19:07	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1501757-2 SRM Lot Number: D109-540								
Lead, Total	98		-		72-128	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 Batch: WG1503339-2								
Lead, Dissolved	102		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1501757-3 QC Sample: L2126144-01 Client ID: PB-666-14-SS01												
Lead, Total	103	50	156	106		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1503339-3 QC Sample: L2126127-01 Client ID: MS Sample												
Lead, Dissolved	ND	510	545.1	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1501757-4 QC Sample: L2126144-01 Client ID: PB-666-14-SS01						
Lead, Total	103	116	mg/kg	12		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.0		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.0		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03
Client ID: PB-666-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.7		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.7		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.5		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12
Client ID: PB-666-17-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:45
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.4		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.0		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.4		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.7		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	54.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-18 QC Batch ID: WG1501385-1 QC Sample: L2126144-01 Client ID: PB-666-14-SS01						
Solids, Total	79.0	78.0	%	1		20

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-01A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-01B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-01C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-01D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-01F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-02A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-02B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-02C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-02D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-02F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-03A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-03B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-03C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-03D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-03F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-04A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-04B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-04C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-04D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-04F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-05A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126144-05B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-05C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-05D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-05F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-06A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-06B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-06C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-06D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-06F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-07A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-07B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-07C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-07D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-07F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-08A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-08B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-08C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-08D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-08F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-09A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-09B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-09C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-09D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-09F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-10A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-10B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-10C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-10D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-10F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-11A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-11B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-11C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-11D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-11F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-12A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-12B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-12C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-12D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-12F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-13A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-13B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-13C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-13D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-13F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-14A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-14B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-14C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-14D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-14F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-15A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260HLW(14)
L2126144-15B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-15C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-15D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)
L2126144-15E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-15F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-16A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126144-16B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-16C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-16D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)
L2126144-16E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-16F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-17A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260HLW(14)
L2126144-17B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-17C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-17D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)
L2126144-17E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-17F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-18A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260HLW(14)
L2126144-18B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-18C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-18D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-18F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-19C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-19D	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-19E	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-19F	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-19G	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-19H	Plastic 250ml unpreserved	B	6	6	4.2	Y	Absent		-
L2126144-19I	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-19J	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-19X	Plastic 120ml HNO3 preserved Filtrates	B	NA		4.2	Y	Absent		PB-6020S-PPB(180)
L2126144-20A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-20B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-20C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-20D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-20E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-20F	Plastic 250ml unpreserved	B	6	6	4.2	Y	Absent		-
L2126144-20G	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-20H	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-20X	Plastic 120ml HNO3 preserved Filtrates	B	NA		4.2	Y	Absent		PB-6020S-PPB(180)
L2126144-21A	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-21B	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-21C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-21D	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 5/19/21

ALPHA Job #: L2126141

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: williamschmidt@ransomenv.com

Project Information
Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

These samples have been previously analyzed by Alpha ☐

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other EMAIL, ADEX

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	TOTAL METALS	TS	PA-8260 HLW				Sample Specific Comments	Total Bottles
26144 -01	PB-666-14-5501	5/18	905	S	JS	✓	✓	✓	✓					6
-02	PB-666-12-5501		955			✓	✓	✓	✓					6
-03	PB-666-11-5501		1005			✓	✓	✓	✓					6
-04	PB-666-07-5501		1019			✓	✓	✓	✓					6
-05	PB-666-04-5501		1035			✓	✓	✓	✓					6
-06	PB-666-02-5501		1050			✓	✓	✓	✓					6
-07	PB-666-01-5501		1110			✓	✓	✓	✓					6
-08	PB-666-11-5501		1150			✓	✓	✓	✓					6
-09	PB-666-03-5501		1205			✓	✓	✓	✓					6
-10	PB-666-15-5501		1215			✓	✓	✓	✓					6

Container Type: A A P V
Preservative: A A A F

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/21 16:12		5/18/21 16:12
	5/18/21 20:00		5/19/21 8:00
			5/19/21 10:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 3

Date Rec'd in Lab: 5/19/21

ALPHA Job #: L2126144

Client Information
Client: RANSOM CONSULTING
Address: 2127 HAMILTON AVE
Phone: 215-901-4974
Fax:
Email: WILLIAM.SCHMIDT@RANSOMENV.COM

Project Information
Project Name: PHILADELPHIA REFINERY - AST CLOSURE
Project Location: PHILADELPHIA, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: WILLIAM SCHMIDT
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other EMAIL, ADEX

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	TOTAL METALS	TS	PA-8260 HLW	PA-8270SIM-LVI	DISSOLVED METALS	PA-8260	8011	Sample Specific Comments	Total Bottles
26144-11	PB-666-16-5501	5/18	1230	S	TS	✓	✓	✓	✓						6
-12	PB-666-17-5501		1245			✓	✓	✓	✓						6
-13	PB-666-18-5501		1320			✓	✓	✓	✓						6
-14	PB-666-19-5501		1335			✓	✓	✓	✓						6
-15	PB-666-20-5501		1350			✓	✓	✓	✓						6
-16	PB-666-21-5501		1400			✓	✓	✓	✓						6
-17	PB-666-22-5501		1440			✓	✓	✓	✓						6
-18	DUP-01		1405			✓	✓	✓	✓						6
-19	FB-210518-1		1445	GW	TS					✓	✓	✓	✓		8
-20	FB-210518-2	↓	1450	GW	TS					✓	✓	✓	✓		8

Container Type: A A P V
Preservative: A A A F

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/21 16:12		5/19/21 16:12
	5/18/21 1800		5/19/21 1800
	5/18-2130		
	0100		5/19/21 01:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
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FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
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Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 5/19/21

ALPHA Job #: L2126144

Client Information

Client: Ranson Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4574
Fax:
Email: William.Schmidt@Ranson

Project Information

Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other Email, ADEX

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☐ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total # Bottles
26144 -21	TB-210518	5/18					5

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type ✓
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/21 16:12		5/18/21 16:12
	5/18/21 18:0		5/18/21 18:0
	5/18 2100		5/18 2100
	5/19 0100		5/19/21 01:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2126411
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/08/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126411-01	PB-666-23-SS01	SOIL	PHILADELPHIA, PA	05/19/21 07:45	05/19/21
L2126411-02	PB-666-24-SS01	SOIL	PHILADELPHIA, PA	05/19/21 08:10	05/19/21
L2126411-03	PB-666-25-SS01	SOIL	PHILADELPHIA, PA	05/19/21 08:30	05/19/21
L2126411-04	PB-666-06-SS01	SOIL	PHILADELPHIA, PA	05/19/21 08:45	05/19/21
L2126411-05	PB-668-01-SS01	SOIL	PHILADELPHIA, PA	05/19/21 09:05	05/19/21
L2126411-06	PB-668-02-SS01	SOIL	PHILADELPHIA, PA	05/19/21 09:20	05/19/21
L2126411-07	PB-668-03-SS01	SOIL	PHILADELPHIA, PA	05/19/21 09:40	05/19/21
L2126411-08	PB-668-04-SS01	SOIL	PHILADELPHIA, PA	05/19/21 10:02	05/19/21
L2126411-09	PB-668-05-SS01	SOIL	PHILADELPHIA, PA	05/19/21 10:45	05/19/21
L2126411-10	PB-663-01-SS01	SOIL	PHILADELPHIA, PA	05/19/21 11:00	05/19/21
L2126411-11	PB-663-02-SS01	SOIL	PHILADELPHIA, PA	05/19/21 11:10	05/19/21
L2126411-12	PB-663-03-SS01	SOIL	PHILADELPHIA, PA	05/19/21 12:15	05/19/21
L2126411-13	PB-663-04-SS01	SOIL	PHILADELPHIA, PA	05/19/21 12:30	05/19/21
L2126411-14	PB-663-05-SS01	SOIL	PHILADELPHIA, PA	05/19/21 12:50	05/19/21
L2126411-15	PB-663-06-SS01	SOIL	PHILADELPHIA, PA	05/19/21 13:15	05/19/21
L2126411-16	PB-663-07-SS01	SOIL	PHILADELPHIA, PA	05/19/21 13:25	05/19/21
L2126411-17	PB-668-06-SS01	SOIL	PHILADELPHIA, PA	05/19/21 13:45	05/19/21
L2126411-18	PB-668-07-SS01	SOIL	PHILADELPHIA, PA	05/19/21 14:20	05/19/21
L2126411-19	FB-210519-1	WATER	PHILADELPHIA, PA	05/19/21 14:30	05/19/21
L2126411-20	FB-210519-2	WATER	PHILADELPHIA, PA	05/19/21 14:45	05/19/21
L2126411-21	TB-210519	WATER	PHILADELPHIA, PA	05/19/21 15:12	05/19/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative (continued)

Report Submission

June 08, 2021: This final report includes the results of all requested analyses.

June 07, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2126411-21: The analyses performed were specified by the project manager.

Volatile Organics

L2126411-12 and -15: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2126411-17: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (141%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Semivolatile Organics by SIM

L2126411-02D, -07D, -09D, -11D, -14D, -16D, and -18D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2126411-02D, -04D, -07D, -10D, -12D, and -17D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative (continued)

Total Metals

The WG1504100-3 MS recovery, performed on L2126411-01, is outside the acceptance criteria for lead (16%). A post digestion spike was performed and yielded an unacceptable recovery of 67%. The serial dilution recovery was not applicable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 06/08/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 12:51
Analyst: AJK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00025	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	ND		mg/kg	0.0017	0.00051	1
Xylenes, Total	ND		mg/kg	0.0017	0.00051	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02
Client ID: PB-666-24-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 13:17
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.0064		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0032		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	0.025		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.014		mg/kg	0.0024	0.00067	1
o-Xylene	0.013		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.027		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0030		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.019		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.091		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 13:42
Analyst: AJK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	ND		mg/kg	0.00053	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00027	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00053	0.00031	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00060	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 14:07
Analyst: AJK
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00077	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00040	1
Toluene	ND		mg/kg	0.0015	0.00084	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0015	0.00045	1
Xylenes, Total	ND		mg/kg	0.0015	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 23:54
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	ND		mg/kg	0.0017	0.00051	1
Xylenes, Total	ND		mg/kg	0.0017	0.00051	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.00045	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 00:20
Analyst: JC
Percent Solids: 52%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	0.0024	J	mg/kg	0.0030	0.00083	1
o-Xylene	0.0011	J	mg/kg	0.0015	0.00043	1
Xylenes, Total	0.0035	J	mg/kg	0.0015	0.00043	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.0060		mg/kg	0.0030	0.00028	1
1,2,4-Trimethylbenzene	0.012		mg/kg	0.0030	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 00:45
Analyst: JC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0041	0.00041	1
Benzene	ND		mg/kg	0.0010	0.00034	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00060	1
Ethylbenzene	0.00084	J	mg/kg	0.0020	0.00029	1
p/m-Xylene	0.0032	J	mg/kg	0.0041	0.0011	1
o-Xylene	0.0050		mg/kg	0.0020	0.00059	1
Xylenes, Total	0.0082	J	mg/kg	0.0020	0.00059	1
Isopropylbenzene	0.00042	J	mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	0.012		mg/kg	0.0041	0.00039	1
1,2,4-Trimethylbenzene	0.0078		mg/kg	0.0041	0.00068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 01:10
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 01:35
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00045	1
Benzene	ND		mg/kg	0.0011	0.00037	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00057	1
Toluene	ND		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00065	1
Ethylbenzene	ND		mg/kg	0.0022	0.00031	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00065	1
Xylenes, Total	ND		mg/kg	0.0022	0.00065	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 02:01
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00041	1
Benzene	ND		mg/kg	0.0010	0.00034	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	0.0025		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00059	1
Xylenes, Total	ND		mg/kg	0.0020	0.00059	1
Isopropylbenzene	ND		mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 02:26
Analyst: JC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.10		mg/kg	0.056	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.029	1
Toluene	4.4		mg/kg	0.11	0.060	1
1,2-Dibromoethane	ND		mg/kg	0.056	0.033	1
Ethylbenzene	0.038	J	mg/kg	0.11	0.016	1
p/m-Xylene	0.17	J	mg/kg	0.22	0.062	1
o-Xylene	0.098	J	mg/kg	0.11	0.032	1
Xylenes, Total	0.27	J	mg/kg	0.11	0.032	1
Isopropylbenzene	0.022	J	mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.092	J	mg/kg	0.22	0.022	1
1,2,4-Trimethylbenzene	0.17	J	mg/kg	0.22	0.037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 02:51
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.27		mg/kg	0.055	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	2.8		mg/kg	0.11	0.060	1
1,2-Dibromoethane	ND		mg/kg	0.055	0.032	1
Ethylbenzene	0.034	J	mg/kg	0.11	0.016	1
p/m-Xylene	0.10	J	mg/kg	0.22	0.062	1
o-Xylene	0.043	J	mg/kg	0.11	0.032	1
Xylenes, Total	0.14	J	mg/kg	0.11	0.032	1
Isopropylbenzene	0.014	J	mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.039	J	mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	0.097	J	mg/kg	0.22	0.037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 15:44
Analyst: MKS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.0015		mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	0.067		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00072	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 10:13
Analyst: MKS
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	0.00048	J	mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	0.0011	J	mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00025	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	ND		mg/kg	0.0017	0.00051	1
Xylenes, Total	ND		mg/kg	0.0017	0.00051	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 10:38
Analyst: MKS
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 09:48
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.15	0.015	1
Benzene	0.020	J	mg/kg	0.038	0.013	1
1,2-Dichloroethane	ND		mg/kg	0.077	0.020	1
Toluene	1.9		mg/kg	0.077	0.042	1
1,2-Dibromoethane	ND		mg/kg	0.038	0.022	1
Ethylbenzene	0.018	J	mg/kg	0.077	0.011	1
p/m-Xylene	0.065	J	mg/kg	0.15	0.043	1
o-Xylene	0.022	J	mg/kg	0.077	0.022	1
Xylenes, Total	0.087	J	mg/kg	0.077	0.022	1
Isopropylbenzene	ND		mg/kg	0.077	0.0084	1
1,3,5-Trimethylbenzene	0.017	J	mg/kg	0.15	0.015	1
1,2,4-Trimethylbenzene	0.063	J	mg/kg	0.15	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15 Date Collected: 05/19/21 13:15
Client ID: PB-663-06-SS01 Date Received: 05/19/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 16:34
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	0.0060		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	0.30		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	0.00053	J	mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0024	J	mg/kg	0.0032	0.00090	1
o-Xylene	0.0012	J	mg/kg	0.0016	0.00047	1
Xylenes, Total	0.0036	J	mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.00075	J	mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 11:04
Analyst: MKS
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00067	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00067	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00075	1
o-Xylene	ND		mg/kg	0.0013	0.00039	1
Xylenes, Total	ND		mg/kg	0.0013	0.00039	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/27/21 01:59
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.26	0.026	1
Benzene	0.36		mg/kg	0.066	0.022	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.034	1
Toluene	2.7		mg/kg	0.13	0.072	1
1,2-Dibromoethane	ND		mg/kg	0.066	0.039	1
Ethylbenzene	1.3		mg/kg	0.13	0.019	1
p/m-Xylene	7.8		mg/kg	0.26	0.074	1
o-Xylene	5.2		mg/kg	0.13	0.038	1
Xylenes, Total	13.		mg/kg	0.13	0.038	1
Isopropylbenzene	1.5		mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	13.		mg/kg	0.26	0.025	1
1,2,4-Trimethylbenzene	38.		mg/kg	0.26	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	**141**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 11:29
Analyst: MKS
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0048	0.00049	1
Benzene	ND		mg/kg	0.0012	0.00040	1
1,2-Dichloroethane	ND		mg/kg	0.0024	0.00062	1
Toluene	ND		mg/kg	0.0024	0.0013	1
1,2-Dibromoethane	ND		mg/kg	0.0012	0.00071	1
Ethylbenzene	ND		mg/kg	0.0024	0.00034	1
p/m-Xylene	ND		mg/kg	0.0048	0.0014	1
o-Xylene	ND		mg/kg	0.0024	0.00070	1
Xylenes, Total	ND		mg/kg	0.0024	0.00070	1
Isopropylbenzene	ND		mg/kg	0.0024	0.00026	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0048	0.00047	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0048	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:30
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 10:33
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:36
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 10:59
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	122		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-21
Client ID: TB-210519
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 15:12
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:43
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-21 Date Collected: 05/19/21 15:12
Client ID: TB-210519 Date Received: 05/19/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 11:25
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/24/21 16:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 19-21 Batch: WG1502976-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 06:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-04 Batch: WG1503563-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-21 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 18:27
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05-10 Batch: WG1504039-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 08:07
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 15 Batch: WG1504145-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 08:07
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 12-16,18 Batch: WG1504146-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 20:32
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 17 Batch: WG1504369-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 19-21 Batch: WG1502976-2								
1,2-Dibromoethane	90		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-04 Batch: WG1503563-3 WG1503563-4								
Methyl tert butyl ether	123		116		66-130	6		30
Benzene	119		107		70-130	11		30
1,2-Dichloroethane	119		111		70-130	7		30
Toluene	118		106		70-130	11		30
1,2-Dibromoethane	114		109		70-130	4		30
Ethylbenzene	116		104		70-130	11		30
p/m-Xylene	107		97		70-130	10		30
o-Xylene	107		97		70-130	10		30
Isopropylbenzene	118		107		70-130	10		30
1,3,5-Trimethylbenzene	116		105		70-130	10		30
1,2,4-Trimethylbenzene	114		102		70-130	11		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		105		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	114		115		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-21 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05-10 Batch: WG1504039-3 WG1504039-4								
Methyl tert butyl ether	116		120		66-130	3		30
Benzene	116		118		70-130	2		30
1,2-Dichloroethane	110		115		70-130	4		30
Toluene	116		116		70-130	0		30
1,2-Dibromoethane	106		111		70-130	5		30
Ethylbenzene	114		115		70-130	1		30
p/m-Xylene	105		106		70-130	1		30
o-Xylene	103		105		70-130	2		30
Isopropylbenzene	118		118		70-130	0		30
1,3,5-Trimethylbenzene	114		113		70-130	1		30
1,2,4-Trimethylbenzene	112		111		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	115		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 11-12 Batch: WG1504040-3 WG1504040-4								
Methyl tert butyl ether	116		120		66-130	3		30
Benzene	116		118		70-130	2		30
1,2-Dichloroethane	110		115		70-130	4		30
Toluene	116		116		70-130	0		30
1,2-Dibromoethane	106		111		70-130	5		30
Ethylbenzene	114		115		70-130	1		30
p/m-Xylene	105		106		70-130	1		30
o-Xylene	103		105		70-130	2		30
Isopropylbenzene	118		118		70-130	0		30
1,3,5-Trimethylbenzene	114		113		70-130	1		30
1,2,4-Trimethylbenzene	112		111		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	114		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 15 Batch: WG1504145-3 WG1504145-4								
Methyl tert butyl ether	118		119		66-130	1		30
Benzene	116		113		70-130	3		30
1,2-Dichloroethane	113		113		70-130	0		30
Toluene	115		112		70-130	3		30
1,2-Dibromoethane	109		110		70-130	1		30
Ethylbenzene	113		110		70-130	3		30
p/m-Xylene	104		101		70-130	3		30
o-Xylene	103		101		70-130	2		30
Isopropylbenzene	117		111		70-130	5		30
1,3,5-Trimethylbenzene	113		109		70-130	4		30
1,2,4-Trimethylbenzene	111		107		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 12-16,18 Batch: WG1504146-3 WG1504146-4								
Methyl tert butyl ether	118		119		66-130	1		30
Benzene	116		113		70-130	3		30
1,2-Dichloroethane	113		113		70-130	0		30
Toluene	115		112		70-130	3		30
1,2-Dibromoethane	109		110		70-130	1		30
Ethylbenzene	113		110		70-130	3		30
p/m-Xylene	104		101		70-130	3		30
o-Xylene	103		101		70-130	2		30
Isopropylbenzene	117		111		70-130	5		30
1,3,5-Trimethylbenzene	113		109		70-130	4		30
1,2,4-Trimethylbenzene	111		107		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 17 Batch: WG1504369-3 WG1504369-4								
Methyl tert butyl ether	119		119		66-130	0		30
Benzene	118		119		70-130	1		30
1,2-Dichloroethane	115		115		70-130	0		30
Toluene	120		121		70-130	1		30
1,2-Dibromoethane	111		111		70-130	0		30
Ethylbenzene	117		118		70-130	1		30
p/m-Xylene	109		110		70-130	1		30
o-Xylene	108		109		70-130	1		30
Isopropylbenzene	118		120		70-130	2		30
1,3,5-Trimethylbenzene	118		120		70-130	2		30
1,2,4-Trimethylbenzene	117		118		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		100		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	114		114		70-130
Dibromofluoromethane	92		92		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:06
Analyst: DV
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.019		mg/kg	0.0099	0.0018	1
Fluorene	0.0046	J	mg/kg	0.0099	0.0012	1
Phenanthrene	0.024		mg/kg	0.0099	0.00084	1
Anthracene	0.0046	J	mg/kg	0.0099	0.00079	1
Pyrene	0.017		mg/kg	0.0099	0.00069	1
Benzo(a)anthracene	0.017		mg/kg	0.0099	0.00094	1
Chrysene	0.013		mg/kg	0.0099	0.00074	1
Benzo(b)fluoranthene	0.014		mg/kg	0.0099	0.00094	1
Benzo(a)pyrene	0.013		mg/kg	0.0099	0.0012	1
Benzo(ghi)perylene	0.0074	J	mg/kg	0.0099	0.00084	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	48		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02 D
Client ID: PB-666-24-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 16:31
Analyst: RP
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	5.7		mg/kg	0.20	0.035	25
Fluorene	2.9		mg/kg	0.20	0.024	25
Phenanthrene	8.0		mg/kg	0.20	0.017	25
Anthracene	1.5		mg/kg	0.20	0.016	25
Pyrene	4.5		mg/kg	0.20	0.014	25
Benzo(a)anthracene	2.3		mg/kg	0.20	0.019	25
Chrysene	3.3		mg/kg	0.20	0.015	25
Benzo(b)fluoranthene	0.85		mg/kg	0.20	0.019	25
Benzo(a)pyrene	1.6		mg/kg	0.20	0.024	25
Benzo(ghi)perylene	0.61		mg/kg	0.20	0.017	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:22
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.070		mg/kg	0.0076	0.0014	1
Fluorene	0.029		mg/kg	0.0076	0.00091	1
Phenanthrene	0.20		mg/kg	0.0076	0.00064	1
Anthracene	0.056		mg/kg	0.0076	0.00061	1
Pyrene	0.36		mg/kg	0.0076	0.00053	1
Benzo(a)anthracene	0.27		mg/kg	0.0076	0.00072	1
Chrysene	0.24		mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.31		mg/kg	0.0076	0.00072	1
Benzo(a)pyrene	0.26		mg/kg	0.0076	0.00091	1
Benzo(ghi)perylene	0.16		mg/kg	0.0076	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04 D
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 16:47
Analyst: RP
Percent Solids: 56%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.55	J	mg/kg	0.57	0.10	50
Fluorene	1.2		mg/kg	0.57	0.069	50
Phenanthrene	22.		mg/kg	0.57	0.049	50
Anthracene	7.5		mg/kg	0.57	0.046	50
Pyrene	39.		mg/kg	0.57	0.040	50
Benzo(a)anthracene	34.		mg/kg	0.57	0.055	50
Chrysene	27.		mg/kg	0.57	0.043	50
Benzo(b)fluoranthene	47.		mg/kg	0.57	0.055	50
Benzo(a)pyrene	36.		mg/kg	0.57	0.069	50
Benzo(ghi)perylene	29.		mg/kg	0.57	0.049	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:39
Analyst: DV
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.026		mg/kg	0.0095	0.0017	1
Fluorene	0.018		mg/kg	0.0095	0.0011	1
Phenanthrene	0.045		mg/kg	0.0095	0.00081	1
Anthracene	0.0089	J	mg/kg	0.0095	0.00076	1
Pyrene	0.020		mg/kg	0.0095	0.00066	1
Benzo(a)anthracene	0.0028	J	mg/kg	0.0095	0.00090	1
Chrysene	0.0024	J	mg/kg	0.0095	0.00071	1
Benzo(b)fluoranthene	0.0073	J	mg/kg	0.0095	0.00090	1
Benzo(a)pyrene	0.0062	J	mg/kg	0.0095	0.0011	1
Benzo(ghi)perylene	0.0054	J	mg/kg	0.0095	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	56		30-120
4-Terphenyl-d14	37		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:55
Analyst: DV
Percent Solids: 52%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.25		mg/kg	0.012	0.0023	1
Fluorene	0.0022	J	mg/kg	0.012	0.0015	1
Phenanthrene	0.034		mg/kg	0.012	0.0011	1
Anthracene	0.0077	J	mg/kg	0.012	0.0010	1
Pyrene	0.059		mg/kg	0.012	0.00088	1
Benzo(a)anthracene	0.046		mg/kg	0.012	0.0012	1
Chrysene	0.039		mg/kg	0.012	0.00094	1
Benzo(b)fluoranthene	0.055		mg/kg	0.012	0.0012	1
Benzo(a)pyrene	0.040		mg/kg	0.012	0.0015	1
Benzo(ghi)perylene	0.026		mg/kg	0.012	0.0011	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	40		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07 D
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 22:21
Analyst: DV
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.14	J	mg/kg	0.20	0.035	20
Fluorene	0.58		mg/kg	0.20	0.024	20
Phenanthrene	0.86		mg/kg	0.20	0.017	20
Anthracene	0.35		mg/kg	0.20	0.016	20
Pyrene	0.65		mg/kg	0.20	0.014	20
Benzo(a)anthracene	0.18	J	mg/kg	0.20	0.019	20
Chrysene	0.27		mg/kg	0.20	0.015	20
Benzo(b)fluoranthene	0.14	J	mg/kg	0.20	0.019	20
Benzo(a)pyrene	0.13	J	mg/kg	0.20	0.024	20
Benzo(ghi)perylene	0.090	J	mg/kg	0.20	0.017	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 15:12
Analyst: DV
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.012		mg/kg	0.0074	0.0013	1
Fluorene	0.0011	J	mg/kg	0.0074	0.00089	1
Phenanthrene	0.0096		mg/kg	0.0074	0.00063	1
Anthracene	0.0030	J	mg/kg	0.0074	0.00059	1
Pyrene	0.015		mg/kg	0.0074	0.00052	1
Benzo(a)anthracene	0.010		mg/kg	0.0074	0.00071	1
Chrysene	0.010		mg/kg	0.0074	0.00056	1
Benzo(b)fluoranthene	0.017		mg/kg	0.0074	0.00071	1
Benzo(a)pyrene	0.011		mg/kg	0.0074	0.00089	1
Benzo(ghi)perylene	0.013		mg/kg	0.0074	0.00063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	46		30-120
4-Terphenyl-d14	34		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09 D
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 22:37
Analyst: DV
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.053		mg/kg	0.047	0.0085	5
Fluorene	ND		mg/kg	0.047	0.0056	5
Phenanthrene	0.0082	J	mg/kg	0.047	0.0040	5
Anthracene	ND		mg/kg	0.047	0.0038	5
Pyrene	0.0052	J	mg/kg	0.047	0.0033	5
Benzo(a)anthracene	0.0068	J	mg/kg	0.047	0.0045	5
Chrysene	0.0045	J	mg/kg	0.047	0.0035	5
Benzo(b)fluoranthene	0.0052	J	mg/kg	0.047	0.0045	5
Benzo(a)pyrene	ND		mg/kg	0.047	0.0056	5
Benzo(ghi)perylene	ND		mg/kg	0.047	0.0040	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	47		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10 D
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 17:04
Analyst: RP
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.2		mg/kg	0.19	0.034	20
Fluorene	1.3		mg/kg	0.19	0.023	20
Phenanthrene	13.		mg/kg	0.19	0.016	20
Anthracene	3.4		mg/kg	0.19	0.015	20
Pyrene	14.		mg/kg	0.19	0.013	20
Benzo(a)anthracene	9.0		mg/kg	0.19	0.018	20
Chrysene	7.0		mg/kg	0.19	0.014	20
Benzo(b)fluoranthene	10.		mg/kg	0.19	0.018	20
Benzo(a)pyrene	7.8		mg/kg	0.19	0.023	20
Benzo(ghi)perylene	4.8		mg/kg	0.19	0.016	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11 D
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:53
Analyst: DV
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.10		mg/kg	0.020	0.0036	2
Fluorene	0.0096	J	mg/kg	0.020	0.0024	2
Phenanthrene	0.35		mg/kg	0.020	0.0017	2
Anthracene	0.072		mg/kg	0.020	0.0016	2
Pyrene	0.81		mg/kg	0.020	0.0014	2
Benzo(a)anthracene	0.70		mg/kg	0.020	0.0019	2
Chrysene	0.62		mg/kg	0.020	0.0015	2
Benzo(b)fluoranthene	0.98		mg/kg	0.020	0.0019	2
Benzo(a)pyrene	0.67		mg/kg	0.020	0.0024	2
Benzo(ghi)perylene	0.47		mg/kg	0.020	0.0017	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12 D
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 17:20
Analyst: RP
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.92		mg/kg	0.48	0.086	50
Fluorene	3.3		mg/kg	0.48	0.057	50
Phenanthrene	30.		mg/kg	0.48	0.041	50
Anthracene	7.7		mg/kg	0.48	0.038	50
Pyrene	33.		mg/kg	0.48	0.034	50
Benzo(a)anthracene	22.		mg/kg	0.48	0.045	50
Chrysene	18.		mg/kg	0.48	0.036	50
Benzo(b)fluoranthene	23.		mg/kg	0.48	0.045	50
Benzo(a)pyrene	18.		mg/kg	0.48	0.057	50
Benzo(ghi)perylene	10.		mg/kg	0.48	0.041	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 15:29
Analyst: DV
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.23		mg/kg	0.0097	0.0017	1
Fluorene	0.050		mg/kg	0.0097	0.0012	1
Phenanthrene	0.062		mg/kg	0.0097	0.00082	1
Anthracene	0.059		mg/kg	0.0097	0.00077	1
Pyrene	0.034		mg/kg	0.0097	0.00068	1
Benzo(a)anthracene	0.045		mg/kg	0.0097	0.00092	1
Chrysene	0.043		mg/kg	0.0097	0.00072	1
Benzo(b)fluoranthene	0.13		mg/kg	0.0097	0.00092	1
Benzo(a)pyrene	0.10		mg/kg	0.0097	0.0012	1
Benzo(ghi)perylene	0.12		mg/kg	0.0097	0.00082	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	49		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14 D
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:36
Analyst: DV
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.052		mg/kg	0.020	0.0036	2
Fluorene	0.014	J	mg/kg	0.020	0.0024	2
Phenanthrene	0.91		mg/kg	0.020	0.0017	2
Anthracene	0.13		mg/kg	0.020	0.0016	2
Pyrene	0.56		mg/kg	0.020	0.0014	2
Benzo(a)anthracene	0.42		mg/kg	0.020	0.0019	2
Chrysene	0.36		mg/kg	0.020	0.0015	2
Benzo(b)fluoranthene	0.79		mg/kg	0.020	0.0019	2
Benzo(a)pyrene	0.57		mg/kg	0.020	0.0024	2
Benzo(ghi)perylene	0.53		mg/kg	0.020	0.0017	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15 D
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 22:04
Analyst: DV
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.22		mg/kg	0.081	0.015	10
Fluorene	0.17		mg/kg	0.081	0.0097	10
Phenanthrene	3.0		mg/kg	0.081	0.0069	10
Anthracene	0.87		mg/kg	0.081	0.0065	10
Pyrene	6.4		mg/kg	0.081	0.0057	10
Benzo(a)anthracene	5.3		mg/kg	0.081	0.0077	10
Chrysene	4.3		mg/kg	0.081	0.0061	10
Benzo(b)fluoranthene	6.6		mg/kg	0.081	0.0077	10
Benzo(a)pyrene	4.8		mg/kg	0.081	0.0097	10
Benzo(ghi)perylene	3.0		mg/kg	0.081	0.0069	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	39		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16 D
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 20:09
Analyst: DV
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.014	J	mg/kg	0.035	0.0064	5
Fluorene	0.0042	J	mg/kg	0.035	0.0042	5
Phenanthrene	0.49		mg/kg	0.035	0.0030	5
Anthracene	0.15		mg/kg	0.035	0.0028	5
Pyrene	0.37		mg/kg	0.035	0.0025	5
Benzo(a)anthracene	0.19		mg/kg	0.035	0.0034	5
Chrysene	0.19		mg/kg	0.035	0.0026	5
Benzo(b)fluoranthene	0.21		mg/kg	0.035	0.0034	5
Benzo(a)pyrene	0.12		mg/kg	0.035	0.0042	5
Benzo(ghi)perylene	0.17		mg/kg	0.035	0.0030	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17 D
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 18:34
Analyst: RP
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	150		mg/kg	3.9	0.70	400
Fluorene	25.		mg/kg	3.9	0.46	400
Phenanthrene	320		mg/kg	3.9	0.33	400
Anthracene	58.		mg/kg	3.9	0.31	400
Pyrene	190		mg/kg	3.9	0.27	400
Benzo(a)anthracene	120		mg/kg	3.9	0.37	400
Chrysene	90.		mg/kg	3.9	0.29	400
Benzo(b)fluoranthene	120		mg/kg	3.9	0.37	400
Benzo(a)pyrene	76.		mg/kg	3.9	0.46	400
Benzo(ghi)perylene	48.		mg/kg	3.9	0.33	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18 D
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 20:25
Analyst: DV
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.048	0.0087	5
Fluorene	ND		mg/kg	0.048	0.0058	5
Phenanthrene	ND		mg/kg	0.048	0.0041	5
Anthracene	ND		mg/kg	0.048	0.0039	5
Pyrene	ND		mg/kg	0.048	0.0034	5
Benzo(a)anthracene	0.0051	J	mg/kg	0.048	0.0046	5
Chrysene	ND		mg/kg	0.048	0.0036	5
Benzo(b)fluoranthene	ND		mg/kg	0.048	0.0046	5
Benzo(a)pyrene	ND		mg/kg	0.048	0.0058	5
Benzo(ghi)perylene	ND		mg/kg	0.048	0.0041	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	27		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 14:26
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 18:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	78		15-120
4-Terphenyl-d14	80		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 14:45
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 18:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	76		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 11:50
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19-20 Batch: WG1502995-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	60		10-120
4-Terphenyl-d14	106		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 13:49
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-18 Batch: WG1505670-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00053
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0066	0.00063
Chrysene	ND		mg/kg	0.0066	0.00050
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00063
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	64		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19-20 Batch: WG1502995-2 WG1502995-3								
Naphthalene	78		62		40-140	23		40
Fluorene	90		79		40-140	13		40
Phenanthrene	93		86		40-140	8		40
Anthracene	95		88		40-140	8		40
Pyrene	97		95		26-127	2		40
Benzo(a)anthracene	95		94		40-140	1		40
Chrysene	95		94		40-140	1		40
Benzo(b)fluoranthene	102		100		40-140	2		40
Benzo(a)pyrene	100		99		40-140	1		40
Benzo(ghi)perylene	95		92		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	62		44		21-120
Phenol-d6	54		40		10-120
Nitrobenzene-d5	81		62		23-120
2-Fluorobiphenyl	77		64		15-120
2,4,6-Tribromophenol	74		67		10-120
4-Terphenyl-d14	96		93		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-18 Batch: WG1505670-2 WG1505670-3								
Naphthalene	62		85		40-140	31		50
Fluorene	64		87		40-140	30		50
Phenanthrene	62		86		40-140	32		50
Anthracene	66		91		40-140	32		50
Pyrene	64		87		35-142	30		50
Benzo(a)anthracene	68		92		40-140	30		50
Chrysene	62		84		40-140	30		50
Benzo(b)fluoranthene	70		101		40-140	36		50
Benzo(a)pyrene	71		98		40-140	32		50
Benzo(ghi)perylene	68		92		40-140	30		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	78		106		23-120
2-Fluorobiphenyl	61		82		30-120
4-Terphenyl-d14	58		78		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	66.3		mg/kg	2.88	0.154	1	05/28/21 10:06	05/31/21 14:55	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02 Date Collected: 05/19/21 08:10

Client ID: PB-666-24-SS01 Date Received: 05/19/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	385		mg/kg	2.30	0.123	1	05/28/21 10:06	05/31/21 14:04	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	205		mg/kg	2.31	0.124	1	05/28/21 10:06	05/31/21 14:08	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2200		mg/kg	3.49	0.187	1	05/28/21 10:06	05/31/21 14:13	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	26.9		mg/kg	2.84	0.152	1	05/28/21 10:06	05/31/21 14:18	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 52%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1600		mg/kg	3.75	0.201	1	05/28/21 10:06	05/31/21 14:41	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	483		mg/kg	2.80	0.150	1	05/28/21 10:06	05/31/21 14:46	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	192		mg/kg	2.22	0.119	1	05/28/21 10:06	05/31/21 14:50	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	156		mg/kg	2.86	0.153	1	05/28/21 10:06	05/31/21 15:28	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1470		mg/kg	2.84	0.152	1	05/28/21 10:06	05/31/21 15:33	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	7180		mg/kg	15.1	0.808	5	05/28/21 10:06	05/31/21 17:51	EPA 3050B	1,6010D	BV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3380		mg/kg	2.79	0.150	1	05/28/21 10:06	05/31/21 15:43	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	461		mg/kg	2.78	0.149	1	05/28/21 10:06	05/31/21 15:47	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	23.1		mg/kg	3.04	0.163	1	05/28/21 10:06	05/31/21 15:52	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	27.7		mg/kg	2.45	0.131	1	05/28/21 10:06	05/31/21 15:57	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1420		mg/kg	2.05	0.110	1	05/28/21 10:06	05/31/21 16:02	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	195		mg/kg	2.87	0.154	1	05/28/21 10:06	05/31/21 16:06	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.0		mg/kg	2.85	0.153	1	05/28/21 10:06	05/31/21 16:11	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 10:44	06/07/21 14:49	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 10:44	06/07/21 14:54	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 19-20 Batch: WG1503348-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 10:44	06/07/21 13:42	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-18 Batch: WG1504100-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/28/21 10:06	05/31/21 14:32	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 Batch: WG1503348-2								
Lead, Dissolved	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1504100-2 SRM Lot Number: D109-540								
Lead, Total	89		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1503348-3 QC Sample: L2126437-01 Client ID: MS Sample												
Lead, Dissolved	ND	510	538.6	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1504100-3 QC Sample: L2126411-01 Client ID: PB-666-23-SS01												
Lead, Total	66.3	59.2	76.0	**16**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1503348-4 QC Sample: L2126437-01 Client ID: DUP Sample						
Lead, Dissolved	ND	ND	ug/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1504100-4 QC Sample: L2126411-01 Client ID: PB-666-23-SS01						
Lead, Total	66.3	55.1	mg/kg	18		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.9		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02
Client ID: PB-666-24-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 08:10
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.7		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	56.2		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.4		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.4		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.4		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.3		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.3		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.5		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.8		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.5		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.9		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.0		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-01A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-01B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-01C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-01D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-01F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-02A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-02B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-02C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-02D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-02F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-03A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-03B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-03C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-03D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-03F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-04A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-04B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-04C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-04D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-04F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-05A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-05B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-05C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-05D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-05F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-06A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-06B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-06C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-06D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-06F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-07A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-07B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-07C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-07D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-07F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-08A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-08B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-08C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-08D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-08F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-09A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-09B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-09C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-09D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-09F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-10A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-10B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-10C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-10D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-10E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-10F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-11A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-11B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-11C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-11D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-11F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-12A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126411-12B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-12C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-12D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-12E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-12F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-13A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-13B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-13C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-13D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-13E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-13F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-14A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-14B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-14C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-14D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-14E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-14F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-15A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126411-15B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-15C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-15D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-15E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-15F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-16A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-16B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-16C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-16D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-16E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-16F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-17A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-17B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-17C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-17D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-17E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-17F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-18A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-18B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-18C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-18D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-18F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-19A	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-19B	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-19C	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-19D	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)
L2126411-19E	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)
L2126411-19F	Plastic 250ml unpreserved	B	7	7	2.6	Y	Absent		-
L2126411-19G	Amber 250ml unpreserved	B	7	7	2.6	Y	Absent		PA-8270SIM-LVI(7)
L2126411-19H	Amber 250ml unpreserved	B	7	7	2.6	Y	Absent		PA-8270SIM-LVI(7)
L2126411-19W	Plastic 120ml HNO3 preserved Filtrates	B	NA		2.6	Y	Absent		PB-6020S-PPB(180)
L2126411-20A	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126411-20B	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126411-20C	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126411-20D	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126411-20E	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126411-20F	Plastic 250ml unpreserved	A	7	7	2.9	Y	Absent		-
L2126411-20G	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126411-20H	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126411-20W	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.9	Y	Absent		PB-6020S-PPB(180)
L2126411-21A	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-21B	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-21C	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)
L2126411-21D	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of

Date Rec'd in Lab: 5/20/21

ALPHA Job #: L2126411

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransom

Project Information
Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 2001.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other Email, ADEX

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Report only Project Specific Analyte List
Please specify Metals or TAL.
PADEP Leaded/Unleaded Gasoline, DRO 1-6 Fuel Oil
Short List. Lead only.

ANALYSIS
PA-8270 SIM | Metals (Lead) | TS | PA-8270 1Hill

Sample Filtration
☐ Done
☐ Lab to do
Preservation ☐ Lab to do
(Please Specify below)
2

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total # Bottles
26411 -01	PB-666-23-5501	5/19	0745	S	TS		6
-02	PB-666-24-5501		0810				6
-03	PB-666-25-5501		0830				6
-04	PB-666-06-5501		0845				6
-05	PB-668-01-5501		0905				6
-06	PB-668-02-5501		0920				6
-07	PB-668-03-5501		0940				6
-08	PB-668-04-5501		1007				6
-09	PB-668-05-5501		1045				6
-10	~~PB-668-0~~ PB-663-01-5501		1100				6

Container Type: A A P V
Preservative: A A A F

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/19/21 1730		5/19/21 15:12
	5-19-21 2000		5-19-21 23:30
	5/19/2000		5/20/21 02:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of

Date Rec'd in Lab: 5/20/21

ALPHA Job #: L2126411

Client Information

Client: Ransom Consulting
Address: 2177 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@Ransom

Project Information

Project Name: Philadelphia Refinery- AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other EMAIL ADEX

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Report only Project Specific Analyte List

Please specify Metals or TAL.
PADEP Leaded/Unleaded Gasoline, No 1-6 Fuel Oil Short List, Lead only

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	Metals (Lead)	TS	PA-8260 HLW	PA-8270 SIM-LVI	Dissolved Metals	PA-8260	8011	Total Bottle
L2126411-11	PB-663-02-5501	5/19	1110	S	TS	✓	✓	✓	✓					6
-12	PB-663-03-5501		1215	S		✓	✓	✓	✓					6
-13	PB-663-04-5501		1230	S		✓	✓	✓	✓					6
-14	PB-663-05-5501		1250	S		✓	✓	✓	✓					6
-15	PB-663-06-5501		1315	S		✓	✓	✓	✓					6
-16	PB-663-07-5501		0325	S		✓	✓	✓	✓					6
-17	PB-668-06-5501		1345	S		✓	✓	✓	✓					6
-18	PB-668-07-5501		1420	S		✓	✓	✓	✓					6
-19	FB-210519-1		1430	A						✓	✓	✓	✓	8
-20	FB-210519-2		1445	A						✓	✓	✓	✓	8

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Container Type	A	A	P	V
Preservative	A	A	A	F

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/19/21 1230		5/19/21 15:12
	5-19-21 2100		5/19/21 2330
			5/20/21 02:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 5/20/21

ALPHA Job #: L2126411

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransom.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.0C135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☐ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
See Page 1
Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total # Bottles
2411 -21	TB-210519	5/19		A	TS	5

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/14/21 1730		5/19/21 15:12
	5/19/21 2100		5/20/21 02:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

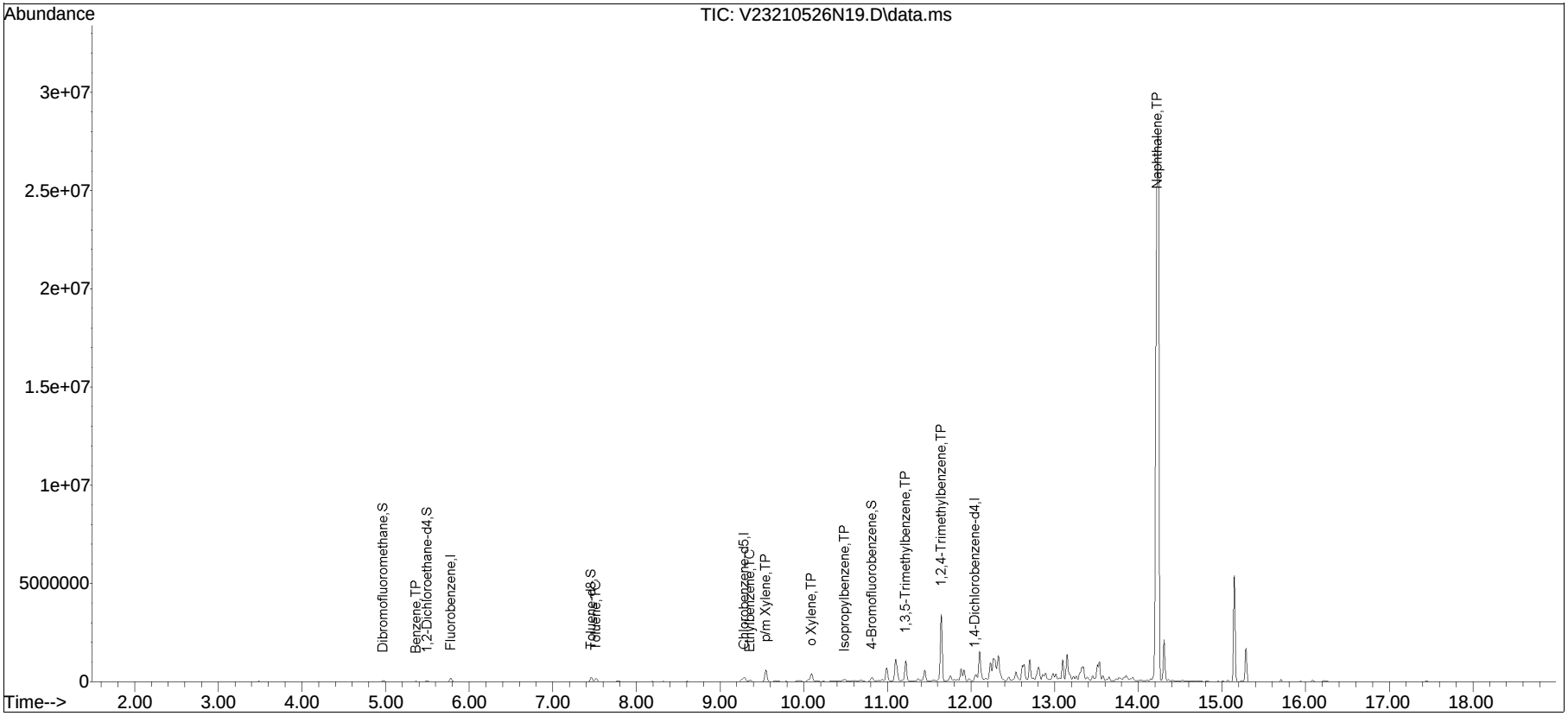
Form No: 01-14 HC (rev. 30-Sept-2013)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA123\2021\210526N\
Data File : V23210526N19.D
Acq On : 27 May 2021 01:59 am
Operator : VOA123:JC
Sample : L2126411-17,31H,3.40,5,0.100,,A
Misc : WG1504369,ICAL17933
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 27 07:27:24 2021
Quant Method : I:\VOLATILES\VOA123\2021\210526N\V123_210512N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu May 13 08:11:37 2021
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list26N\V23210526N03.D•



ANALYTICAL REPORT

Lab Number:	L2126821
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/08/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126821-01	PB-663-08-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:00	05/20/21
L2126821-02	PB-663-09-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:10	05/20/21
L2126821-03	PB-663-10-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:18	05/20/21
L2126821-04	PB-663-12-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:30	05/20/21
L2126821-05	PB-663-13-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:40	05/20/21
L2126821-06	PB-663-14-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:55	05/20/21
L2126821-07	PB-672-01-SS01	SOIL	PHILADELPHIA, PA	05/20/21 09:45	05/20/21
L2126821-08	PB-672-02-SS01	SOIL	PHILADELPHIA, PA	05/20/21 09:55	05/20/21
L2126821-09	PB-672-03-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:05	05/20/21
L2126821-10	PB-672-04-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:10	05/20/21
L2126821-11	PB-672-05-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:20	05/20/21
L2126821-12	PB-672-06-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:40	05/20/21
L2126821-13	PB-672-07-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:45	05/20/21
L2126821-14	PB-672-08-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:00	05/20/21
L2126821-15	PB-672-09-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:15	05/20/21
L2126821-16	PB-672-10-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:25	05/20/21
L2126821-17	PB-672-11-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:40	05/20/21
L2126821-18	PB-672-12-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:55	05/20/21
L2126821-19	PB-672-13-SS01	SOIL	PHILADELPHIA, PA	05/20/21 12:10	05/20/21
L2126821-20	PB-672-14-SS01	SOIL	PHILADELPHIA, PA	05/20/21 12:25	05/20/21
L2126821-21	PB-672-15-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:20	05/20/21
L2126821-22	PB-672-16-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:30	05/20/21
L2126821-23	PB-672-17-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:40	05/20/21
L2126821-24	PB-672-18-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:50	05/20/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126821-25	PB-672-19-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:55	05/20/21
L2126821-26	PB-672-20-SS01	SOIL	PHILADELPHIA, PA	05/20/21 14:10	05/20/21
L2126821-27	PB-672-21-SS01	SOIL	PHILADELPHIA, PA	05/20/21 14:15	05/20/21
L2126821-28	PB-672-22-SS01	SOIL	PHILADELPHIA, PA	05/20/21 14:30	05/20/21
L2126821-29	TB-210520	WATER	PHILADELPHIA, PA	05/20/21 00:00	05/20/21
L2126821-30	FB-210520-1	WATER	PHILADELPHIA, PA	05/20/21 14:40	05/20/21
L2126821-31	FB-210520-2	WATER	PHILADELPHIA, PA	05/20/21 14:45	05/20/21
L2126821-32	FB-210520-3	WATER	PHILADELPHIA, PA	05/20/21 15:00	05/20/21
L2126821-33	DUP-02	SOIL	PHILADELPHIA, PA	05/20/21 08:00	05/20/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2126821-30: Headspace was noted in all sample containers submitted for Volatile Organics. The analysis was cancelled at the client's request.

Volatile Organics

L2126821-06: The surrogate recovery for 4-bromofluorobenzene (137%) was outside the acceptance criteria; however, re-analysis achieved a similar result: 1,4-dichlorobenzene-d4 (40%). The results of both analyses are reported.

L2126821-28: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (46%) and the surrogate recovery for 4-bromofluorobenzene (131%) were outside the acceptance criteria; however, re-analysis achieved similar results: 1,4-dichlorobenzene-d4 (33%) and 4-bromofluorobenzene (137%). The results of both analyses are reported.

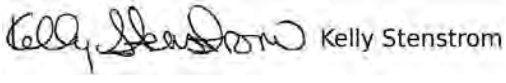
Semivolatile Organics by SIM

L2126821-01D, -02D, -03D, -08D, -09D, -11D, -17D, -20D, and -28D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2126821-06D: The sample has elevated detection limits due to the dilution required by matrix interferences encountered during the concentration of the sample.

L2126821-06D, -09D, -19D, and -26D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 06/08/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 13:37
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00078	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0029	0.00081	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	ND		mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 14:03
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00089	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00096	1
1,2-Dibromoethane	ND		mg/kg	0.00089	0.00052	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00059	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 14:28
Analyst: MKS
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 14:53
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	ND		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00048	1
Toluene	ND		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	ND		mg/kg	0.0018	0.00026	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00054	1
Xylenes, Total	ND		mg/kg	0.0018	0.00054	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05
Client ID: PB-663-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 15:18
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 00:12
Analyst: MKS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0057	0.00057	1
Benzene	0.0015		mg/kg	0.0014	0.00047	1
1,2-Dichloroethane	ND		mg/kg	0.0028	0.00073	1
Toluene	0.0016	J	mg/kg	0.0028	0.0015	1
1,2-Dibromoethane	ND		mg/kg	0.0014	0.00083	1
Ethylbenzene	0.00052	J	mg/kg	0.0028	0.00040	1
p/m-Xylene	ND		mg/kg	0.0057	0.0016	1
o-Xylene	0.0013	J	mg/kg	0.0028	0.00083	1
Xylenes, Total	0.0013	J	mg/kg	0.0028	0.00083	1
Isopropylbenzene	ND		mg/kg	0.0028	0.00031	1
1,3,5-Trimethylbenzene	0.0017	J	mg/kg	0.0057	0.00055	1
1,2,4-Trimethylbenzene	0.0015	J	mg/kg	0.0057	0.00095	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06 R
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 10:05
Analyst: NLK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00044	1
Benzene	0.028		mg/kg	0.0011	0.00037	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00057	1
Toluene	0.071		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00065	1
Ethylbenzene	0.016		mg/kg	0.0022	0.00031	1
p/m-Xylene	0.045		mg/kg	0.0044	0.0012	1
o-Xylene	0.027		mg/kg	0.0022	0.00064	1
Xylenes, Total	0.072		mg/kg	0.0022	0.00064	1
Isopropylbenzene	0.0026		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	0.0043	J	mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	0.014		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 00:37
Analyst: MKS
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08
Client ID: PB-672-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 01:02
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09
Client ID: PB-672-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:05
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 01:27
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00058	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00063	1
1,2-Dibromoethane	ND		mg/kg	0.00058	0.00034	1
Ethylbenzene	ND		mg/kg	0.0012	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00065	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0023	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10
Client ID: PB-672-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 01:53
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	ND		mg/kg	0.00043	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00086	0.00022	1
Toluene	ND		mg/kg	0.00086	0.00047	1
1,2-Dibromoethane	ND		mg/kg	0.00043	0.00025	1
Ethylbenzene	ND		mg/kg	0.00086	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00048	1
o-Xylene	ND		mg/kg	0.00086	0.00025	1
Xylenes, Total	ND		mg/kg	0.00086	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00086	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 02:18
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	ND		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00067	1
o-Xylene	ND		mg/kg	0.0012	0.00035	1
Xylenes, Total	ND		mg/kg	0.0012	0.00035	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 02:43
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	ND		mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00096	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00096	0.00028	1
Xylenes, Total	ND		mg/kg	0.00096	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 03:08
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00074	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00081	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00044	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0030	0.00083	1
o-Xylene	ND		mg/kg	0.0015	0.00043	1
Xylenes, Total	ND		mg/kg	0.0015	0.00043	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 03:33
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00021	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00058	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 03:59
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00028	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00053	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 04:24
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00020	1
Benzene	ND		mg/kg	0.00049	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00097	0.00025	1
Toluene	ND		mg/kg	0.00097	0.00053	1
1,2-Dibromoethane	ND		mg/kg	0.00049	0.00028	1
Ethylbenzene	ND		mg/kg	0.00097	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00097	0.00028	1
Xylenes, Total	ND		mg/kg	0.00097	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00097	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 04:49
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	0.00043		mg/kg	0.00043	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00086	0.00022	1
Toluene	ND		mg/kg	0.00086	0.00047	1
1,2-Dibromoethane	ND		mg/kg	0.00043	0.00025	1
Ethylbenzene	ND		mg/kg	0.00086	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00048	1
o-Xylene	ND		mg/kg	0.00086	0.00025	1
Xylenes, Total	ND		mg/kg	0.00086	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00086	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18
Client ID: PB-672-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 07:38
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00022	1
Benzene	ND		mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00031	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00060	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00021	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	81		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19
Client ID: PB-672-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 09:44
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	0.00032	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00071	1
o-Xylene	0.00049	J	mg/kg	0.0013	0.00037	1
Xylenes, Total	0.00049	J	mg/kg	0.0013	0.00037	1
Isopropylbenzene	0.00026	J	mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.0028		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20
Client ID: PB-672-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 07:59
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00058	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00063	1
1,2-Dibromoethane	ND		mg/kg	0.00058	0.00034	1
Ethylbenzene	ND		mg/kg	0.0012	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00065	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	126		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 08:20
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00049	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00098	0.00025	1
Toluene	ND		mg/kg	0.00098	0.00053	1
1,2-Dibromoethane	ND		mg/kg	0.00049	0.00028	1
Ethylbenzene	ND		mg/kg	0.00098	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00055	1
o-Xylene	ND		mg/kg	0.00098	0.00028	1
Xylenes, Total	ND		mg/kg	0.00098	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00098	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 18:52
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00044	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00088	0.00023	1
Toluene	ND		mg/kg	0.00088	0.00048	1
1,2-Dibromoethane	ND		mg/kg	0.00044	0.00026	1
Ethylbenzene	ND		mg/kg	0.00088	0.00012	1
p/m-Xylene	ND		mg/kg	0.0018	0.00049	1
o-Xylene	ND		mg/kg	0.00088	0.00026	1
Xylenes, Total	ND		mg/kg	0.00088	0.00026	1
Isopropylbenzene	ND		mg/kg	0.00088	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	122		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 08:41
Analyst: NLK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 19:33
Analyst: MKS
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	123		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25
Client ID: PB-672-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 19:54
Analyst: MKS
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	ND		mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00096	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00096	0.00028	1
Xylenes, Total	ND		mg/kg	0.00096	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 20:15
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00061	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0022	0.00063	1
o-Xylene	ND		mg/kg	0.0011	0.00033	1
Xylenes, Total	ND		mg/kg	0.0011	0.00033	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 20:36
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	0.0014		mg/kg	0.00052	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	0.0019		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00052	0.00030	1
Ethylbenzene	0.00029	J	mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0021	0.00058	1
o-Xylene	0.00072	J	mg/kg	0.0010	0.00030	1
Xylenes, Total	0.00072	J	mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 20:57
Analyst: MKS
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00080	1
o-Xylene	0.00050	J	mg/kg	0.0014	0.00041	1
Xylenes, Total	0.00050	J	mg/kg	0.0014	0.00041	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.00066	J	mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	**131**	Q	70-130
Dibromofluoromethane	125		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28 R
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 09:02
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00064	1
o-Xylene	0.00057	J	mg/kg	0.0011	0.00033	1
Xylenes, Total	0.00057	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00086	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.00080	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-29
Client ID: TB-210520
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 00:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:49
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-29
Client ID: TB-210520
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 00:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/28/21 11:04
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	123		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-30
Client ID: FB-210520-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:55
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 18:01
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 11:50
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	77		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32
Client ID: FB-210520-3
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 15:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 18:08
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32 Date Collected: 05/20/21 15:00
Client ID: FB-210520-3 Date Received: 05/20/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 12:15
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 09:23
Analyst: NLK
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/24/21 16:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 29-32 Batch: WG1502976-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 31-32 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 08:07
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1504146-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/27/21 21:41
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06-17 Batch: WG1504906-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	0.00065	J	mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/28/21 10:40
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 29 Batch: WG1505308-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/28/21 16:46
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 22,24-28 Batch: WG1505377-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/30/21 07:17
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,18-21,23,28,33 Batch: WG1506022-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 29-32 Batch: WG1502976-2								
1,2-Dibromoethane	90		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 31-32 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1504146-3 WG1504146-4								
Methyl tert butyl ether	118		119		66-130	1		30
Benzene	116		113		70-130	3		30
1,2-Dichloroethane	113		113		70-130	0		30
Toluene	115		112		70-130	3		30
1,2-Dibromoethane	109		110		70-130	1		30
Ethylbenzene	113		110		70-130	3		30
p/m-Xylene	104		101		70-130	3		30
o-Xylene	103		101		70-130	2		30
Isopropylbenzene	117		111		70-130	5		30
1,3,5-Trimethylbenzene	113		109		70-130	4		30
1,2,4-Trimethylbenzene	111		107		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06-17 Batch: WG1504906-3 WG1504906-4								
Methyl tert butyl ether	103		109		66-130	6		30
Benzene	107		105		70-130	2		30
1,2-Dichloroethane	120		124		70-130	3		30
Toluene	108		104		70-130	4		30
1,2-Dibromoethane	100		103		70-130	3		30
Ethylbenzene	109		105		70-130	4		30
p/m-Xylene	99		96		70-130	3		30
o-Xylene	100		97		70-130	3		30
Isopropylbenzene	114		111		70-130	3		30
1,3,5-Trimethylbenzene	113		110		70-130	3		30
1,2,4-Trimethylbenzene	112		109		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	115		119		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	121		118		70-130
Dibromofluoromethane	96		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 29 Batch: WG1505308-3 WG1505308-4								
Methyl tert butyl ether	95		95		63-130	0		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	98		98		70-130	0		20
Toluene	95		93		70-130	2		20
Ethylbenzene	97		96		70-130	1		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		100		70-130	5		20
Isopropylbenzene	94		95		70-130	1		20
1,3,5-Trimethylbenzene	91		91		64-130	0		20
1,2,4-Trimethylbenzene	93		93		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		91		70-130
Toluene-d8	92		93		70-130
4-Bromofluorobenzene	90		91		70-130
Dibromofluoromethane	103		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 22,24-28 Batch: WG1505377-3 WG1505377-4								
Methyl tert butyl ether	105		110		66-130	5		30
Benzene	111		106		70-130	5		30
1,2-Dichloroethane	115		112		70-130	3		30
Toluene	108		97		70-130	11		30
1,2-Dibromoethane	120		116		70-130	3		30
Ethylbenzene	105		98		70-130	7		30
p/m-Xylene	112		103		70-130	8		30
o-Xylene	110		101		70-130	9		30
Isopropylbenzene	96		92		70-130	4		30
1,3,5-Trimethylbenzene	105		97		70-130	8		30
1,2,4-Trimethylbenzene	106		99		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	102		98		70-130
4-Bromofluorobenzene	91		94		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,18-21,23,28,33 Batch: WG1506022-3 WG1506022-4								
Methyl tert butyl ether	97		97		66-130	0		30
Benzene	93		93		70-130	0		30
1,2-Dichloroethane	91		92		70-130	1		30
Toluene	88		89		70-130	1		30
1,2-Dibromoethane	107		106		70-130	1		30
Ethylbenzene	86		86		70-130	0		30
p/m-Xylene	91		90		70-130	1		30
o-Xylene	90		89		70-130	1		30
Isopropylbenzene	89		90		70-130	1		30
1,3,5-Trimethylbenzene	88		89		70-130	1		30
1,2,4-Trimethylbenzene	89		90		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		89		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	92		92		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01 D
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 15:28
Analyst: DV
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.089		mg/kg	0.036	0.0065	5
Fluorene	0.082		mg/kg	0.036	0.0043	5
Phenanthrene	1.1		mg/kg	0.036	0.0031	5
Anthracene	0.32		mg/kg	0.036	0.0029	5
Pyrene	1.5		mg/kg	0.036	0.0025	5
Benzo(a)anthracene	1.2		mg/kg	0.036	0.0034	5
Chrysene	0.84		mg/kg	0.036	0.0027	5
Benzo(b)fluoranthene	1.3		mg/kg	0.036	0.0034	5
Benzo(a)pyrene	0.96		mg/kg	0.036	0.0043	5
Benzo(ghi)perylene	0.59		mg/kg	0.036	0.0031	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**137**	Q	23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02 D
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 17:59
Analyst: DV
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.014	J	mg/kg	0.072	0.013	10
Fluorene	0.10		mg/kg	0.072	0.0086	10
Phenanthrene	2.4		mg/kg	0.072	0.0061	10
Anthracene	0.85		mg/kg	0.072	0.0057	10
Pyrene	2.4		mg/kg	0.072	0.0050	10
Benzo(a)anthracene	0.34		mg/kg	0.072	0.0068	10
Chrysene	0.32		mg/kg	0.072	0.0054	10
Benzo(b)fluoranthene	0.56		mg/kg	0.072	0.0068	10
Benzo(a)pyrene	0.37		mg/kg	0.072	0.0086	10
Benzo(ghi)perylene	0.38		mg/kg	0.072	0.0061	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	48		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03 D
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 16:01
Analyst: DV
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.098		mg/kg	0.016	0.0028	2
Fluorene	0.27		mg/kg	0.016	0.0019	2
Phenanthrene	1.0		mg/kg	0.016	0.0013	2
Anthracene	0.17		mg/kg	0.016	0.0013	2
Pyrene	0.40		mg/kg	0.016	0.0011	2
Benzo(a)anthracene	0.11		mg/kg	0.016	0.0015	2
Chrysene	0.087		mg/kg	0.016	0.0012	2
Benzo(b)fluoranthene	0.13		mg/kg	0.016	0.0015	2
Benzo(a)pyrene	0.096		mg/kg	0.016	0.0019	2
Benzo(ghi)perylene	0.079		mg/kg	0.016	0.0013	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**148**	Q	23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 12:29
Analyst: JJW
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.014		mg/kg	0.010	0.0018	1
Fluorene	0.037		mg/kg	0.010	0.0012	1
Phenanthrene	0.14		mg/kg	0.010	0.00085	1
Anthracene	0.032		mg/kg	0.010	0.00080	1
Pyrene	0.067		mg/kg	0.010	0.00070	1
Benzo(a)anthracene	0.022		mg/kg	0.010	0.00096	1
Chrysene	0.016		mg/kg	0.010	0.00075	1
Benzo(b)fluoranthene	0.024		mg/kg	0.010	0.00096	1
Benzo(a)pyrene	0.017		mg/kg	0.010	0.0012	1
Benzo(ghi)perylene	0.013		mg/kg	0.010	0.00085	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**133**	Q	23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05
Client ID: PB-663-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 12:46
Analyst: JJW
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0019	J	mg/kg	0.0077	0.0014	1
Fluorene	0.0018	J	mg/kg	0.0077	0.00092	1
Phenanthrene	0.015		mg/kg	0.0077	0.00065	1
Anthracene	0.0078		mg/kg	0.0077	0.00061	1
Pyrene	0.053		mg/kg	0.0077	0.00054	1
Benzo(a)anthracene	0.055		mg/kg	0.0077	0.00073	1
Chrysene	0.038		mg/kg	0.0077	0.00057	1
Benzo(b)fluoranthene	0.040		mg/kg	0.0077	0.00073	1
Benzo(a)pyrene	0.024		mg/kg	0.0077	0.00092	1
Benzo(ghi)perylene	0.0084		mg/kg	0.0077	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06 D
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 16:17
Analyst: DV
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.1		mg/kg	0.48	0.086	50
Fluorene	2.6		mg/kg	0.48	0.057	50
Phenanthrene	19.		mg/kg	0.48	0.040	50
Anthracene	6.2		mg/kg	0.48	0.038	50
Pyrene	24.		mg/kg	0.48	0.033	50
Benzo(a)anthracene	14.		mg/kg	0.48	0.045	50
Chrysene	11.		mg/kg	0.48	0.036	50
Benzo(b)fluoranthene	19.		mg/kg	0.48	0.045	50
Benzo(a)pyrene	18.		mg/kg	0.48	0.057	50
Benzo(ghi)perylene	12.		mg/kg	0.48	0.040	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 13:02
Analyst: JJW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0068	J	mg/kg	0.0075	0.0013	1
Fluorene	0.017		mg/kg	0.0075	0.00090	1
Phenanthrene	0.21		mg/kg	0.0075	0.00064	1
Anthracene	0.054		mg/kg	0.0075	0.00060	1
Pyrene	0.28		mg/kg	0.0075	0.00052	1
Benzo(a)anthracene	0.20		mg/kg	0.0075	0.00071	1
Chrysene	0.15		mg/kg	0.0075	0.00056	1
Benzo(b)fluoranthene	0.25		mg/kg	0.0075	0.00071	1
Benzo(a)pyrene	0.18		mg/kg	0.0075	0.00090	1
Benzo(ghi)perylene	0.12		mg/kg	0.0075	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08 D
Client ID: PB-672-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 18:16
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.035	J	mg/kg	0.076	0.014	10
Fluorene	0.14		mg/kg	0.076	0.0091	10
Phenanthrene	2.9		mg/kg	0.076	0.0065	10
Anthracene	0.53		mg/kg	0.076	0.0061	10
Pyrene	3.7		mg/kg	0.076	0.0053	10
Benzo(a)anthracene	2.0		mg/kg	0.076	0.0072	10
Chrysene	1.8		mg/kg	0.076	0.0057	10
Benzo(b)fluoranthene	2.2		mg/kg	0.076	0.0072	10
Benzo(a)pyrene	1.7		mg/kg	0.076	0.0091	10
Benzo(ghi)perylene	1.0		mg/kg	0.076	0.0065	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	90		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09 D
Client ID: PB-672-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:05
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 18:32
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	2.4		mg/kg	0.20	0.035	25
Fluorene	1.8		mg/kg	0.20	0.023	25
Phenanthrene	15.		mg/kg	0.20	0.016	25
Anthracene	3.8		mg/kg	0.20	0.016	25
Pyrene	14.		mg/kg	0.20	0.014	25
Benzo(a)anthracene	7.9		mg/kg	0.20	0.018	25
Chrysene	6.6		mg/kg	0.20	0.015	25
Benzo(b)fluoranthene	8.1		mg/kg	0.20	0.018	25
Benzo(a)pyrene	6.5		mg/kg	0.20	0.023	25
Benzo(ghi)perylene	3.3		mg/kg	0.20	0.016	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10
Client ID: PB-672-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 13:18
Analyst: JJW
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.011		mg/kg	0.0078	0.0014	1
Fluorene	0.0035	J	mg/kg	0.0078	0.00093	1
Phenanthrene	0.078		mg/kg	0.0078	0.00066	1
Anthracene	0.017		mg/kg	0.0078	0.00062	1
Pyrene	0.12		mg/kg	0.0078	0.00054	1
Benzo(a)anthracene	0.094		mg/kg	0.0078	0.00074	1
Chrysene	0.068		mg/kg	0.0078	0.00058	1
Benzo(b)fluoranthene	0.10		mg/kg	0.0078	0.00074	1
Benzo(a)pyrene	0.083		mg/kg	0.0078	0.00093	1
Benzo(ghi)perylene	0.042		mg/kg	0.0078	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**122**	Q	23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11 D
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 18:49
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.038	0.0068	5
Fluorene	0.0089	J	mg/kg	0.038	0.0045	5
Phenanthrene	0.099		mg/kg	0.038	0.0032	5
Anthracene	0.071		mg/kg	0.038	0.0030	5
Pyrene	1.1		mg/kg	0.038	0.0026	5
Benzo(a)anthracene	0.80		mg/kg	0.038	0.0036	5
Chrysene	0.64		mg/kg	0.038	0.0028	5
Benzo(b)fluoranthene	0.92		mg/kg	0.038	0.0036	5
Benzo(a)pyrene	0.78		mg/kg	0.038	0.0045	5
Benzo(ghi)perylene	0.45		mg/kg	0.038	0.0032	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 13:51
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.0076	0.0014	1
Fluorene	0.0010	J	mg/kg	0.0076	0.00091	1
Phenanthrene	0.0045	J	mg/kg	0.0076	0.00064	1
Anthracene	0.00098	J	mg/kg	0.0076	0.00060	1
Pyrene	0.0025	J	mg/kg	0.0076	0.00053	1
Benzo(a)anthracene	0.0013	J	mg/kg	0.0076	0.00072	1
Chrysene	0.00087	J	mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.0016	J	mg/kg	0.0076	0.00072	1
Benzo(a)pyrene	0.0011	J	mg/kg	0.0076	0.00091	1
Benzo(ghi)perylene	0.0017	J	mg/kg	0.0076	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 14:07
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0037	J	mg/kg	0.0077	0.0014	1
Fluorene	0.0012	J	mg/kg	0.0077	0.00092	1
Phenanthrene	0.058		mg/kg	0.0077	0.00065	1
Anthracene	0.014		mg/kg	0.0077	0.00062	1
Pyrene	0.22		mg/kg	0.0077	0.00054	1
Benzo(a)anthracene	0.16		mg/kg	0.0077	0.00073	1
Chrysene	0.13		mg/kg	0.0077	0.00058	1
Benzo(b)fluoranthene	0.21		mg/kg	0.0077	0.00073	1
Benzo(a)pyrene	0.15		mg/kg	0.0077	0.00092	1
Benzo(ghi)perylene	0.10		mg/kg	0.0077	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**136**	Q	23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14 D
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:05
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.020	J	mg/kg	0.039	0.0071	5
Fluorene	0.19		mg/kg	0.039	0.0047	5
Phenanthrene	2.6		mg/kg	0.039	0.0034	5
Anthracene	0.68		mg/kg	0.039	0.0032	5
Pyrene	2.7		mg/kg	0.039	0.0028	5
Benzo(a)anthracene	1.4		mg/kg	0.039	0.0038	5
Chrysene	1.2		mg/kg	0.039	0.0030	5
Benzo(b)fluoranthene	1.2		mg/kg	0.039	0.0038	5
Benzo(a)pyrene	1.1		mg/kg	0.039	0.0047	5
Benzo(ghi)perylene	0.58		mg/kg	0.039	0.0034	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 14:40
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0023	J	mg/kg	0.0078	0.0014	1
Fluorene	ND		mg/kg	0.0078	0.00094	1
Phenanthrene	0.0018	J	mg/kg	0.0078	0.00066	1
Anthracene	0.0021	J	mg/kg	0.0078	0.00062	1
Pyrene	0.012		mg/kg	0.0078	0.00055	1
Benzo(a)anthracene	0.013		mg/kg	0.0078	0.00074	1
Chrysene	0.012		mg/kg	0.0078	0.00059	1
Benzo(b)fluoranthene	0.032		mg/kg	0.0078	0.00074	1
Benzo(a)pyrene	0.023		mg/kg	0.0078	0.00094	1
Benzo(ghi)perylene	0.023		mg/kg	0.0078	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**145**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 14:56
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.0076	0.0014	1
Fluorene	ND		mg/kg	0.0076	0.00092	1
Phenanthrene	0.00084	J	mg/kg	0.0076	0.00065	1
Anthracene	ND		mg/kg	0.0076	0.00061	1
Pyrene	0.0011	J	mg/kg	0.0076	0.00054	1
Benzo(a)anthracene	0.0015	J	mg/kg	0.0076	0.00073	1
Chrysene	0.00096	J	mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.0032	J	mg/kg	0.0076	0.00073	1
Benzo(a)pyrene	0.0022	J	mg/kg	0.0076	0.00092	1
Benzo(ghi)perylene	0.0046	J	mg/kg	0.0076	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17 D
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:22
Analyst: DV
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.016	0.0029	2
Fluorene	ND		mg/kg	0.016	0.0020	2
Phenanthrene	0.0039	J	mg/kg	0.016	0.0014	2
Anthracene	ND		mg/kg	0.016	0.0013	2
Pyrene	0.0076	J	mg/kg	0.016	0.0011	2
Benzo(a)anthracene	0.0061	J	mg/kg	0.016	0.0016	2
Chrysene	0.0048	J	mg/kg	0.016	0.0012	2
Benzo(b)fluoranthene	0.0069	J	mg/kg	0.016	0.0016	2
Benzo(a)pyrene	0.0054	J	mg/kg	0.016	0.0020	2
Benzo(ghi)perylene	0.0031	J	mg/kg	0.016	0.0014	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18
Client ID: PB-672-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 17:22
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.044		mg/kg	0.0076	0.0014	1
Fluorene	0.059		mg/kg	0.0076	0.00092	1
Phenanthrene	0.34		mg/kg	0.0076	0.00065	1
Anthracene	0.080		mg/kg	0.0076	0.00061	1
Pyrene	0.33		mg/kg	0.0076	0.00053	1
Benzo(a)anthracene	0.24		mg/kg	0.0076	0.00072	1
Chrysene	0.18		mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.28		mg/kg	0.0076	0.00072	1
Benzo(a)pyrene	0.22		mg/kg	0.0076	0.00092	1
Benzo(ghi)perylene	0.11		mg/kg	0.0076	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**132**	Q	23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19 D
Client ID: PB-672-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:38
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	8.1		mg/kg	0.15	0.028	20
Fluorene	0.73		mg/kg	0.15	0.018	20
Phenanthrene	0.58		mg/kg	0.15	0.013	20
Anthracene	0.14	J	mg/kg	0.15	0.012	20
Pyrene	0.62		mg/kg	0.15	0.011	20
Benzo(a)anthracene	0.47		mg/kg	0.15	0.015	20
Chrysene	0.40		mg/kg	0.15	0.012	20
Benzo(b)fluoranthene	0.58		mg/kg	0.15	0.015	20
Benzo(a)pyrene	0.48		mg/kg	0.15	0.018	20
Benzo(ghi)perylene	0.27		mg/kg	0.15	0.013	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20 D
Client ID: PB-672-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 17:55
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.028		mg/kg	0.015	0.0028	2
Fluorene	0.039		mg/kg	0.015	0.0018	2
Phenanthrene	0.22		mg/kg	0.015	0.0013	2
Anthracene	0.073		mg/kg	0.015	0.0012	2
Pyrene	0.30		mg/kg	0.015	0.0011	2
Benzo(a)anthracene	0.24		mg/kg	0.015	0.0015	2
Chrysene	0.16		mg/kg	0.015	0.0012	2
Benzo(b)fluoranthene	0.26		mg/kg	0.015	0.0015	2
Benzo(a)pyrene	0.24		mg/kg	0.015	0.0018	2
Benzo(ghi)perylene	0.12		mg/kg	0.015	0.0013	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:55
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0050	J	mg/kg	0.0079	0.0014	1
Fluorene	0.0020	J	mg/kg	0.0079	0.00095	1
Phenanthrene	0.026		mg/kg	0.0079	0.00067	1
Anthracene	0.0076	J	mg/kg	0.0079	0.00063	1
Pyrene	0.048		mg/kg	0.0079	0.00055	1
Benzo(a)anthracene	0.036		mg/kg	0.0079	0.00075	1
Chrysene	0.032		mg/kg	0.0079	0.00059	1
Benzo(b)fluoranthene	0.042		mg/kg	0.0079	0.00075	1
Benzo(a)pyrene	0.030		mg/kg	0.0079	0.00095	1
Benzo(ghi)perylene	0.015		mg/kg	0.0079	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 19:28
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0019	J	mg/kg	0.0078	0.0014	1
Fluorene	ND		mg/kg	0.0078	0.00093	1
Phenanthrene	0.0035	J	mg/kg	0.0078	0.00066	1
Anthracene	0.00082	J	mg/kg	0.0078	0.00062	1
Pyrene	0.0055	J	mg/kg	0.0078	0.00054	1
Benzo(a)anthracene	0.0045	J	mg/kg	0.0078	0.00074	1
Chrysene	0.0036	J	mg/kg	0.0078	0.00058	1
Benzo(b)fluoranthene	0.0043	J	mg/kg	0.0078	0.00074	1
Benzo(a)pyrene	0.0029	J	mg/kg	0.0078	0.00093	1
Benzo(ghi)perylene	0.0020	J	mg/kg	0.0078	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	98		30-120
4-Terphenyl-d14	104		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 19:45
Analyst: DV
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.011		mg/kg	0.0081	0.0015	1
Fluorene	0.011		mg/kg	0.0081	0.00097	1
Phenanthrene	0.12		mg/kg	0.0081	0.00069	1
Anthracene	0.028		mg/kg	0.0081	0.00065	1
Pyrene	0.18		mg/kg	0.0081	0.00057	1
Benzo(a)anthracene	0.11		mg/kg	0.0081	0.00077	1
Chrysene	0.088		mg/kg	0.0081	0.00061	1
Benzo(b)fluoranthene	0.11		mg/kg	0.0081	0.00077	1
Benzo(a)pyrene	0.086		mg/kg	0.0081	0.00097	1
Benzo(ghi)perylene	0.054		mg/kg	0.0081	0.00069	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 20:01
Analyst: DV
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.050		mg/kg	0.0083	0.0015	1
Fluorene	0.0039	J	mg/kg	0.0083	0.0010	1
Phenanthrene	0.041		mg/kg	0.0083	0.00070	1
Anthracene	0.013		mg/kg	0.0083	0.00066	1
Pyrene	0.086		mg/kg	0.0083	0.00058	1
Benzo(a)anthracene	0.069		mg/kg	0.0083	0.00079	1
Chrysene	0.057		mg/kg	0.0083	0.00062	1
Benzo(b)fluoranthene	0.068		mg/kg	0.0083	0.00079	1
Benzo(a)pyrene	0.056		mg/kg	0.0083	0.0010	1
Benzo(ghi)perylene	0.036		mg/kg	0.0083	0.00070	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25
Client ID: PB-672-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 20:18
Analyst: DV
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0017	J	mg/kg	0.0080	0.0014	1
Fluorene	ND		mg/kg	0.0080	0.00096	1
Phenanthrene	0.0049	J	mg/kg	0.0080	0.00068	1
Anthracene	0.0010	J	mg/kg	0.0080	0.00064	1
Pyrene	0.010		mg/kg	0.0080	0.00056	1
Benzo(a)anthracene	0.0069	J	mg/kg	0.0080	0.00076	1
Chrysene	0.0048	J	mg/kg	0.0080	0.00060	1
Benzo(b)fluoranthene	0.0068	J	mg/kg	0.0080	0.00076	1
Benzo(a)pyrene	0.0053	J	mg/kg	0.0080	0.00096	1
Benzo(ghi)perylene	0.0038	J	mg/kg	0.0080	0.00068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	91		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26 D
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/05/21 15:42
Analyst: JJW
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.15	J	mg/kg	0.16	0.029	20
Fluorene	0.66		mg/kg	0.16	0.019	20
Phenanthrene	6.7		mg/kg	0.16	0.014	20
Anthracene	2.5		mg/kg	0.16	0.013	20
Pyrene	8.8		mg/kg	0.16	0.011	20
Benzo(a)anthracene	7.0		mg/kg	0.16	0.015	20
Chrysene	5.1		mg/kg	0.16	0.012	20
Benzo(b)fluoranthene	6.0		mg/kg	0.16	0.015	20
Benzo(a)pyrene	4.6		mg/kg	0.16	0.019	20
Benzo(ghi)perylene	1.9		mg/kg	0.16	0.014	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 20:11
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0069	J	mg/kg	0.0077	0.0014	1
Fluorene	0.0042	J	mg/kg	0.0077	0.00092	1
Phenanthrene	0.020		mg/kg	0.0077	0.00066	1
Anthracene	0.0044	J	mg/kg	0.0077	0.00062	1
Pyrene	0.030		mg/kg	0.0077	0.00054	1
Benzo(a)anthracene	0.020		mg/kg	0.0077	0.00073	1
Chrysene	0.019		mg/kg	0.0077	0.00058	1
Benzo(b)fluoranthene	0.024		mg/kg	0.0077	0.00073	1
Benzo(a)pyrene	0.022		mg/kg	0.0077	0.00092	1
Benzo(ghi)perylene	0.017		mg/kg	0.0077	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28 D
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 21:07
Analyst: DV
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.17		mg/kg	0.040	0.0073	5
Fluorene	0.050		mg/kg	0.040	0.0048	5
Phenanthrene	0.87		mg/kg	0.040	0.0034	5
Anthracene	0.23		mg/kg	0.040	0.0032	5
Pyrene	2.0		mg/kg	0.040	0.0028	5
Benzo(a)anthracene	1.5		mg/kg	0.040	0.0038	5
Chrysene	1.2		mg/kg	0.040	0.0030	5
Benzo(b)fluoranthene	1.5		mg/kg	0.040	0.0038	5
Benzo(a)pyrene	1.3		mg/kg	0.040	0.0048	5
Benzo(ghi)perylene	1.0		mg/kg	0.040	0.0034	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-30
Client ID: FB-210520-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:50
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	85		15-120
4-Terphenyl-d14	95		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 22:09
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 20:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	77		15-120
4-Terphenyl-d14	86		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32
Client ID: FB-210520-3
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 15:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/28/21 17:58
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/27/21 18:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	80		15-120
4-Terphenyl-d14	88		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 20:28
Analyst: DV
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0055	J	mg/kg	0.0088	0.0016	1
Fluorene	0.0066	J	mg/kg	0.0088	0.0010	1
Phenanthrene	0.15		mg/kg	0.0088	0.00075	1
Anthracene	0.034		mg/kg	0.0088	0.00070	1
Pyrene	0.22		mg/kg	0.0088	0.00062	1
Benzo(a)anthracene	0.15		mg/kg	0.0088	0.00084	1
Chrysene	0.11		mg/kg	0.0088	0.00066	1
Benzo(b)fluoranthene	0.14		mg/kg	0.0088	0.00084	1
Benzo(a)pyrene	0.11		mg/kg	0.0088	0.0010	1
Benzo(ghi)perylene	0.062		mg/kg	0.0088	0.00075	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:12
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 30-32 Batch: WG1504177-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	0.02	J	ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		21-120
Phenol-d6	62		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	93		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	105		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 10:56
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-20 Batch: WG1506297-1					
Naphthalene	ND		mg/kg	0.0065	0.0012
Fluorene	ND		mg/kg	0.0065	0.00078
Phenanthrene	ND		mg/kg	0.0065	0.00056
Anthracene	ND		mg/kg	0.0065	0.00052
Pyrene	ND		mg/kg	0.0065	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0065	0.00062
Chrysene	ND		mg/kg	0.0065	0.00049
Benzo(b)fluoranthene	ND		mg/kg	0.0065	0.00062
Benzo(a)pyrene	ND		mg/kg	0.0065	0.00078
Benzo(ghi)perylene	ND		mg/kg	0.0065	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	85		25-120
Phenol-d6	91		10-120
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	81		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 18:56
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 21-28,33 Batch: WG1506298-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00052
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0066	0.00062
Chrysene	ND		mg/kg	0.0066	0.00049
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00062
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	95		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	92		30-120
2,4,6-Tribromophenol	109		10-136
4-Terphenyl-d14	102		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 30-32 Batch: WG1504177-2 WG1504177-3								
Naphthalene	77		77		40-140	0		40
Fluorene	82		81		40-140	1		40
Phenanthrene	84		83		40-140	1		40
Anthracene	85		85		40-140	0		40
Pyrene	84		81		26-127	4		40
Benzo(a)anthracene	86		82		40-140	5		40
Chrysene	84		84		40-140	0		40
Benzo(b)fluoranthene	90		85		40-140	6		40
Benzo(a)pyrene	90		87		40-140	3		40
Benzo(ghi)perylene	87		85		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		75		21-120
Phenol-d6	60		60		10-120
Nitrobenzene-d5	93		94		23-120
2-Fluorobiphenyl	80		80		15-120
2,4,6-Tribromophenol	82		83		10-120
4-Terphenyl-d14	89		87		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-20 Batch: WG1506297-2 WG1506297-3								
Naphthalene	81		88		40-140	8		50
Fluorene	82		89		40-140	8		50
Phenanthrene	82		89		40-140	8		50
Anthracene	88		94		40-140	7		50
Pyrene	84		92		35-142	9		50
Benzo(a)anthracene	89		96		40-140	8		50
Chrysene	80		88		40-140	10		50
Benzo(b)fluoranthene	90		103		40-140	13		50
Benzo(a)pyrene	93		99		40-140	6		50
Benzo(ghi)perylene	88		94		40-140	7		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	86		92		25-120
Phenol-d6	92		99		10-120
Nitrobenzene-d5	101		108		23-120
2-Fluorobiphenyl	81		86		30-120
2,4,6-Tribromophenol	92		101		10-136
4-Terphenyl-d14	79		86		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 21-28,33 Batch: WG1506298-2 WG1506298-3								
Naphthalene	93		82		40-140	13		50
Fluorene	106		92		40-140	14		50
Phenanthrene	103		92		40-140	11		50
Anthracene	109		98		40-140	11		50
Pyrene	113		99		35-142	13		50
Benzo(a)anthracene	109		101		40-140	8		50
Chrysene	103		89		40-140	15		50
Benzo(b)fluoranthene	114		100		40-140	13		50
Benzo(a)pyrene	114		101		40-140	12		50
Benzo(ghi)perylene	108		98		40-140	10		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	85		88		25-120
Phenol-d6	84		86		10-120
Nitrobenzene-d5	89		90		23-120
2-Fluorobiphenyl	98		86		30-120
2,4,6-Tribromophenol	116		103		10-136
4-Terphenyl-d14	106		95		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	28.7		mg/kg	2.13	0.114	1	05/30/21 11:45	06/01/21 20:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2010		mg/kg	2.16	0.116	1	05/30/21 11:45	06/01/21 20:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3420		mg/kg	2.27	0.122	1	05/30/21 11:45	06/01/21 20:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2430		mg/kg	2.97	0.159	1	05/30/21 11:45	06/01/21 21:06	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05 Date Collected: 05/20/21 08:40

Client ID: PB-663-13-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	73.6		mg/kg	2.27	0.122	1	05/30/21 11:45	06/01/21 21:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	34.4		mg/kg	2.74	0.147	1	05/30/21 11:45	06/01/21 21:16	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	52.1		mg/kg	2.28	0.122	1	05/30/21 11:45	06/01/21 21:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08 Date Collected: 05/20/21 09:55

Client ID: PB-672-02-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.8		mg/kg	2.26	0.121	1	05/30/21 11:45	06/01/21 21:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09 Date Collected: 05/20/21 10:05

Client ID: PB-672-03-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	23.4		mg/kg	2.31	0.124	1	05/30/21 11:45	06/01/21 21:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10 Date Collected: 05/20/21 10:10

Client ID: PB-672-04-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.1		mg/kg	2.21	0.118	1	05/30/21 11:45	06/01/21 21:36	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.4		mg/kg	2.30	0.123	1	05/30/21 11:45	06/01/21 21:41	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.6		mg/kg	2.23	0.120	1	05/30/21 11:45	06/01/21 21:47	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.4		mg/kg	2.24	0.120	1	05/30/21 11:45	06/01/21 21:52	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	22.8		mg/kg	2.33	0.125	1	05/30/21 11:45	06/01/21 22:07	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.5		mg/kg	2.22	0.119	1	05/30/21 11:45	06/01/21 22:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.7		mg/kg	2.26	0.121	1	05/30/21 11:45	06/01/21 22:17	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.2		mg/kg	2.35	0.126	1	05/30/21 11:45	06/01/21 22:22	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18 Date Collected: 05/20/21 11:55

Client ID: PB-672-12-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	133		mg/kg	2.28	0.122	1	05/30/21 11:45	06/01/21 22:27	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19 Date Collected: 05/20/21 12:10

Client ID: PB-672-13-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.2		mg/kg	2.30	0.123	1	05/30/21 11:45	06/01/21 22:32	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20 Date Collected: 05/20/21 12:25

Client ID: PB-672-14-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	128		mg/kg	2.29	0.122	1	05/30/21 11:45	06/01/21 22:37	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	18.1		mg/kg	2.31	0.124	1	05/29/21 11:00	06/01/21 12:40	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	34.5		mg/kg	2.29	0.123	1	05/29/21 11:00	06/01/21 12:45	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	80.6		mg/kg	2.41	0.129	1	05/29/21 11:00	06/01/21 12:50	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.3		mg/kg	2.42	0.130	1	05/29/21 11:00	06/01/21 12:55	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25 Date Collected: 05/20/21 13:55

Client ID: PB-672-19-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.1		mg/kg	2.27	0.122	1	05/29/21 11:00	06/01/21 13:00	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	45.4		mg/kg	2.28	0.122	1	05/29/21 11:00	06/01/21 13:05	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	15.2		mg/kg	2.20	0.118	1	05/29/21 11:00	06/01/21 13:11	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	292		mg/kg	2.37	0.127	1	05/29/21 11:00	06/01/21 13:16	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-30
Client ID: FB-210520-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:13	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:18	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32
Client ID: FB-210520-3
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 15:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:23	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	54.9		mg/kg	2.63	0.141	1	05/29/21 11:00	06/01/21 13:21	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 30-32 Batch: WG1502834-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	05/26/21 20:46	1,6020B	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-20 Batch: WG1505049-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/30/21 11:45	06/01/21 20:07	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21-28,33 Batch: WG1505050-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/29/21 11:00	06/01/21 08:44	1,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 30-32 Batch: WG1502834-2								
Lead, Total	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-20 Batch: WG1505049-2 SRM Lot Number: D109-540								
Lead, Total	88		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 21-28,33 Batch: WG1505050-2 SRM Lot Number: D109-540								
Lead, Total	103		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 30-32 QC Batch ID: WG1502834-3 QC Sample: L2126825-11 Client ID: MS Sample												
Lead, Total	ND	510	531.0	104		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1505049-3 QC Sample: L2126821-01 Client ID: PB-663-08-SS01												
Lead, Total	28.7	43.4	67.1	88		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21-28,33 QC Batch ID: WG1505050-3 QC Sample: L2125274-01 Client ID: MS Sample												
Lead, Total	34.3	64.8	88.6	84		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 30-32 QC Batch ID: WG1502834-4 QC Sample: L2126825-11 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1505049-4 QC Sample: L2126821-01 Client ID: PB-663-08-SS01						
Lead, Total	28.7	27.5	mg/kg	4		20
Total Metals - Mansfield Lab Associated sample(s): 21-28,33 QC Batch ID: WG1505050-4 QC Sample: L2125274-01 Client ID: DUP Sample						
Lead, Total	34.3	39.2	mg/kg	13		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.2		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05
Client ID: PB-663-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08
Client ID: PB-672-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 09:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.0		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09
Client ID: PB-672-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:05
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10
Client ID: PB-672-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/20/21 10:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.0		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18
Client ID: PB-672-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19
Client ID: PB-672-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 12:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20
Client ID: PB-672-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 12:25
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.9		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25
Client ID: PB-672-19-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.3		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-20 QC Batch ID: WG1502360-1 QC Sample: L2126821-01 Client ID: PB-663-08-SS01						
Solids, Total	91.1	91.7	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 21-28,33 QC Batch ID: WG1502376-1 QC Sample: L2127149-24 Client ID: DUP Sample						
Solids, Total	86.0	85.5	%	1		20

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-01A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-01B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-01C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-01D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-01F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-02A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-02B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-02C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-02D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-02F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-03A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-03B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-03C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-03D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-03F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-04A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-04B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-04C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-04D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-04F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-05A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-05B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-05C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-05D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-05F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-06A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-06B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-06C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-06D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-06F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-07A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-07B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-07C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-07D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-07F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-08A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-08B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-08C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-08D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-08F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-09A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-09B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-09C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-09D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-09F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-10A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-10B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-10C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-10D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-10F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-11A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-11B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-11C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-11D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-11F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-12A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-12B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-12C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-12D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-12F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-13A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-13B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-13C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-13D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-13F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-14A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-14B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-14C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-14D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-14F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-15A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-15B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-15C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-15D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-15F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-16A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-16B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-16C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-16D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-16F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-17A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-17B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-17C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-17D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-17F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-18A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-18B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-18C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-18D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-18E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-18F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-19A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-19B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-19C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-19D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-19F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-20A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-20B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-20C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-20D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-20E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-20F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-21A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-21B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-21C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-21D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-21E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-21F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-22A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-22B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-22C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-22D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-22E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-22F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-23A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-23B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-23C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-23D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-23E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-23F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-24A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-24B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-24C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-24D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-24E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-24F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-25A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-25B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-25C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-25D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-25E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-25F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-26A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-26B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-26C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-26D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-26E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-26F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-27A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-27B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-27C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-27D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-27E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-27F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-28A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-28B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-28C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-28D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-28E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-28F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-29A	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126821-29B	Vial HCl preserved	A	NA		2.9	Y	Absent		8011(14)
L2126821-30A	Vial HCl preserved	A	NA		2.9	Y	Absent		HOLD-8260(14)
L2126821-30B	Vial HCl preserved	A	NA		2.9	Y	Absent		HOLD-8260(14)
L2126821-30C	Vial HCl preserved	A	NA		2.9	Y	Absent		HOLD-8260(14)
L2126821-30D	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126821-30E	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126821-30F	Plastic 250ml HNO3 preserved	A	<2	<2	2.9	Y	Absent		PB-6020T-PPB(180)
L2126821-30G	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126821-30H	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126821-31A	Vial HCl preserved	C	NA		2.5	Y	Absent		PA-8260(14)
L2126821-31B	Vial HCl preserved	C	NA		2.5	Y	Absent		PA-8260(14)
L2126821-31C	Vial HCl preserved	C	NA		2.5	Y	Absent		PA-8260(14)
L2126821-31D	Vial Na2S2O3 preserved	C	NA		2.5	Y	Absent		8011(14)
L2126821-31E	Vial Na2S2O3 preserved	C	NA		2.5	Y	Absent		8011(14)
L2126821-31F	Plastic 250ml HNO3 preserved	C	<2	<2	2.5	Y	Absent		PB-6020T-PPB(180)
L2126821-31G	Amber 250ml unpreserved	C	7	7	2.5	Y	Absent		PA-8270SIM-LVI(7)
L2126821-31H	Amber 250ml unpreserved	C	7	7	2.5	Y	Absent		PA-8270SIM-LVI(7)
L2126821-32A	Vial HCl preserved	B	NA		4.3	Y	Absent		PA-8260(14)
L2126821-32B	Vial HCl preserved	B	NA		4.3	Y	Absent		PA-8260(14)
L2126821-32C	Vial HCl preserved	B	NA		4.3	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-32D	Vial Na2S2O3 preserved	B	NA		4.3	Y	Absent		8011(14)
L2126821-32E	Vial Na2S2O3 preserved	B	NA		4.3	Y	Absent		8011(14)
L2126821-32F	Plastic 250ml HNO3 preserved	B	<2	<2	4.3	Y	Absent		PB-6020T-PPB(180)
L2126821-32G	Amber 250ml unpreserved	B	7	7	4.3	Y	Absent		PA-8270SIM-LVI(7)
L2126821-32H	Amber 250ml unpreserved	B	7	7	4.3	Y	Absent		PA-8270SIM-LVI(7)
L2126821-33A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-33B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-33C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-33D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-33E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-33F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4574
Fax:
Email: william.schmidt@ransom

Project Information
Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☒ Other Email, ADEX

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Report Only Project Specific Analyte List

Please specify Metals or TAL.
Pader Leaded/Unleaded Gasoline Short List, No 1-6 Fuel Oil Short List, Lead Only

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	METALS (LEAD)	TS	PA-8260 HLM	Sample Specific Comments	Total Bottle
26821-01	PB-663-08-5501	5/20	0800	S	FS	✓	✓	✓	✓		6
-02	PB-663-09-5501		0810			✓	✓	✓	✓		6
-03	PB-663-10-5501		0818			✓	✓	✓	✓		6
-04	PB-663-12-5501		0830			✓	✓	✓	✓		6
-05	PB-663-13-5501		0840			✓	✓	✓	✓		6
-06	PB-663-14-5501		0855			✓	✓	✓	✓		6
-07	PB-672-01-5501		0945			✓	✓	✓	✓		6
-08	PB-672-02-5501		0955			✓	✓	✓	✓		6
-09	PB-672-03-5501		1005			✓	✓	✓	✓		6
-10	PB-672-04-5501		1010			✓	✓	✓	✓		6

Container Type: A A P V
Preservative: A A A F

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545		
	5/20/21		5/20/21 1545
	5/20/21		5/20/21 1730
	5/20/21 2330		5/21/21 0220

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 4

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information

Client: RANSOM CONSULTING

Address: 2 2127 HAMILTON AVE

Phone: 215-901-4974

Fax:

Email: WILLIAM.SCHMIDT@RANSOM

Project Information

Project Name: PHILADELPHIA REFINERY - AST CLOSURE

Project Location: PHILADELPHIA, PA

Project #: 200.00135.005

(Use Project name as Project #)

Project Manager: WILLIAM SCHMIDT

ALPHAQuote #:

Turn-Around Time

Standard ✓ Due Date:

Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced

☐ EQuIS (1 File) ☐ EQuIS (4 File)

☐ Other

Billing Information

✓ Same as Client Info

PO #

Regulatory Requirement

☐ SRS Residential/Non Residential

☐ SRS Impact to Groundwater

☐ NJ Ground Water Quality Standards

☐ NJ IGW SPLP Leachate Criteria

☐ Other

Site Information

Is this site impacted by Petroleum? Yes ✓

Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
SEE Pg. 1

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	METALS (LEAD)	TS	PA-8260 HLM	Sample Specific Comments	Total Bottle
26821 - 11	PB-672-05-5501	5/20	1020	S	TS	✓	✓	✓	✓		6
-12	PB-672-06-5501		1040			✓	✓	✓	✓		6
-13	PB-672-07-5501		1045			✓	✓	✓	✓		6
-14	PB-672-08-5501		1100			✓	✓	✓	✓		6
-15	PB-672-09-5501		1115			✓	✓	✓	✓		6
-16	PB-672-10-5501		1125			✓	✓	✓	✓		6
-17	PB-672-11-5501		1140			✓	✓	✓	✓		6
-18	PB-672-12-5501		1155			✓	✓	✓	✓		6
-19	PB-672-13-5501		1210			✓	✓	✓	✓		6
-20	PB-672-14-5501	↓	1225	↓	↓	✓	✓	✓	✓		6

Container Type	A	A	P	V
Preservative	A	A	A	F

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545	2K.Fm	5/20/21 1545
2K.Fm	5/20/21 1730		5/20/21 1730
	5/20/21 2200		
	5/21/21 0800		5/21/21 0830

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of 3

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@Ransom

Project Information

Project Name: Philadelphia Refinery - AST Closures
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
SEE PG 1

Please specify Metals or TAL.

ANALYSIS

PA-8270 SIM | METALS (LEAD) | TS | PA-8260 HLM

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total # Bottles
26821-21	PB-672-15-5501	5/20	1320	S	TS		6
-22	PB-672-16-5501		1330				6
-23	PB-672-17-5501		1340				6
-24	PB-672-18-5501		1350				6
-25	PB-672-19-5501		1355				6
-26	PB-672-20-5501		1410				6
	~~PB-672-21-5501~~						
-27	PB-672-21-5501		1415	S			6
-28	PB-672-22-5501		1430	S			6
-29	TB-210520			A			

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545	ALPHA	5/20/21 1545
ALPHA	5/20/21 1730		5-21-21 1220
	5/20/21 2206		
	5/21 0200		5/21/21 0233

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No. 01-14 HC (rev. 30-Sept-2013)

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Page 4 of 4

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email:

Project Information

Project Name: Philadelphia Refinery- AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
SEE Pg 1

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270SIM-WI	TOTAL LEAD	PA-8260	8011	PA-8270SIM	TOTAL METALS (CSL+LEAD)	TS	PA-8260HLW	Total Bottles
26821-30	FB-210520-1	5/20	1440	A	TS	✓	✓	✓	✓					8
-31	FB-210520-2		1445	A	TS	✓	✓	✓	✓					8
-32	FB-210520-3		1500	A	TS	✓	✓	✓	✓					8
-33	DUP-02	5/20	0800	S	TS					✓	✓	✓	✓	8

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545	ALC	5/20/21 1545
ALC	5/20/21 1730		0730 5/21/21
	5/20/21 2305		
			5/21/21 0230

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2126948
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/09/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126948
Report Date: 06/09/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126948-01	PB-672-23-SS01	SOIL	PHILADELPHIA, PA	05/21/21 07:40	05/21/21
L2126948-02	FB-210521	WATER	PHILADELPHIA, PA	05/21/21 09:30	05/21/21
L2126948-03	TB-210521	WATER	PHILADELPHIA, PA	05/21/21 00:00	05/21/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2126948-03: The analyses performed were specified by the client.

Semivolatile Organics by SIM

L2126948-01D: The sample has elevated detection limits due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 06/09/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01
Client ID: PB-672-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 07:40
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 02:49
Analyst: MV
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.00082	J	mg/kg	0.00089	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00089	0.00052	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02
Client ID: FB-210521
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 09:30
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/26/21 15:43
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/26/21 13:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02 Date Collected: 05/21/21 09:30
Client ID: FB-210521 Date Received: 05/21/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 12:40
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	84		70-130
4-Bromofluorobenzene	76		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-03
Client ID: TB-210521
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 00:00
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/26/21 15:49
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/26/21 13:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-03 Date Collected: 05/21/21 00:00
Client ID: TB-210521 Date Received: 05/21/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 13:06
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	77		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-03 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/26/21 14:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/26/21 13:36

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 02-03 Batch: WG1503980-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/27/21 19:43
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1504868-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 02-03 Batch: WG1503980-2								
1,2-Dibromoethane	85		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1504868-3 WG1504868-4								
Methyl tert butyl ether	95		92		66-130	3		30
Benzene	111		106		70-130	5		30
1,2-Dichloroethane	112		108		70-130	4		30
Toluene	106		103		70-130	3		30
1,2-Dibromoethane	105		106		70-130	1		30
Ethylbenzene	103		101		70-130	2		30
p/m-Xylene	101		100		70-130	1		30
o-Xylene	100		98		70-130	2		30
Isopropylbenzene	100		98		70-130	2		30
1,3,5-Trimethylbenzene	100		98		70-130	2		30
1,2,4-Trimethylbenzene	100		99		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		104		70-130
Toluene-d8	102		103		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	100		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01 D
Client ID: PB-672-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 07:40
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 17:43
Analyst: DV
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 06/03/21 08:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.10		mg/kg	0.094	0.017	10
Fluorene	0.024	J	mg/kg	0.094	0.011	10
Phenanthrene	0.16		mg/kg	0.094	0.0080	10
Anthracene	0.034	J	mg/kg	0.094	0.0075	10
Pyrene	0.20		mg/kg	0.094	0.0066	10
Benzo(a)anthracene	0.28		mg/kg	0.094	0.0089	10
Chrysene	0.43		mg/kg	0.094	0.0070	10
Benzo(b)fluoranthene	0.37		mg/kg	0.094	0.0089	10
Benzo(a)pyrene	0.52		mg/kg	0.094	0.011	10
Benzo(ghi)perylene	0.56		mg/kg	0.094	0.0080	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	39		30-120
4-Terphenyl-d14	31		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02
Client ID: FB-210521
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 09:30
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:31
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	80		15-120
4-Terphenyl-d14	92		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:12
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02 Batch: WG1504177-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	0.02	J	ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		21-120
Phenol-d6	62		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	93		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	105		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 15:15
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 06/03/21 08:52

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1507007-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00053
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0066	0.00063
Chrysene	ND		mg/kg	0.0066	0.00050
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00063
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	89		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	74		10-136
4-Terphenyl-d14	82		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1504177-2 WG1504177-3								
Naphthalene	77		77		40-140	0		40
Fluorene	82		81		40-140	1		40
Phenanthrene	84		83		40-140	1		40
Anthracene	85		85		40-140	0		40
Pyrene	84		81		26-127	4		40
Benzo(a)anthracene	86		82		40-140	5		40
Chrysene	84		84		40-140	0		40
Benzo(b)fluoranthene	90		85		40-140	6		40
Benzo(a)pyrene	90		87		40-140	3		40
Benzo(ghi)perylene	87		85		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		75		21-120
Phenol-d6	60		60		10-120
Nitrobenzene-d5	93		94		23-120
2-Fluorobiphenyl	80		80		15-120
2,4,6-Tribromophenol	82		83		10-120
4-Terphenyl-d14	89		87		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1507007-2 WG1507007-3								
Naphthalene	69		72		40-140	4		50
Fluorene	70		74		40-140	6		50
Phenanthrene	70		72		40-140	3		50
Anthracene	75		77		40-140	3		50
Pyrene	72		76		35-142	5		50
Benzo(a)anthracene	73		71		40-140	3		50
Chrysene	67		70		40-140	4		50
Benzo(b)fluoranthene	72		76		40-140	5		50
Benzo(a)pyrene	76		75		40-140	1		50
Benzo(ghi)perylene	75		72		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	74		78		25-120
Phenol-d6	82		86		10-120
Nitrobenzene-d5	88		93		23-120
2-Fluorobiphenyl	68		72		30-120
2,4,6-Tribromophenol	66		69		10-136
4-Terphenyl-d14	71		77		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01 Date Collected: 05/21/21 07:40

Client ID: PB-672-23-SS01 Date Received: 05/21/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	153		mg/kg	2.72	0.146	1	05/31/21 05:45	06/08/21 21:34	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02
Client ID: FB-210521
Sample Location: PHILADELPHIA, PA
Date Collected: 05/21/21 09:30
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:28	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1502834-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	05/26/21 20:46	1,6020B	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1505625-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/31/21 05:45	06/03/21 20:44	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1502834-2								
Lead, Total	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1505625-2 SRM Lot Number: D109-540								
Lead, Total	98		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126948
Report Date: 06/09/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1502834-3 QC Sample: L2126825-11 Client ID: MS Sample												
Lead, Total	ND	510	531.0	104		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1505625-3 QC Sample: L2125488-01 Client ID: MS Sample												
Lead, Total	9.47	44.9	43.6	76		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1502834-4 QC Sample: L2126825-11 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1505625-4 QC Sample: L2125488-01 Client ID: DUP Sample						
Lead, Total	9.47	11.0	mg/kg	15		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01
Client ID: PB-672-23-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/21/21 07:40
Date Received: 05/21/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.4		%	0.100	NA	1	-	05/22/21 10:21	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1502367-1 QC Sample: L2126873-21 Client ID: DUP Sample						
Solids, Total	71.9	72.1	%	0		20

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126948
Report Date: 06/09/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126948-01A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2126948-01B	Vial water preserved	A	NA		3.4	Y	Absent	22-MAY-21 06:50	PA-8260HLW(14)
L2126948-01C	Vial water preserved	A	NA		3.4	Y	Absent	22-MAY-21 06:50	PA-8260HLW(14)
L2126948-01D	Plastic 120ml unpreserved	A	NA		3.4	Y	Absent		TS(7)
L2126948-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180)
L2126948-01F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PA-8270SIM(14)
L2126948-02A	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-02B	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-02C	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-02D	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)
L2126948-02E	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)
L2126948-02F	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		PB-6020T-PPB(180)
L2126948-02G	Amber 250ml unpreserved	A	7	7	3.4	Y	Absent		PA-8270SIM-LVI(7)
L2126948-02H	Amber 250ml unpreserved	A	7	7	3.4	Y	Absent		PA-8270SIM-LVI(7)
L2126948-03A	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-03B	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-03C	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)
L2126948-03D	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
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GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab: 5/22/21

ALPHA Job #: L 2126948

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-401-4974
Fax:
Email: William.Schmidt@Ransom

Project Information

Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard
Rush (only if pre approved)
Due Date:
# of Days:

Deliverables

- NJ Full / Reduced
- EQuIS (1 File) / EQuIS (4 File)
- Other: Email, AVEX

Regulatory Requirement

- SRS Residential/Non Residential
- SRS Impact to Groundwater
- NJ Ground Water Quality Standards
- NJ IGW SPLP Leachate Criteria
- Other

Billing Information

Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes
Petroleum Product:

These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:
- Category 1
- Category 2

For VOC, selection is REQUIRED:
- 1,4-Dioxane
- 8011

Other project specific requirements/comments:
Report Only Project Specific Analytes List
Please specify Metals or TAL.
Radgp Leaded/Unleaded Gasoline Short List
No 4-6 Fuel Oil Short List, Lead Only

ANALYSIS

Sample Filtration
- Done
- Lab to do

Preservation
- Lab to do

(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	Metals (Lead)	TS	PA-8260 HLM	PA-8270 SIM LVI	Total Lead	PA 8260	8011	Sample Specific Comments	Total Bottle
2126948-01	DB-672-23-5501	5/21	0740	S	TS	✓	✓	✓	✓						6
-02	FB-210521		0930	A	TS					✓	✓	✓	✓		8
-03	TB-210521														

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	A	P	V				
Preservative	A	A	A	F				

Relinquished By:	Date/Time	Received By:	Date/Time
	5/21/21	ATHL	5/21/21 1100
	5/21/21 17:02		5/21/21 17:02
	5/21/21	AHC	5/21/21 2300
	5/22/21 0215		5/22/21 0215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2165356
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY-860 RELEASE
Project Number:	200.00135.005.03
Report Date:	12/08/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 12/08/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2165356-01	PB-666-12R-0.0-0.5	SOIL	PHILADELPHIA, PA	11/29/21 13:20	11/29/21
L2165356-02	PB-666-12R-6.0-6.5	SOIL	PHILADELPHIA, PA	11/29/21 13:25	11/29/21
L2165356-03	PB-666-12R-14.5-15.0	SOIL	PHILADELPHIA, PA	11/29/21 13:30	11/29/21
L2165356-04	PB-666-11R-0.0-0.5	SOIL	PHILADELPHIA, PA	11/29/21 14:15	11/29/21
L2165356-05	PB-666-11R-6.0-6.5	SOIL	PHILADELPHIA, PA	11/29/21 14:20	11/29/21
L2165356-06	PB-666-11R-14.5-15.0	SOIL	PHILADELPHIA, PA	11/29/21 14:30	11/29/21
L2165356-07	PB-666-29-0.0-0.5	SOIL	PHILADELPHIA, PA	11/29/21 15:00	11/29/21
L2165356-08	PB-666-29-3.5-4.0	SOIL	PHILADELPHIA, PA	11/29/21 15:05	11/29/21
L2165356-09	PB-666-29-6.0-6.5	SOIL	PHILADELPHIA, PA	11/29/21 15:10	11/29/21
L2165356-10	FB-211129	WATER	PHILADELPHIA, PA	11/29/21 14:00	11/29/21
L2165356-11	TB-211129	WATER	PHILADELPHIA, PA	11/29/21 00:00	11/29/21

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	12/08/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	12/08/21

Case Narrative (continued)

Report Submission

December 08, 2021: This final report includes the results of all requested analyses.

December 07, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

L2165356-01D and -08D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2165356-05D: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix, and due to the analytical dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 12/08/21

ORGANICS

VOLATILES

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-04
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 08:06
Analyst: MKS
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.0013		mg/kg	0.00078	0.00026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-05
Client ID: PB-666-11R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 08:32
Analyst: MKS
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00088		mg/kg	0.00065	0.00022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-07
Client ID: PB-666-29-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 08:57
Analyst: MKS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00078	0.00026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-08
Client ID: PB-666-29-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:05
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 09:22
Analyst: MKS
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00093	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	107		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-09
Client ID: PB-666-29-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:10
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 09:47
Analyst: MKS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00079	0.00026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-10
Client ID: FB-211129
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/05/21 12:36
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	105		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-11
Client ID: TB-211129
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 00:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/05/21 12:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/02/21 07:42
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04-05,07-09 Batch: WG1578798-5					
Benzene	ND		mg/kg	0.00050	0.00017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	102		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/05/21 06:35
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 10-11 Batch: WG1579408-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04-05,07-09 Batch: WG1578798-3 WG1578798-4								
Benzene	112		106		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		113		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	103		105		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 10-11 Batch: WG1579408-3 WG1579408-4								
Benzene	98		100		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		102		70-130
Toluene-d8	99		96		70-130
4-Bromofluorobenzene	92		97		70-130
Dibromofluoromethane	106		108		70-130

SEMIVOLATILES

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-01 D
Client ID: PB-666-12R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 13:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 13:32
Analyst: WR
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.84	J	mg/kg	1.2	0.14	5
Benzo(b)fluoranthene	31.		mg/kg	0.70	0.20	5
Benzo(a)pyrene	20.		mg/kg	0.93	0.28	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	70		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-02
Client ID: PB-666-12R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 13:25
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/04/21 03:39
Analyst: EK
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.054	J	mg/kg	0.22	0.027	1
Benzo(b)fluoranthene	0.32		mg/kg	0.13	0.037	1
Benzo(a)pyrene	0.25		mg/kg	0.18	0.053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	63		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-04 D2
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 15:24
Analyst: WR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	57.		mg/kg	1.2	0.34	10

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-04 D
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 13:57
Analyst: WR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	50.	E	mg/kg	0.60	0.17	5
Benzo(a)pyrene	34.		mg/kg	0.80	0.24	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	54		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-05 D
Client ID: PB-666-11R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 13:11
Analyst: IM
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/03/21 18:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	18.		mg/kg	3.9	1.1	10
Benzo(a)pyrene	12.		mg/kg	5.2	1.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	43		30-120
4-Terphenyl-d14	40		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-07
Client ID: PB-666-29-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/03/21 20:53
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	0.45		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.37		mg/kg	0.19	0.057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	68		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-08 D
Client ID: PB-666-29-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:05
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 15:09
Analyst: WR
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	1.4		mg/kg	0.64	0.18	5
Benzo(a)pyrene	1.0		mg/kg	0.85	0.26	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	46		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-09
Client ID: PB-666-29-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:10
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/04/21 01:27
Analyst: EK
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	0.051	J	mg/kg	0.14	0.040	1
Benzo(a)pyrene	ND		mg/kg	0.19	0.058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	83		30-120
4-Terphenyl-d14	70		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-10
Client ID: FB-211129
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/06/21 11:19
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	65		15-120
4-Terphenyl-d14	63		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/03/21 02:28
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02,04,07-09 Batch: WG1578390-1					
Naphthalene	ND		mg/kg	0.16	0.020
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	74		18-120

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 12:56
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 02:56

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1579243-1					
Naphthalene	ND		ug/l	0.10	0.05
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	45		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	64		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	69		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/04/21 00:52
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 12/03/21 12:33

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1579722-1					
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	82		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02,04,07-09 Batch: WG1578390-2 WG1578390-3								
Naphthalene	73		70		40-140	4		50
Benzo(b)fluoranthene	81		78		40-140	4		50
Benzo(a)pyrene	77		73		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	74		71		23-120
2-Fluorobiphenyl	82		77		30-120
4-Terphenyl-d14	83		78		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1579243-2 WG1579243-3								
Naphthalene	71		68		40-140	4		40
Benzo(b)fluoranthene	75		84		40-140	11		40
Benzo(a)pyrene	77		84		40-140	9		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	66		62		21-120
Phenol-d6	54		52		10-120
Nitrobenzene-d5	78		72		23-120
2-Fluorobiphenyl	73		72		15-120
2,4,6-Tribromophenol	82		85		10-120
4-Terphenyl-d14	75		81		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1579722-2 WG1579722-3								
Benzo(b)fluoranthene	72		70		40-140	3		50
Benzo(a)pyrene	67		66		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	64		61		23-120
2-Fluorobiphenyl	67		64		30-120
4-Terphenyl-d14	70		68		18-120

METALS

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-01
Client ID: PB-666-12R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/29/21 13:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2460		mg/kg	2.68	0.144	1	12/02/21 21:35	12/06/21 14:49	EPA 3050B	1,6010D	GD

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-02 Date Collected: 11/29/21 13:25

Client ID: PB-666-12R-6.0-6.5 Date Received: 11/29/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	307		mg/kg	2.69	0.144	1	12/02/21 21:35	12/06/21 14:54	EPA 3050B	1,6010D	GD

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-10
Client ID: FB-211129
Sample Location: PHILADELPHIA, PA
Date Collected: 11/29/21 14:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/01/21 09:37	12/01/21 15:01	EPA 3005A	1,6020B	CD

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 12/08/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10 Batch: WG1577334-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/01/21 09:37	12/01/21 14:10	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1578288-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/02/21 21:35	12/06/21 12:29	1,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1577334-2								
Lead, Total	102		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1578288-2 SRM Lot Number: D109-540								
Lead, Total	96		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 12/08/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1577334-3 QC Sample: L2165121-03 Client ID: MS Sample												
Lead, Total	ND	530	536.2	101		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1578288-3 WG1578288-4 QC Sample: L2165322-01 Client ID: MS Sample												
Lead, Total	6.23	45.1	41.5	78		42.7	80		75-125	3		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1577334-4 QC Sample: L2165121-03 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-01
Client ID: PB-666-12R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 13:20
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.2		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-02
Client ID: PB-666-12R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 13:25
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.3		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-04
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.0		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-05
Client ID: PB-666-11R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.0		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-07
Client ID: PB-666-29-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-08
Client ID: PB-666-29-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 15:05
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.7		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 12/08/21

SAMPLE RESULTS

Lab ID: L2165356-09
Client ID: PB-666-29-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 15:10
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 12/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-09 QC Batch ID: WG1577157-1 QC Sample: L2165356-01 Client ID: PB-666-12R-0.0-0.5						
Solids, Total	71.2	71.7	%	1		20

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 12/08/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165356-01A	Vial MeOH preserved	B	NA		3.6	Y	Absent		HOLD-8260HLW(14)
L2165356-01B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-01C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-01D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L2165356-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		PB-TI(180)
L2165356-01F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		PA-PAH(14)
L2165356-02A	Vial MeOH preserved	B	NA		3.6	Y	Absent		HOLD-8260HLW(14)
L2165356-02B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-02C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-02D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L2165356-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		PB-TI(180)
L2165356-02F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		PA-PAH(14)
L2165356-03A	Vial MeOH preserved	B	NA		3.6	Y	Absent		HOLD-8260HLW(14)
L2165356-03B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-03C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-03D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		HOLD-WETCHEM()
L2165356-03E	Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		HOLD-METAL(180)
L2165356-03F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		HOLD-8270(14)
L2165356-04A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-04B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-04C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-04D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 12/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165356-04E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-04F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-05A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-05B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-05C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-05D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)
L2165356-05E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-05F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-06A	Vial MeOH preserved	A	NA		5.1	Y	Absent		HOLD-8260HLW(14)
L2165356-06B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-06C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-06D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		HOLD-WETCHEM()
L2165356-06E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		HOLD-8270(14)
L2165356-06F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		HOLD-8270(14)
L2165356-07A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-07B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-07C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-07D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)
L2165356-07E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-07F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-08A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-08B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-08C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-08D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)
L2165356-08E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-08F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-09A	Vial MeOH preserved	B	NA		3.6	Y	Absent		PA-8260HLW(14)
L2165356-09B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 12/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165356-09C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-09D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L2165356-09E	Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		ARCHIVE()
L2165356-09F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		PA-PAH(14)
L2165356-10A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2165356-10B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2165356-10C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2165356-10D	Plastic 120ml unpreserved	A	7	7	5.1	Y	Absent		ARCHIVE()
L2165356-10E	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020T-PPB(180)
L2165356-10F	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165356-10G	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165356-11A	Vial HCl preserved	B	NA		3.6	Y	Absent		PA-8260(14)
L2165356-11B	Vial HCl preserved	B	NA		3.6	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	12/08/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	12/08/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	12/08/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	12/08/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/30/21 | ALPHA Job #: L2165356

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
	~~PB-666-12R (0-0.5')~~	11/29				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
65356-01	PB-166-12R-0.0-0.5		1320	S	TS	☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		
02	PB-666-12R-6.0-6.5		1325			☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		
03	PB-666-12R-14.5-15.0		1330			☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	HOLD	
04	PB-666-11R-0.0-0.5		1915			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
05	PB-666-11R-6.0-6.5		1920			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
06	PB-666-11R-14.5-15.0		1930			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	HOLD	
07	PB-666-29-0.0-0.5		1500			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
08	PB-666-29-3.5-4.0		1505			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
09	PB-666-29-6.0-6.5		1510			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
	Container Type					-	-	-	-	-	-	-	-	-	-	-	-		
	Preservative					-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	11/29 1132		11/29/21 1630
	11-29 2000	Paul Masselle	11-29 1720
Paul Masselle 11/30/21 0050		Paul Masselle 11/30/21 0050	

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-02(HAL) (rev. 3-JAN-12)

2

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 11/30/21

ALPHA Job #: L2165356

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation

Project Location: Philadelphia, PA

Project #: 200.00135.005.03

Project Manager: William Schmidt

ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling

Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per attached

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65356-10	FB-211129	11/29	1100	GW		☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		
11	FB-211129	11/29	-	W		☑	☑	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type		-	-	-	-	-	-	-	-	-	-	-	-						
Preservative		-	-	-	-	-	-	-	-	-	-	-	-						

Relinquished By:	Date/Time	Received By:	Date/Time
	11/29		11/29/21 1650
	11/29/21 1730		11-29 1730
	11-29 2400	Paul Mazzella	11/29/21 2050
Paul Mazzella	11/30/21 0050		11/30/21 0050

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HEL) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L2165672
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY-860 RELEASE
Project Number:	200.00135.005.03
Report Date:	12/17/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 12/17/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2165672-01	PB-666-28-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 09:55	11/30/21
L2165672-02	PB-666-28-2.5-3.0	SOIL	PHILADELPHIA, PA	11/30/21 10:00	11/30/21
L2165672-03	PB-666-28-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 10:05	11/30/21
L2165672-04	PB-668-08-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 10:35	11/30/21
L2165672-05	PB-668-08-2.5-3.0	SOIL	PHILADELPHIA, PA	11/30/21 10:40	11/30/21
L2165672-06	PB-668-08-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 10:45	11/30/21
L2165672-07	PB-668-06R-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 11:25	11/30/21
L2165672-08	PB-668-06R-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 11:30	11/30/21
L2165672-09	PB-668-06R-14.5-15.0	SOIL	PHILADELPHIA, PA	11/30/21 11:35	11/30/21
L2165672-10	PB-666-27-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 13:05	11/30/21
L2165672-11	PB-666-27-3.5-4.0	SOIL	PHILADELPHIA, PA	11/30/21 13:10	11/30/21
L2165672-12	PB-666-27-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 13:15	11/30/21
L2165672-13	PB-666-26-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 14:00	11/30/21
L2165672-14	PB-666-26-3.5-4.0	SOIL	PHILADELPHIA, PA	11/30/21 14:05	11/30/21
L2165672-15	PB-666-26-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 14:10	11/30/21
L2165672-16	PB-663-15-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 14:50	11/30/21
L2165672-17	PB-663-15-3.0-3.5	SOIL	PHILADELPHIA, PA	11/30/21 14:55	11/30/21
L2165672-18	PB-663-15-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 15:00	11/30/21
L2165672-19	FB-211130-1	WATER	PHILADELPHIA, PA	11/30/21 15:30	11/30/21
L2165672-20	FB-211130-2	WATER	PHILADELPHIA, PA	11/30/21 15:35	11/30/21
L2165672-21	TB-211130	WATER	PHILADELPHIA, PA	11/30/21 00:00	11/30/21

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

Case Narrative (continued)

Report Submission

December 17, 2021: This final report includes the results of all requested analyses.

December 14, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2165672-19 and -20: Sample containers for Archived Sample Containers were received for Solids, Total. The analysis was not performed.

Volatile Organics

L2165672-11 and -12: One or more of the internal standard recoveries is outside the acceptance criteria; however, the internal standard is within criteria for the target compounds; therefore, the results are reported.

L2165672-11: The surrogate recovery for 4-bromofluorobenzene (136%) is outside the acceptance criteria; however, since the sample was non-detect for all target analytes associated with this surrogate, re-analysis was not required.

L2165672-12: The surrogate recovery for 4-bromofluorobenzene (147%) is outside the acceptance criteria; however, since the sample was non-detect for all target analytes associated with this surrogate, re-analysis was not required.

Semivolatile Organics

L2165672-04D, -05D, -06D, -07D, -10D, -11D, and -12D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2165672-08: One or more of the internal standard recoveries is outside the acceptance criteria; however, the internal standard is within criteria for the target compounds; therefore, the results are reported.

L2165672-10D: The sample has elevated detection limits due to the limited sample volume utilized during

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

Case Narrative (continued)

extraction, as required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 12/17/21

ORGANICS

VOLATILES

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-10
Client ID: PB-666-27-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/09/21 10:52
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00045	J	mg/kg	0.00085	0.00028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	92		70-130

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-11
Client ID: PB-666-27-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 13:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/09/21 10:31
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.0016		mg/kg	0.00075	0.00025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-12
Client ID: PB-666-27-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:15
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/09/21 11:12
Analyst: MKS
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.0039		mg/kg	0.0012	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	**147**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-19
Client ID: FB-211130-1
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 15:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/06/21 11:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-20
Client ID: FB-211130-2
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/06/21 12:50
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	102		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-21
Client ID: TB-211130
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 00:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/04/21 14:06
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	105		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/04/21 09:30
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 21 Batch: WG1579337-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	103		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/06/21 09:15
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-20 Batch: WG1580259-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/09/21 06:05
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 10-12 Batch: WG1581307-5					
Benzene	ND		mg/kg	0.00050	0.00017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	85		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 21 Batch: WG1579337-3 WG1579337-4								
Benzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		107		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	103		105		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-20 Batch: WG1580259-3 WG1580259-4								
Benzene	100		110		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		109		70-130
Toluene-d8	102		97		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	99		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 10-12 Batch: WG1581307-3 WG1581307-4								
Benzene	98		94		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	78		79		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	86		84		70-130

SEMIVOLATILES

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-01
Client ID: PB-666-28-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 09:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 12:19
Analyst: WR
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.16	J	mg/kg	0.26	0.031	1
Benzo(b)fluoranthene	1.5		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.0		mg/kg	0.20	0.062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	78		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-02
Client ID: PB-666-28-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 12:43
Analyst: WR
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.26	0.031	1
Benzo(b)fluoranthene	ND		mg/kg	0.15	0.043	1
Benzo(a)pyrene	ND		mg/kg	0.20	0.063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	78		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-03
Client ID: PB-666-28-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 13:07
Analyst: WR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.23	0.028	1
Benzo(b)fluoranthene	ND		mg/kg	0.14	0.038	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	68		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-04 D
Client ID: PB-668-08-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 16:05
Analyst: EK
Percent Solids: 51%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.54	J	mg/kg	0.64	0.078	2
Benzo(b)fluoranthene	5.1		mg/kg	0.39	0.11	2
Benzo(a)pyrene	3.8		mg/kg	0.52	0.16	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	76		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-05 D
Client ID: PB-668-08-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:40
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 16:27
Analyst: EK
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32	J	mg/kg	0.36	0.043	2
Benzo(b)fluoranthene	4.9		mg/kg	0.21	0.060	2
Benzo(a)pyrene	3.7		mg/kg	0.28	0.087	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	75		18-120

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-06 D
Client ID: PB-668-08-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:45
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 16:49
Analyst: EK
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.51		mg/kg	0.49	0.060	2
Benzo(b)fluoranthene	0.24	J	mg/kg	0.29	0.083	2
Benzo(a)pyrene	ND		mg/kg	0.39	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	67		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-07 D
Client ID: PB-668-06R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 11:25
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 17:11
Analyst: EK
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.15	J	mg/kg	0.50	0.061	2
Benzo(b)fluoranthene	1.3		mg/kg	0.30	0.084	2
Benzo(a)pyrene	0.94		mg/kg	0.40	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	66		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-08
Client ID: PB-668-06R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 11:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 15:08
Analyst: WR
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.24	0.029	1
Benzo(b)fluoranthene	0.043	J	mg/kg	0.14	0.040	1
Benzo(a)pyrene	ND		mg/kg	0.19	0.059	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	91		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-10 D
Client ID: PB-666-27-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 17:33
Analyst: EK
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	ND		mg/kg	0.86	0.24	2
Benzo(a)pyrene	ND		mg/kg	1.1	0.35	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	65		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-11 D
Client ID: PB-666-27-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 18:32
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	0.52		mg/kg	0.30	0.083	2
Benzo(a)pyrene	0.36	J	mg/kg	0.40	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	56		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-12 D
Client ID: PB-666-27-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:15
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 18:10
Analyst: EK
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	1.8		mg/kg	0.30	0.084	2
Benzo(a)pyrene	1.4		mg/kg	0.40	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	62		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-19
Client ID: FB-211130-1
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 19:40
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 02:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	79		15-120
4-Terphenyl-d14	76		41-149

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-20
Client ID: FB-211130-2
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 19:59
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 02:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	69		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 15:59
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/04/21 11:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19-20 Batch: WG1579133-1					
Naphthalene	ND		ug/l	0.10	0.05
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	59		10-120
4-Terphenyl-d14	72		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/11/21 09:54
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-08,10-12 Batch: WG1581810-1					
Naphthalene	ND		mg/kg	0.16	0.020
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	87		30-120
4-Terphenyl-d14	97		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19-20 Batch: WG1579133-2 WG1579133-3								
Naphthalene	61		55		40-140	10		40
Benzo(b)fluoranthene	72		66		40-140	9		40
Benzo(a)pyrene	67		52		40-140	25		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	49		41		21-120
Phenol-d6	41		34		10-120
Nitrobenzene-d5	54		49		23-120
2-Fluorobiphenyl	65		60		15-120
2,4,6-Tribromophenol	73		60		10-120
4-Terphenyl-d14	68		61		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08,10-12 Batch: WG1581810-2 WG1581810-3								
Naphthalene	63		83		40-140	27		50
Benzo(b)fluoranthene	73		100		40-140	31		50
Benzo(a)pyrene	67		88		40-140	27		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	70		90		23-120
2-Fluorobiphenyl	69		86		30-120
4-Terphenyl-d14	74		93		18-120

METALS

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-01
Client ID: PB-666-28-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 09:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	392		mg/kg	3.04	0.163	1	12/08/21 19:35	12/10/21 17:08	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-02 Date Collected: 11/30/21 10:00

Client ID: PB-666-28-2.5-3.0 Date Received: 11/30/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	25.5		mg/kg	3.05	0.163	1	12/08/21 19:35	12/10/21 17:13	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-03
Client ID: PB-666-28-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	34.7		mg/kg	2.73	0.146	1	12/08/21 19:35	12/10/21 17:52	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-13
Client ID: PB-666-26-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.7		mg/kg	2.65	0.142	1	12/08/21 19:35	12/10/21 17:56	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-14
Client ID: PB-666-26-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	141		mg/kg	2.76	0.148	1	12/08/21 19:35	12/10/21 18:01	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-15
Client ID: PB-666-26-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.9		mg/kg	2.86	0.154	1	12/08/21 19:35	12/10/21 18:06	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-16
Client ID: PB-663-15-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:50
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	785		mg/kg	2.55	0.137	1	12/08/21 19:35	12/10/21 18:11	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-17
Client ID: PB-663-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	834		mg/kg	2.46	0.132	1	12/08/21 19:35	12/10/21 18:15	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-18
Client ID: PB-663-15-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1060		mg/kg	2.40	0.129	1	12/08/21 19:35	12/10/21 18:20	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-19
Client ID: FB-211130-1
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 15:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/08/21 04:44	12/08/21 13:39	EPA 3005A	1,6020B	CD

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-20
Client ID: FB-211130-2
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 15:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/08/21 04:44	12/08/21 13:44	EPA 3005A	1,6020B	CD

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 12/17/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 19-20 Batch: WG1580442-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/08/21 04:44	12/08/21 10:16	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03,13-18 Batch: WG1580800-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/08/21 19:35	12/10/21 16:54	1,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 19-20 Batch: WG1580442-2								
Lead, Total	95		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 Batch: WG1580800-2 SRM Lot Number: D109-540								
Lead, Total	94		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 12/17/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1580442-3 QC Sample: L2165938-01 Client ID: MS Sample												
Lead, Total	5.346	530	514.6	96		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 QC Batch ID: WG1580800-3 QC Sample: L2166798-01 Client ID: MS Sample												
Lead, Total	111	52.1	138	**52**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 QC Batch ID: WG1580800-4 QC Sample: L2166798-01 Client ID: DUP Sample						
Lead, Total	111	121	mg/kg	9		20

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2165672
Report Date: 12/17/21

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 QC Batch ID: WG1580800-6 QC Sample: L2166798-01 Client ID: DUP Sample						
Lead, Total	111	132	mg/kg	19		20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-01
Client ID: PB-666-28-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 09:55
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.8		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-02
Client ID: PB-666-28-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 11/30/21 10:00
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.6		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-03
Client ID: PB-666-28-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.6		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-04
Client ID: PB-668-08-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	51.1		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-05
Client ID: PB-668-08-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 10:40
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-06
Client ID: PB-668-08-6.0-6.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 10:45
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.7		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-07
Client ID: PB-668-06R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 11:25
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.9		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-08
Client ID: PB-668-06R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 11:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.5		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-10
Client ID: PB-666-27-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.0		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-11
Client ID: PB-666-27-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.9		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-12
Client ID: PB-666-27-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:15
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.6		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-13
Client ID: PB-666-26-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.5		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-14
Client ID: PB-666-26-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.1		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-15
Client ID: PB-666-26-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:10
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-16
Client ID: PB-663-15-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:50
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.4		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-17
Client ID: PB-663-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.8		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 12/17/21

SAMPLE RESULTS

Lab ID: L2165672-18
Client ID: PB-663-15-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 15:00
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.9		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 12/17/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08,10-12 QC Batch ID: WG1578040-1 QC Sample: L2165440-01 Client ID: DUP Sample						
Solids, Total	86.4	85.9	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 13-18 QC Batch ID: WG1578271-1 QC Sample: L2165522-01 Client ID: DUP Sample						
Solids, Total	64.9	62.8	%	3		20

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 12/17/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-01A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-01B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-01C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-01D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2165672-01F	Glass 250ml/8oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-02A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-02B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-02C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-02D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-02F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-03A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-03B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-03C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-03D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-03F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-04A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-04B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-04C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 12/17/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-04D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-04E	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-04F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-05A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-05B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-05C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-05D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-05E	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-05F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-06A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-06B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-06C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-06D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-06E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-06F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-07A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-07B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-07C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-07D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-07E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-07F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-08A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-08B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-08C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-08D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-08E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-08F	Glass 250ml/8oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-09A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-09B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-09C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-09D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2165672-09E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		-
L2165672-09F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		S-EXT-8270(14)
L2165672-10A	Vial MeOH preserved	C	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165672-10B	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-10C	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-10D	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		TS(7)
L2165672-10E	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-10F	Glass 120ml/4oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-11A	Vial MeOH preserved	C	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165672-11B	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-11C	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-11D	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		TS(7)
L2165672-11E	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-11F	Glass 120ml/4oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-12A	Vial MeOH preserved	C	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165672-12B	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-12C	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-12D	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		TS(7)
L2165672-12E	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-12F	Glass 120ml/4oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-13A	Glass 60ml unpreserved split	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-13B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		TS(7)
L2165672-14A	Glass 60ml unpreserved split	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-14B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		TS(7)
L2165672-15A	Glass 60ml unpreserved split	B	NA		2.8	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 12/17/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-15B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		TS(7)
L2165672-16A	Glass 60ml unpreserved split	C	NA		5.1	Y	Absent		PB-TI(180)
L2165672-16B	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		TS(7)
L2165672-17A	Glass 60ml unpreserved split	C	NA		5.1	Y	Absent		PB-TI(180)
L2165672-17B	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		TS(7)
L2165672-18A	Glass 60ml unpreserved split	C	NA		5.1	Y	Absent		PB-TI(180)
L2165672-18B	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		TS(7)
L2165672-19A	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-19B	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-19C	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-19D	Plastic 250ml HNO3 preserved	C	<2	<2	5.1	Y	Absent		PB-6020T-PPB(180)
L2165672-19E	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-19F	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-19G	Plastic 60ml unpreserved	C	7	7	5.1	Y	Absent		ARCHIVE()
L2165672-20A	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-20B	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-20C	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-20D	Plastic 250ml HNO3 preserved	C	<2	<2	5.1	Y	Absent		PB-6020T-PPB(180)
L2165672-20E	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-20F	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-20G	Plastic 60ml unpreserved	C	7	7	5.1	Y	Absent		ARCHIVE()
L2165672-21A	Vial HCl preserved	B	NA		2.8	Y	Absent		PA-8260(14)
L2165672-21B	Vial HCl preserved	B	NA		2.8	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	12/17/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/1/21

ALPHA Job #: L2165672

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client Info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per attached 15

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65672-01	PB-666-28-0.0-0.5	11/30	0955	S	TS	☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRACORE	2
-02	PB-666-28-2.5-3.0		1000	S	TS	☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRACORE	2
-03	PB-666-28-6.0-6.5		1005	S	TS	☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRACORE	2
-04	PB-668-08-0.0-0.5		1035	S	TS	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRACORE	1
-05	PB-668-08-2.5-3.0		1040	S	TS	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRACORE	1
-06	PB-668-08-6.0-6.5		1045	S	TS	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRACORE	1
-07	PB-668-06R-00-0.5		1125	S	TS	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRA	1
-08	PB-668-06R-6.0-6.5		1130	S	TS	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	DISPOSE TERRA	1
-09	PB-668-06R-14.5-15.0		1135	S	TS	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	HOLD	1
-10	PB-666-27-0.0-0.5		1305	S	TS	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		5
	Container Type					2oz	Foil/Cover		4oz	4oz	4oz								
	Preservative					-	HCL		-	-	-								

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Relinquished By:	Date/Time	Received By:	Date/Time
	11/30		
	11/30/21 1730		11/30/21 1730
	11-30 2000	Paul Mazzella	11/30/21 2030
Paul Mazzella	12/1/21 0135		12/1/21 0135

FORM NO. 01-01(1A)

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/1/21 | ALPHA Job #: L2165672

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information – Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene	TS						Sample Specific Comments	TOTAL # BOTTLES
~~65~~	~~PB-666-27-6.0-6.5~~	11/30	1310	S	TS	☐	☑	☐	☑	☑	☐	☑	☐	☐	☐	☐	☐		
65672-11	PB-666-27-3.5-4.0	11/30	1310	S	TS	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		5
-12	PB-666-27-6.0-6.5		1315	S	TS	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		5
-13	PB-666-26-0.0-0.5		1400	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-14	PB-666-26-3.5-4.0		1405	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-15	PB-666-26-6.0-6.5		1410	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-16	PB-663-15-0.0-0.5		1450	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-17	PB-663-15-3.0-3.5		1455	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-18	PB-663-15-6.0-6.5		1500	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-19	FB-211130-1	V	1530	W	TS	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		7

Container Type	2.5	500ml Amb-Pb		4oz	4oz	4oz							
Preservative		HCl											

Relinquished By:	Date/Time	Received By:	Date/Time
	11/30		
	11/30/21 1700		11/30/21 1750
	11/30 2000	Paul Mazzella	11/30/21
Paul Mazzella	12/1/21 0135		12/1/21 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

2030

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/1/21

ALPHA Job #: L2165672

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

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Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per attached TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
L5672-20	FB-211130-2	11/30	1535	W	TS	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		7
-21	TB-211130	11/30	-	W	TS	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		-
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						-	-	-	-	-	-	-	-	-	-	-	-		
Preservative						-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	11/30 1135		11/30/21 1550
Paul Mazzella	11/30 2030	Paul Mazzella	11/30/21 2030
Paul Mazzella	12/1/21 0125		12/1/21 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

ANALYTICAL REPORT

Lab Number:	L2165918
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY-DELINEATION
Project Number:	200.00135.005.03
Report Date:	12/23/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 12/23/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2165918-01	PB-666-21R-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 09:15	12/01/21
L2165918-02	PB-666-21R-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 09:20	12/01/21
L2165918-03	PB-666-21R-14.5-15.0	SOIL	PHILADELPHIA, PA	12/01/21 09:25	12/01/21
L2165918-04	PB-666-20R-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 09:50	12/01/21
L2165918-05	PB-666-20R-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 09:55	12/01/21
L2165918-06	PB-666-20R-14.5-15.0	SOIL	PHILADELPHIA, PA	12/01/21 10:00	12/01/21
L2165918-07	PB-663-16-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 10:40	12/01/21
L2165918-08	PB-663-16-3.0-3.5	SOIL	PHILADELPHIA, PA	12/01/21 10:45	12/01/21
L2165918-09	PB-663-16-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 10:50	12/01/21
L2165918-10	PB-663-17-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 11:20	12/01/21
L2165918-11	PB-663-17-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 11:30	12/01/21

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	12/23/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	12/23/21

Case Narrative (continued)

Report Submission

December 23, 2021: This final report includes the results of the Lead analysis performed on L2165918-03.

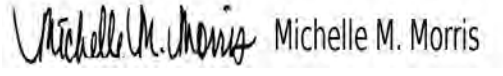
December 08, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2165918-03: The sample has an elevated detection limit for lead due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 12/23/21

ORGANICS

VOLATILES

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-04
Client ID: PB-666-20R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/21 09:50
Date Received: 12/01/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/04/21 15:51
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00089	0.00030	1
Toluene	0.0043		mg/kg	0.0018	0.00097	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	98		70-130

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-05
Client ID: PB-666-20R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/21 09:55
Date Received: 12/01/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/04/21 16:16
Analyst: NLK
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00084	0.00028	1
Toluene	0.0062		mg/kg	0.0017	0.00091	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	127		70-130
Dibromofluoromethane	96		70-130

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/04/21 09:09
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04-05 Batch: WG1579392-5					
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 12/23/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04-05 Batch: WG1579392-3 WG1579392-4								
Benzene	107		104		70-130	3		30
Toluene	114		110		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		108		70-130
Toluene-d8	107		107		70-130
4-Bromofluorobenzene	106		109		70-130
Dibromofluoromethane	93		93		70-130

METALS

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-01 Date Collected: 12/01/21 09:15

Client ID: PB-666-21R-0.0-0.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3340		mg/kg	2.38	0.128	1	12/06/21 20:20	12/08/21 13:03	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-02 Date Collected: 12/01/21 09:20

Client ID: PB-666-21R-6.0-6.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 43%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	8990		mg/kg	9.01	0.483	2	12/06/21 20:20	12/08/21 13:08	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-03 Date Collected: 12/01/21 09:25

Client ID: PB-666-21R-14.5-15.0 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.3		mg/kg	11.8	0.633	5	12/22/21 06:10	12/23/21 12:50	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-07 Date Collected: 12/01/21 10:40

Client ID: PB-663-16-0.0-0.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	621		mg/kg	3.02	0.162	1	12/06/21 20:20	12/08/21 13:13	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-08 Date Collected: 12/01/21 10:45

Client ID: PB-663-16-3.0-3.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	234		mg/kg	2.53	0.136	1	12/06/21 20:20	12/08/21 13:18	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-09 Date Collected: 12/01/21 10:50

Client ID: PB-663-16-6.0-6.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.1		mg/kg	2.71	0.145	1	12/06/21 20:20	12/08/21 13:23	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION
Lab Number: L2165918
Project Number: 200.00135.005.03
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-10
Client ID: PB-663-17-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/21 11:20
Date Received: 12/01/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	508		mg/kg	2.92	0.157	1	12/06/21 20:20	12/08/21 13:29	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION
Lab Number: L2165918
Project Number: 200.00135.005.03
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-11
Client ID: PB-663-17-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/21 11:30
Date Received: 12/01/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	156		mg/kg	2.79	0.149	1	12/06/21 20:20	12/08/21 13:34	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 12/23/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02,07-11 Batch: WG1579583-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/06/21 20:20	12/08/21 11:50	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03 Batch: WG1585691-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/22/21 06:10	12/23/21 09:11	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 12/23/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 Batch: WG1579583-2 SRM Lot Number: D109-540								
Lead, Total	88		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 03 Batch: WG1585691-2 SRM Lot Number: D113-540								
Lead, Total	89		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 12/23/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 QC Batch ID: WG1579583-3 QC Sample: L2165740-01 Client ID: MS Sample												
Lead, Total	131	45.5	134	**7**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1585691-3 QC Sample: L2168094-05 Client ID: MS Sample												
Lead, Total	16.8	46.2	45.6	**62**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 12/23/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 QC Batch ID: WG1579583-4 QC Sample: L2165740-01 Client ID: DUP Sample						
Lead, Total	131	206	mg/kg	**45**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1585691-4 QC Sample: L2168094-05 Client ID: DUP Sample						
Lead, Total	16.8	15.5	mg/kg	8		20

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2165918
Report Date: 12/23/21

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 QC Batch ID: WG1579583-6 QC Sample: L2165740-01 Client ID: DUP Sample						
Lead, Total	131	164	mg/kg	**25**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-01
Client ID: PB-666-21R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:15
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.2		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-02
Client ID: PB-666-21R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:20
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	43.0		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-03
Client ID: PB-666-21R-14.5-15.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:25
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.8		%	0.100	NA	1	-	12/10/21 12:19	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-04
Client ID: PB-666-20R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:50
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-05
Client ID: PB-666-20R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:55
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.6		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-07
Client ID: PB-663-16-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 10:40
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.1		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-08
Client ID: PB-663-16-3.0-3.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 10:45
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.6		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-09
Client ID: PB-663-16-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 10:50
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.7		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-10
Client ID: PB-663-17-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 11:20
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 12/23/21

SAMPLE RESULTS

Lab ID: L2165918-11
Client ID: PB-663-17-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 11:30
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.2		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 12/23/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-11 QC Batch ID: WG1578197-1 QC Sample: L2165811-03 Client ID: DUP Sample						
Solids, Total	90.1	89.5	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1581699-1 QC Sample: L2167863-01 Client ID: DUP Sample						
Solids, Total	89.6	89.4	%	0		20

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 12/23/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165918-01A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-01B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-02A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-02B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-03A	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-03B	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-04A	Vial MeOH preserved	A	NA		4.6	Y	Absent		PA-8260HLW(14)
L2165918-04B	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-04C	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-04D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L2165918-05A	Vial MeOH preserved	A	NA		4.6	Y	Absent		PA-8260HLW(14)
L2165918-05B	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-05C	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-05D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L2165918-06A	Vial MeOH preserved	A	NA		4.6	Y	Absent		HOLD-8260HLW(14)
L2165918-06B	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	HOLD-8260HLW(14)
L2165918-06C	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	HOLD-8260HLW(14)
L2165918-06D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		HOLD-WETCHEM()
L2165918-07A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-07B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-08A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-08B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-09A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 12/23/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165918-09B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-10A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-10B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-11A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-11B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	12/23/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	12/23/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	12/23/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	12/23/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/2/21 | ALPHA Job #: L2165918

Client Information
Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com
☐ These samples have been Previously analyzed by Alpha

Project Information
Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time
☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information – Data Deliverables
☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information
☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits
State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65918-01	PB-666-Z1R-0.0-0.5	12/1	0915	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-02	PB-666-Z1R-6.0-6.5		0920	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-03	PB-666-Z1R-14.5-15.0		0925	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	HOLD	1
-04	PB-666-Z0R-0.0-0.5		0950	S	TS	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-05	PB-666-Z0R-6.0-6.5		0955	S	TS	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-06	PB-666-Z0R-14.5-15.0		1000	S	TS	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	HOLD	4
-07	PB-663-16-0.0-0.5		1040	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-08	PB-663-16-3.0-3.5		1045	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-09	PB-663-16-6.0-6.5		1050	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-10	PB-663-17-0.0-0.5		1120	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
	Container Type					2oz	120z	120z	-	-	-	-	-	-	-	-	-		
	Preservative					-	HCl	HCl	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/1 1530		12/1/21 1530
	12/1/21 1800		12/1/21 1800
	12-1-21 2100	Paul Maggella	12/1/21 2100
Paul Maggella	12/2/21 0128		12/2/21 0138

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC) (rev. 2-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 12/2/21

ALPHA Job #: L2165918

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per ~~attached~~ TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65918-11	PB-663-17-6.0-6.5	12/1	1130	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
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Container Type						-	-	-	-	-	-	-	-	-	-	-	-		
Preservative						-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/1 1530		12/1/21 1530
	12/1/21 1700		12/1/21 1900
	12/2 2100	Paul Mazzella	12/1/21 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(H-NJ) Rev: 6-JAN-12)

Paul Mazzella 12/2/21 0137

12/2/21 0138

ANALYTICAL REPORT

Lab Number:	L2202565
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY AST CLOS
Project Number:	200.00135.005.03
Report Date:	01/21/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2202565-01	PB-663-15-14.5-15.0	SOIL	PHILADELPHIA, PA	01/17/22 11:00	01/17/22
L2202565-02	PB-666-05	SOIL	PHILADELPHIA, PA	01/17/22 11:10	01/17/22
L2202565-03	PB-666-08	SOIL	PHILADELPHIA, PA	01/17/22 11:25	01/17/22
L2202565-04	PB-666-09	SOIL	PHILADELPHIA, PA	01/17/22 11:35	01/17/22
L2202565-05	PB-666-10	SOIL	PHILADELPHIA, PA	01/17/22 11:45	01/17/22
L2202565-06	PB-666-13	SOIL	PHILADELPHIA, PA	01/17/22 12:00	01/17/22

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

Semivolatile Organics

L2202565-02, -03, -05, and -06: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Caitlin Walukevich

Title: Technical Director/Representative Date: 01/21/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02 Date Collected: 01/17/22 11:10
Client ID: PB-666-05 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/20/22 14:46
Analyst: LAC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00070	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00070	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00079	1
o-Xylene	ND		mg/kg	0.0014	0.00041	1
Xylenes, Total	ND		mg/kg	0.0014	0.00041	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.00074	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0011	J	mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03 Date Collected: 01/17/22 11:25
Client ID: PB-666-08 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/18/22 13:31
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	0.0051		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	0.00083	J	mg/kg	0.0016	0.00022	1
p/m-Xylene	0.0055		mg/kg	0.0032	0.00089	1
o-Xylene	0.0042		mg/kg	0.0016	0.00046	1
Xylenes, Total	0.0097		mg/kg	0.0016	0.00046	1
Isopropylbenzene	0.00058	J	mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.0043		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0065		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04 Date Collected: 01/17/22 11:35
Client ID: PB-666-09 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/18/22 13:54
Analyst: JC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00030	1
Benzene	0.0020		mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	0.0012	J	mg/kg	0.0029	0.00082	1
o-Xylene	0.00053	J	mg/kg	0.0015	0.00043	1
Xylenes, Total	0.0017	J	mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.00020	J	mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00044	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.00089	J	mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	126		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05 Date Collected: 01/17/22 11:45
Client ID: PB-666-10 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/18/22 14:17
Analyst: JC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.0017		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00047	1
Toluene	0.0038		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	ND		mg/kg	0.0018	0.00026	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00054	1
Xylenes, Total	ND		mg/kg	0.0018	0.00054	1
Isopropylbenzene	0.00051	J	mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06 Date Collected: 01/17/22 12:00
Client ID: PB-666-13 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/20/22 15:38
Analyst: AJK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.0034		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.0015	J	mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/18/22 12:46
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03-05 Batch: WG1595759-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/20/22 07:29
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,06 Batch: WG1596408-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03-05 Batch: WG1595759-3 WG1595759-4								
Methyl tert butyl ether	91		88		66-130	3		30
Benzene	84		84		70-130	0		30
1,2-Dichloroethane	90		92		70-130	2		30
Toluene	85		82		70-130	4		30
1,2-Dibromoethane	96		90		70-130	6		30
Ethylbenzene	87		86		70-130	1		30
p/m-Xylene	89		88		70-130	1		30
o-Xylene	91		90		70-130	1		30
Isopropylbenzene	88		85		70-130	3		30
1,3,5-Trimethylbenzene	88		85		70-130	3		30
1,2,4-Trimethylbenzene	87		84		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	113		115		70-130
Toluene-d8	107		105		70-130
4-Bromofluorobenzene	106		103		70-130
Dibromofluoromethane	106		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,06 Batch: WG1596408-3 WG1596408-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	91		92		70-130	1		30
1,2-Dichloroethane	96		95		70-130	1		30
Toluene	90		92		70-130	2		30
1,2-Dibromoethane	87		85		70-130	2		30
Ethylbenzene	92		93		70-130	1		30
p/m-Xylene	93		94		70-130	1		30
o-Xylene	93		94		70-130	1		30
Isopropylbenzene	94		96		70-130	2		30
1,3,5-Trimethylbenzene	93		95		70-130	2		30
1,2,4-Trimethylbenzene	94		95		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	102		101		70-130
Dibromofluoromethane	100		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02
Client ID: PB-666-05
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:10
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 18:47
Analyst: WR
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.64	0.078	1
Fluorene	ND		mg/kg	0.64	0.063	1
Phenanthrene	0.099	J	mg/kg	0.39	0.078	1
Anthracene	ND		mg/kg	0.39	0.12	1
Pyrene	0.55		mg/kg	0.39	0.064	1
Benzo(a)anthracene	0.40		mg/kg	0.39	0.073	1
Chrysene	0.22	J	mg/kg	0.39	0.067	1
Benzo(b)fluoranthene	0.40		mg/kg	0.39	0.11	1
Benzo(a)pyrene	0.35	J	mg/kg	0.52	0.16	1
Benzo(ghi)perylene	0.21	J	mg/kg	0.52	0.076	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	52		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03
Client ID: PB-666-08
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:25
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 19:11
Analyst: WR
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.71	0.086	1
Fluorene	ND		mg/kg	0.71	0.069	1
Phenanthrene	ND		mg/kg	0.43	0.086	1
Anthracene	ND		mg/kg	0.43	0.14	1
Pyrene	ND		mg/kg	0.43	0.070	1
Benzo(a)anthracene	ND		mg/kg	0.43	0.080	1
Chrysene	ND		mg/kg	0.43	0.074	1
Benzo(b)fluoranthene	ND		mg/kg	0.43	0.12	1
Benzo(a)pyrene	ND		mg/kg	0.57	0.17	1
Benzo(ghi)perylene	ND		mg/kg	0.57	0.084	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04
Client ID: PB-666-09
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:35
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 19:36
Analyst: WR
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.23	0.028	1
Fluorene	ND		mg/kg	0.23	0.022	1
Phenanthrene	ND		mg/kg	0.14	0.028	1
Anthracene	ND		mg/kg	0.14	0.045	1
Pyrene	ND		mg/kg	0.14	0.023	1
Benzo(a)anthracene	ND		mg/kg	0.14	0.026	1
Chrysene	ND		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	ND		mg/kg	0.14	0.039	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.057	1
Benzo(ghi)perylene	ND		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05
Client ID: PB-666-10
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:45
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 20:00
Analyst: WR
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.66	0.080	1
Fluorene	ND		mg/kg	0.66	0.064	1
Phenanthrene	ND		mg/kg	0.40	0.080	1
Anthracene	ND		mg/kg	0.40	0.13	1
Pyrene	ND		mg/kg	0.40	0.066	1
Benzo(a)anthracene	ND		mg/kg	0.40	0.074	1
Chrysene	ND		mg/kg	0.40	0.069	1
Benzo(b)fluoranthene	ND		mg/kg	0.40	0.11	1
Benzo(a)pyrene	ND		mg/kg	0.53	0.16	1
Benzo(ghi)perylene	ND		mg/kg	0.53	0.078	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06
Client ID: PB-666-13
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 12:00
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 20:25
Analyst: WR
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.69	0.084	1
Fluorene	ND		mg/kg	0.69	0.067	1
Phenanthrene	ND		mg/kg	0.41	0.084	1
Anthracene	ND		mg/kg	0.41	0.13	1
Pyrene	0.52		mg/kg	0.41	0.068	1
Benzo(a)anthracene	0.30	J	mg/kg	0.41	0.077	1
Chrysene	0.28	J	mg/kg	0.41	0.071	1
Benzo(b)fluoranthene	0.91		mg/kg	0.41	0.12	1
Benzo(a)pyrene	0.57		mg/kg	0.55	0.17	1
Benzo(ghi)perylene	1.3		mg/kg	0.55	0.081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/19/22 10:21
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-06 Batch: WG1595353-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	68		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-06 Batch: WG1595353-2 WG1595353-3								
Naphthalene	87		68		40-140	25		50
Fluorene	90		73		40-140	21		50
Phenanthrene	88		71		40-140	21		50
Anthracene	88		70		40-140	23		50
Pyrene	88		72		35-142	20		50
Benzo(a)anthracene	94		78		40-140	19		50
Chrysene	88		74		40-140	17		50
Benzo(b)fluoranthene	93		78		40-140	18		50
Benzo(a)pyrene	89		74		40-140	18		50
Benzo(ghi)perylene	101		83		40-140	20		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	83		69		23-120
2-Fluorobiphenyl	82		70		30-120
4-Terphenyl-d14	86		73		18-120

METALS

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-01 Date Collected: 01/17/22 11:00

Client ID: PB-663-15-14.5-15.0 Date Received: 01/17/22

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	50.6		mg/kg	3.35	0.180	1	01/19/22 07:00	01/19/22 13:06	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02
Client ID: PB-666-05
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 11:10
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	54.8		mg/kg	2.53	0.136	1	01/19/22 07:00	01/19/22 13:12	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03
Client ID: PB-666-08
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 11:25
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	258		mg/kg	2.83	0.152	1	01/19/22 07:00	01/19/22 13:16	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04 Date Collected: 01/17/22 11:35

Client ID: PB-666-09 Date Received: 01/17/22

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	9.66		mg/kg	2.69	0.144	1	01/19/22 07:00	01/19/22 13:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05
Client ID: PB-666-10
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 11:45
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	9.14		mg/kg	2.71	0.146	1	01/19/22 07:00	01/19/22 13:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06
Client ID: PB-666-13
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 12:00
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	176		mg/kg	2.75	0.147	1	01/19/22 07:00	01/19/22 13:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG1595270-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	01/19/22 07:00	01/19/22 10:41	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1595270-2 SRM Lot Number: D113-540								
Lead, Total	85		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1595270-3 QC Sample: L2202783-06 Client ID: MS Sample												
Lead, Total	4.41	42.1	35.6	**74**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1595270-4 QC Sample: L2202783-06 Client ID: DUP Sample						
Lead, Total	4.41	4.36	mg/kg	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-01
Client ID: PB-663-15-14.5-15.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:00
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.6		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02
Client ID: PB-666-05
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:10
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.0		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03
Client ID: PB-666-08
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:25
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04
Client ID: PB-666-09
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 01/17/22 11:35
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.5		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05
Client ID: PB-666-10
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:45
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.5		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06
Client ID: PB-666-13
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 12:00
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.5		%	0.100	NA	1	-	01/18/22 09:33	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1595057-1 QC Sample: L2202565-01 Client ID: PB-663-15-14.5-15.0						
Solids, Total	58.6	58.3	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 06 QC Batch ID: WG1595059-1 QC Sample: L2202591-01 Client ID: DUP Sample						
Solids, Total	70.6	67.5	%	4		20

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202565-01A	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-01B	Glass 60ml unpreserved split	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-02A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2202565-02B	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-02C	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-02D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-02F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2202565-03A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2202565-03B	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-03C	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-03D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-03F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2202565-04A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2202565-04B	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-04C	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-04D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-04F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2202565-05A	Vial MeOH preserved	B	NA		3.1	Y	Absent		PA-8260HLW(14)
L2202565-05B	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202565-05C	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-05D	Plastic 120ml unpreserved	B	NA		3.1	Y	Absent		TS(7)
L2202565-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.1	Y	Absent		PB-TI(180)
L2202565-05F	Glass 120ml/4oz unpreserved	B	NA		3.1	Y	Absent		PA-PAH(14)
L2202565-06A	Vial MeOH preserved	B	NA		3.1	Y	Absent		PA-8260HLW(14)
L2202565-06B	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-06C	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-06D	Plastic 120ml unpreserved	B	NA		3.1	Y	Absent		TS(7)
L2202565-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.1	Y	Absent		PB-TI(180)
L2202565-06F	Glass 120ml/4oz unpreserved	B	NA		3.1	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2202565

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 01/18/22

ALPHA Job #: L2202565

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☑ Rush (ONLY IF PRE-APPROVED)
4-DAY TAT
Due Date: Time:

Report Information – Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist (see attached for compounds) Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP Shortlist 1-5 (see attached)	PADEP Shortlist 1 & 2 (see attached)	PADEP Shortlist 4 (see attached)	PADEP Shortlist 3-5 (see attached)	PADEP Shortlist 5 (see attached)	PADEP Shortlist 6 (see attached)	pH	Benzene	Cumene	Tetraethylene Glycol	VOC portion of PADEP Shortlist	LEAD	Sample Specific Comments	TOTAL # BOTTLES
02565-01	PB-663-15-14.5-15.0	1/17	1100	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	ONLY LEAD	1
-02	PB-666-05		1110	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-03	PB-666-08		1125	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-04	PB-666-09		1135	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-05	PB-666-10		1145	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-06	PB-666-13		1200	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-07						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
Preservative	F	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	1/17 1538	STN AM	1/17/22 15:36
	1/17/22 1800		
	1-9-2100		1/18/22 0215
	1/19/22 0215		1/18/22 0215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(A-R) (rev. 5-JAN-12)

Appendix C

Select Figures from RIRs

Figure No.
2-5

Title
STRATIGRAPHIC PROFILE
LOCATION MAP

Client/Project
PHILADELPHIA REFINERY OPERATIONS, A SERIES OF
EVERGREEN RESOURCES GROUP, LLC
PHILADELPHIA REFINING COMPLEX
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Project Location
City of Philadelphia,
Philadelphia County,
Pennsylvania

213402435
Prepared by GWC on 9/1/2017
Technical Review by ADK on 9/21/2017
Independent Review by JKD on 10/11/2017

0 1,000 2,000 Feet
1:12,000 (At original document size of 11x17)

N

LEGEND
- WELL
- HISTORIC WELL
- SOIL/TEST BORING
- AREA OF INTEREST (AOI) BOUNDARY
- AOI 8 BOUNDARY

STRATIGRAPHIC PROFILE
- H- H'
- I - I'
- J - J'
- K - K'
- L - L'

Tank Group 01

AOI 8
AOI 10
AOI 2
AOI 1

Note: Tank Group 01 boundaries/notation were added by Terraphase and were not on the original figures.



Notes
1. Vertical Datum: North American Vertical Datum of 1988 (NAVD 88)
2. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
3. Source: Stantec
4. Service Layer Credits: © 2017 DigitalGlobe ©CNES (2017) Distribution Airbus DS © 2017 Microsoft Corporation
   Copyright:© 2013 National Geographic Society, i-cubed
   Microsoft product screen shot(s) reprinted with permission from Microsoft

Stantec

EVERGREEN

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Tank Group 01

I NORTH — I' SOUTH

PROPANE TERMINAL | AOI-8 - PES NORTH YARD BALL FIELD AREA | AOI-8 | LAND TREATMENT UNIT | AOI-8 | CSX PROPERTY | AOI-8 | NORTH YARD CRUDE RAIL | AOI-8

N-99, N-100, N-2, N-154, N-5, N-69, N-70, N-83, N-109, N-114, N-39, N-131, N-55, N-149D

FILL
PLEISTOCENE ALLUVIUM
UPPER CLAY UNIT
UPPER SAND UNIT
MIDDLE CLAY UNIT
MIDDLE SAND UNIT?
LOWER SAND UNIT
BEDROCK
MIDDLE CLAY AND SAND UNITS?
HOLOCENE ALLUVIUM
Schuylkill River
PLEISTOCENE ALLUVIUM

APPROXIMATE LOCATION AND SIZE OF THE MIFFLIN STREET SEWER

APPROXIMATE LOCATION AND DIAMETER OF THE JACKSON STREET SEWER

Elevation (ft NAVD88)

Distance Along Baseline (ft)

Legend:
- May 2017 Perched Water Elevation
- May 2017 Water-Table Elevation
- May 2017 Water-Level Elevation (Lower Aquifer)
- May 2017 Interpolated Water-Table Surface
- May 2017 Interpolated Lower Aquifer Surface
- Inferred Geologic Contact
- Inferred Lithologic Contact
- Interpolated Bedrock Surface

Note: Tank Group 01 boundaries/notation were added by Terraphase and were not on the original figures.

Note: Tank Group 03 boundaries/notation were added by Terraphase and were not on the original figures.

Stantec

STRATIGRAPHIC PROFILE INTERPRETED BY ANDREW D. KLINGBEIL, PENNSYLVANIA PROFESSIONAL GEOLOGIST PG005029

GENERALIZED LITHOLOGY GRAPHICS

- Apparent Fill
- Sandy Gravel
- Gravelly Sand
- Sand (incl. trace to little silt/clay/gravel)
- "Muddy" Sand
- Organic-Rich "Mud" (silt/clay, incl. some organic material)
- "Mud" (silt/clay, incl. trace to little sand/gravel)
- Bedrock (incl. saprolite where indicated)
- Peat

Notes:

1. Land surface profile obtained from a 2015 Light Detection and Ranging (LiDAR) elevation model available from the United States Geological Survey (USGS).
2. Schuylkill River bathymetry obtained from NOAA National Centers for Environmental Information and is based on a 1/9 arc second, 2014 elevation model referenced to NAVD 88.
3. Water-table, lower aquifer, and bedrock surfaces were interpolated from selected May 2017 gauging and stratigraphic "pick" data using block kriging (note block kriging is not an exact interpolator). Not all wells were gauged during May 2017. Screen lengths estimated for wells N-2 and N-5.
4. Stantec generalized lithologic data from available borehole logs into 9 categories as indicated for interpretive purposes. "Mud" is utilized in these profiles to generally represent clay/silt mixtures, or clay and silt-rich sandy sediments.
5. Correlation between lithologies and, where applicable, geologic units is based primarily on the straight-line method with additional stratigraphic interpretation where subsurface data is limited. Actual conditions between boreholes may vary from what is shown on this profile.
6. Sewer data obtained from the Philadelphia Water Department Water Transport Records.
7. North American Vertical Datum of 1988 = NAVD 88
8. Vertical Exaggeration ~ 25 X

Figure 2-7. Stratigraphic Profile I - I'

Philadelphia Refinery Operations
a series of Evergreen Resources Group, LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Project Number: 213402435

Tank Group 01

AOI 8

AOI 8

AOI 10

AOI 2

AOI 1

VERIZON SDWC PROPERTY

LAND TREATMENT UNIT

BELMONT TERMINAL

PHILADELPHIA GAS WORKS (PGW) PASSYUNK FACILITY

Note: Tank Group 01 boundaries/notation were added by Terraphase and were not on the original figures.



LEGEND

- MAY 2017 WELL GAUGING DATA – WATER-TABLE (UNCONFINED) AQUIFER
- MAY 2017 WATER-TABLE ELEVATION (FEET NAVD 88)
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- APPROXIMATE LOCATION OF RAMBO CREEK PROCESS SEWER
- LIMITS OF WATER-TABLE WELL CONTROL
- PHILADELPHIA GAS WORKS (PGW) PASSYUNK FACILITY
- VERIZON SOUTH DISTRICT WORK CENTER (SDWC) PROPERTY
- AREA OF INTEREST (AOI) BOUNDARY
- AOI 8 BOUNDARY
- BELMONT TERMINAL
- 3.35' GROUNDWATER ELEVATION (FEET NAVD 88)
- NM WELL WAS NOT MEASURED

0 250 500 Feet

1:3,300 (At original document size of 24x36)

N

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet North American Vertical Datum of 1988 (NAVD 88)
2. Sources: Stantec and Philadelphia Gas Works (PGW)
3. Callouts denote groundwater elevation in feet. Depth to groundwater was measured in each well to the nearest one-hundredth of a foot using an interface probe.
4. Contour Interval = 1 foot
5. Groundwater elevation data was interpolated using block kriging with a linear variogram model in Surfer.
6. Aerial & Topo © 2017 DigitalGlobe ©CNES (2017) Distribution Airbus DS © 2017 Microsoft Corporation
   Copyright:© 2013 National Geographic Society, i-cubed
   Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

Figure No.

5-5

Title

MAY 2017 WATER-TABLE ELEVATION

Client/Project

PHILADELPHIA REFINERY OPERATIONS, A SERIES OF
EVERGREEN RESOURCES GROUP, LLC
PHILADELPHIA REFINING COMPLEX
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Project Location

City of Philadelphia,
Philadelphia County,
Pennsylvania

213402435

Prepared by GWC on 9/29/2017
Technical Review by ADK on 10/2/2017
Independent Review by JKD on 10/11/2017

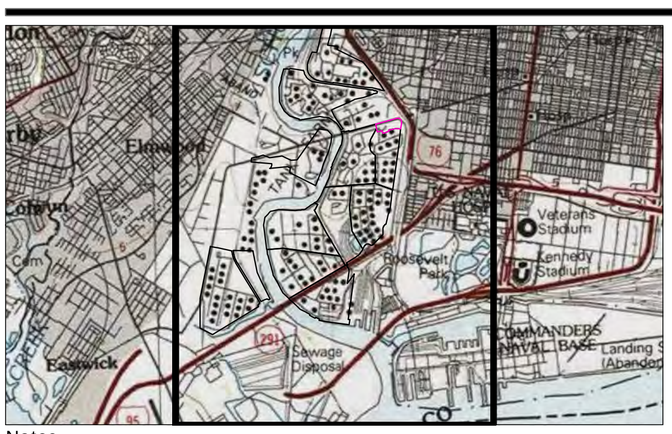
Stantec

EVERGREEN

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Tank Group 01

Note: Tank Group 01 boundaries/notation were added by Terraphase and were not on the original figures.



Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet North American Vertical Datum of 1988 (NAVD 88)
2. Sources: Stantec, Philadelphia Gas Works (PGW), and Defense Logistics Agency (DLA)
3. Depth to groundwater and LNAPL, where present, were measured in each well to the nearest one-hundredth of a foot using an interface probe.
4. FT NAVD88 = feet referenced to the North American Vertical Datum of 1988
5. Groundwater elevation data was interpolated using point kriging with a linear variogram model in Surfer to produce a surface model. The model is interpreted to be a reasonable approximation of the water-table elevation within the limits of the available well data.
6. Aerial & Topo Copyright:© 2013 National Geographic Society, i-cubed © 2018 Microsoft Corporation © 2018 DigitalGlobe ©CNES (2018) Distribution Airbus DS Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

LEGEND

- WELL UTILIZED FOR THE JUNE 2018 WATER-TABLE ELEVATION SURFACE
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- APPROXIMATE LOCATION OF RAMBO CREEK STORM SEWER
- PHILADELPHIA GAS WORKS (PGW) PASSYUNK FACILITY
- VERIZON SOUTH DISTRICT WORK CENTER (SDWC) PROPERTY
- AREA OF INTEREST (AOI) BOUNDARY
- BELMONT TERMINAL
- APPROXIMATE LIMITS OF WATER-TABLE WELL CONTROL

JUNE 2018 WATER-TABLE ELEVATION

FT NAVD88

- 14 - 16
- 12 - 14
- 10 - 12
- 8 - 10
- 6 - 8
- 4 - 6
- 2 - 4
- 0 - 2
- -2 - 0
- -4 - -2
- -6 - -4
- -8 - -6
- -10 - -8

0 500 1,000 1,500 Feet

1:8,100 (At original document size of 24x36)

N

Figure No.

2-3-29

Title

JUNE 2018 WATER-TABLE ELEVATION

Client/Project

PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Project Location

City of Philadelphia, Philadelphia County, Pennsylvania

213402454

Prepared by ADK on 8/14/2018
Technical Review by ANP on 9/20/2018
Independent Review by JLM on 10/19/2018

Stantec

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Appendix D

Soil Boring Logs, Monitoring Well Installation Logs, and Groundwater Stabilization Logs

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-663-01
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB663-01		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-02

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB663-02		0.0	0.0-5.0' FILL with SAND and GRAVEL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-03

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.0-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND and GRAVEL	
2					
3	PB663-03		3.8		
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-04

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB663-04		0.0	0.0-5.0' FILL with SAND and GRAVEL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-05

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND and GRAVEL	
2					
3					
4	PB663-05		0.5		Oil sheen
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-06

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.5-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND and GRAVEL	
2					
3	PB663-06		3.8		
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-663-07
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB663-07		0.0	0.0-5.0' FILL with SAND and GRAVEL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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15					
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17					
18					
19					
20					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-663-08
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND	
2					
3					
4	PB663-08		0.2		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-09

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4	PB663-09		0.3		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-10

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB663-10		0.0	0.0-5.0' Fill with some CLAY	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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21					
22					
23					
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25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-663-11
		Page 1 of 1
Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.5-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0-1.5' GRAVEL	
2	PB663-11		2.4	1.5-2.0' FILL with SAND	
3				2.0-5.0' SAND	
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-12

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Black GRAVEL with FILL	
2					
3					
4	PB663-12		0.3		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-13

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB663-13		0.0	0.0-5.0' FILL with SAND and GRAVEL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
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12					
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18					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-14

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.0-1.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND and GRAVEL	
2	PB663-14		9.4		
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-17

Page 1 of 1

Client: PESRM		Date Start: 1/07/2022
Project Name: PES Refinery		Date Finish: 1/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 14.5-15.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0-6.5' FILL (see PB-663-15 11/30/2021)	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15	PB663-15		15.2	14.0-15.0' Gray SILT with some SAND	
16				**END OF BORING (15 ft.)**	
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-663-15
		Page 1 of 1
Client: PESRM		Date Start: 11/30/2021
Project Name: PES Refinery		Date Finish: 11/30/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 3.0-3.5', 6.0-6.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB663-15		0.0	0-6.5' FILL	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
	PB663-15		0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6			0.0		
	PB663-15		0.0		
7				**END OF BORING (6.5 ft.)**	
8					
9					
10					
11					
12					
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14					
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16					
17					
18					
19					
20					
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23					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-663-16

Page 1 of 1

Client: PESRM		Date Start: 12/01/2021
Project Name: PES Refinery		Date Finish: 12/01/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5', 14.5-15.0	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB663-16		0.0	0-15.0' Black FILL with SAND	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6			0.0		
	PB663-16		0.0		
7			0.0		
			0.0		
8			0.0		
			0.0		
9			0.0		
			0.0		
10			0.0		
			0.0		
11			0.0		
			0.0		
12			0.0		
			0.0		
13			0.0		
			0.0		
14			0.0		
			0.0		
15	PB663-16		0.0		
				END OF BORING (15.0 ft.)	
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-663-17
		Page 1 of 1
Client: PESRM		Date Start: 12/01/2021
Project Name: PES Refinery		Date Finish: 12/01/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5"	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB663-17		0.0	0-6.5' FILL with SAND	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6			0.0		
	PB663-17		0.0		
7				**END OF BORING (6.5 ft.)**	
8					
9					
10					
11					
12					
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14					
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19					
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22					
23					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-01

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Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				1.0-3.5' Dark brown SAND	
2					
3					
4	PB666-01		0.4	3.5-4' Brown SAND with GRAVEL	
5				4.0-5' FILL with brown SAND	
6				**END OF BORING (5 ft.)**	
7					
8					
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10					
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22					
23					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-02

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.0-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-2' FILL with ROCK and GRAVEL	
2					
3	PB666-02		12.6	2.0-2.5' FILL with GRAVEL	
4				3.5-4' Brown SAND with GRAVEL	
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
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16					
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18					
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20					
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22					
23					
24					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-03

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.0-1.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-03			0.0-5.0' FILL	
2			0.5		
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
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16					
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20					
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22					
23					
24					
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Soil Boring Log

Boring No.: PB-666-04

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.5-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND	
2	PB666-04		4.9		
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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23					
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Soil Boring Log

Boring No.: PB-666-05

Page 1 of 1

Client: PESRM		Date Start: 1/17/2022
Project Name: PES Refinery		Date Finish: 1/17/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Sandy FILL with SILT and GRAVEL	
2					
3					
4	PB666-05		7.2		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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19					
20					
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23					
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Soil Boring Log

Boring No.: PB-666-06

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4	PB666-06		11.7		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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18					
19					
20					
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23					
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Soil Boring Log

Boring No.: PB-666-07

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with Sand and GRAVEL	
2					
3					
4	PB666-11		1.6		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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21					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-08
		Page 1 of 1
Client: PESRM		Date Start: 1/17/2022
Project Name: PES Refinery		Date Finish: 1/17/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Gray SILT	
2					
3					
4					
5	PB666-08		5.1		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-09
		Page 1 of 1
Client: PESRM		Date Start: 1/17/2022
Project Name: PES Refinery		Date Finish: 1/17/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Fine sandy FILL with GRAVEL	
2					
3					
4	PB666-09		12.8		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-10
		Page 1 of 1
Client: PESRM		Date Start: 1/17/2022
Project Name: PES Refinery		Date Finish: 1/17/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Fine sandy FILL with GRAVEL	
2					
3					
4	PB666-10		9.3		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
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Soil Boring Log

Boring No.: PB-666-11

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Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with SAND and GRAVEL	
2					
3					
4	PB666-11		1.6		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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20					
21					
22					
23					
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Soil Boring Log

Boring No.: PB-666-11R

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Client: PESRM		Date Start: 11/29/2021
Project Name: PES Refinery		Date Finish: 11/29/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5', 14.5-15.0	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-11R		3.1	0-6.0' Brown sandy SILT	
2					
3					
4					
5					
6					
7	PB666-11R		0.0	0-14.0' FILL	
8					
9					
10					
11					
12					
13					
14					
15	PB666-11R		15.2	14.0-15.0' Brown/gray SILT	
16				**END OF BORING (15.0 ft.)**	
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-12

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.5-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3	PB666-12		165.4		
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-12R

Page 1 of 1

Client: PESRM		Date Start: 11/29/2021
Project Name: PES Refinery		Date Finish: 11/29/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5', 14.5-15.0	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-12R		2.5	0-6.0' Brown fine SAND with SILT	
2					
3					
4					
5					
6					
7	PB666-12R		14.7	0-14.0' Dark brown fine SAND with SILT	
8					
9					
10					
11					
12					
13					
14					
15	PB666-12R		129.7	14.0-15.0' Dark brown coarse SAND	
16				**END OF BORING (15.0 ft.)**	
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-13
		Page 1 of 1
Client: PESRM		Date Start: 1/17/2022
Project Name: PES Refinery		Date Finish: 1/17/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Fine sandy FILL with GRAVEL	
2					
3					
4					
5	PB666-13		22.3		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-14
		Page 1 of 1
Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4					
5	PB666-14		2.6		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-15
		Page 1 of 1
Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-2.5' FILL with brown SAND	
2					
3				2.5-5.0' Sandy SILT	
4	PB666-15		1.4		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

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Soil Boring Log

Boring No.: PB-666-16

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Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4	PB666-16		0.9		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

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Soil Boring Log

Boring No.: PB-666-17

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Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4	PB666-17		1.2		Oil stain
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

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Soil Boring Log

Boring No.: PB-666-18

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-18		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

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Soil Boring Log

Boring No.: PB-666-19

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-19		0.0	0.0-3' FILL	
			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0	3.0-4' Gray CLAY with red SAND	
			0.0		
5			0.0	4.0-5' FILL	
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-20

Page 1 of 1

Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5' FILL	
2					
3					
4	PB666-20		14.6		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-20R

Page 1 of 1

Client: PESRM		Date Start: 12/01/2021
Project Name: PES Refinery		Date Finish: 12/01/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5', 14.5-15.0	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-20R		0.0	0-14.0' Black FILL with SAND	
2					
3					
4					
5					
6					
7	PB666-20R		0.0		
8					
9					
10					
11					
12					
13					
14					
15	PB666-20R		17.8	14.0-15.0' Brown/gray SILT and SAND	
16				**END OF BORING (15.0 ft.)**	
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-21
		Page 1 of 1
Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5' FILL	
2					
3					
4					
5	PB666-21		1.2		Oil stain
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-21R

Page 1 of 1

Client: PESRM		Date Start: 12/01/2021
Project Name: PES Refinery		Date Finish: 12/01/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5', 14.5-15.0	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-21R		0.0	0-6.0' sandy FILL with brown SILT	
2					
3					
4					
5					
6					
7	PB666-21R		20.1	6.0-14.0' Black SILT with gravel	
8					
9					
10					
11					
12					
13					
14					
15	PB666-21R		45.2	14.0-15.0' Brown/gray SILT	
16				**END OF BORING (15.0 ft.)**	
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-666-22
		Page 1 of 1
Client: PESRM		Date Start: 5/18/2021
Project Name: PES Refinery		Date Finish: 5/18/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5' FILL	
2					
3					
4					
5	PB666-22		1.2		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-666-23
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4					
5	PB666-23		1.7		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-24

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Sandy FILL	
2					
3					
4	PB666-24		1174		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-666-25
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-25		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-26

Page 1 of 1

Client: PESRM		Date Start: 11/30/2021
Project Name: PES Refinery		Date Finish: 11/30/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 3.5-4.0', 6.0-6.5"	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB666-26		0.0	0-3.5' Brown course SAND	
1					
2					
3					
4	PB668-26		12.5	3.5-6.0' Brown SAND with SILT	
5					
6					
	PB668-26		30.2	6.0-6.5' Black SILT with SAND	
7				**END OF BORING (6.5 ft.)**	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-666-27
		Page 1 of 1
Client: PESRM		Date Start: 11/30/2021
Project Name: PES Refinery		Date Finish: 11/30/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 3.5-4.0', 6.0-6.5"	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB666-27		0.0	0-6.0' Fine brown SAND with SILT	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4	PB668-27		0.0		
			0.0		
5			0.0		
			0.0		
6			0.0		
	PB668-27		0.0	6.0-6.5' Fine brown SAND with some GRAVEL	
7				**END OF BORING (6.5 ft.)**	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-666-28

Page 1 of 1

Client: PESRM		Date Start: 11/30/2021
Project Name: PES Refinery		Date Finish: 11/30/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 2.5-3.0', 6.0-6.5"	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB666-28		0.0	0-6.5' Brown medium SAND with SILT	
1			0.0		
			0.0		
2			0.0		
			0.0		
3	PB666-28		0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6			0.0		
	PB666-28		0.0		
7				**END OF BORING (6.5 ft.)**	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-666-29
		Page 1 of 1
Client: PESRM		Date Start: 12/01/2021
Project Name: PES Refinery		Date Finish: 12/01/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 3.5-4.0', 6.0-6.5"	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB666-26		14.7	0-6.5' Brown sandy SILT	
2					
3					
4	PB666-26		17.9		
5					
6					
	PB666-29		9.4		
7				**END OF BORING (6.5 ft.)**	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-668-01
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB668-01		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-668-02
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB668-02		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-668-03
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.5-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-2.0'FILL and SAND	
2	PB668-03		14.8		
3				2.0-5.0' Gray CLAY	
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-668-04

Page 1 of 1

Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB668-04		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-668-05
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB668-05		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-668-06

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Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.5-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with brown SAND	
2					
3	PB668-06		48.7		
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-668-06R

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Client: PESRM		Date Start: 11/30/2021
Project Name: PES Refinery		Date Finish: 11/30/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 6.0-6.5', 14.5-15.0	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB668-06R		0.0	0-14.0' Sandy FILL	
2					
3					
4					
5					
6					
7	PB668-06R		22.8		
8					
9					
10					
11					
12					
13					
14					
15	PB668-06R		13.6	14.0-15.0' Brown/black SILT	
16				**END OF BORING (15.0 ft.)**	
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-668-07
		Page 1 of 1
Client: PESRM		Date Start: 5/19/2021
Project Name: PES Refinery		Date Finish: 5/19/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with sandy CLAY	
2					
3					
4	PB668-07		3.1		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-668-08

Page 1 of 1

Client: PESRM		Date Start: 11/30/2021
Project Name: PES Refinery		Date Finish: 11/30/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 6.5'
Logged By: Tyler Short	Sample Interval: 0.0-0.5', 2.5-3.0', 6.0-6.5"	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
	PB668-08		0.0	0-6.5' Sandy FILL	
1			0.0		
			0.0		
2			0.0		
			0.0		
3	PB668-08		0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6			0.0		
	PB668-08		0.0		
7				**END OF BORING (6.5 ft.)**	
8					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-01
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-01		0.0	0.0-2.5' FILL with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' Brown sandy CLAY	
4			0.0		
			0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-02

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-02		0.0	0.0-2.5' Fill with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' Brown sandy CLAY	
4			0.0		
			0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-03

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-03		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-04
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-04		0.0	0.0-2.5' FILL with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' Brown sandy CLAY	
4			0.0		
			0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-05
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-05		0.0	0.0-2.5' FILL with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' Brown sandy CLAY	
4			0.1		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
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19					
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22					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-06
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-2.5' FILL with SAND	
2					
3				2.5-5.0' Brown sandy CLAY	
4					
5	PB672-06		7.4		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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14					
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18					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-07
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-07		0.0	0.0-2.5' FILL with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' SAND with some CLAY	
4			0.0		
			0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
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18					
19					
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21					
22					
23					
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25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-08
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-08		0.0	0.0-2.5' FILL with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' SAND with some GRAVEL	
4			0.0		
			0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-09
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-09		0.0	0.0-2.5' FILL with SAND	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0	2.5-5.0' SAND with some GRAVEL	
4			0.0		
			0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-10

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Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-10		0.0	0.0-2.5' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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10					
11					
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21					
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23					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-11

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4	PB672-11		30.4		
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
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19					
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21					
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23					
24					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-12
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4					
5	PB672-12		21.6		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-13
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL	
2					
3					
4					
5	PB672-13		25.1		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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12					
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16					
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18					
19					
20					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-14
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with sandy CLAY	
2					
3					
4					
5	PB672-14		6.8		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-15
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-15		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-16

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-16		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-17
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-17		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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14					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-18
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-18		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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14					
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16					
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22					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: PB-672-19
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	PB672-19		0.0	0.0-5.0' FILL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-20

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with sandy CLAY	
2					
3					
4					
5	PB672-20		1.9		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: PB-672-21
		Page 1 of 1
Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.0-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' FILL with sandy CLAY	
2					
3	PB672-21		3.4		
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-22

Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.0-1.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Brown SAND and SILT	
2	PB672-22		3.2		
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: PB-672-23

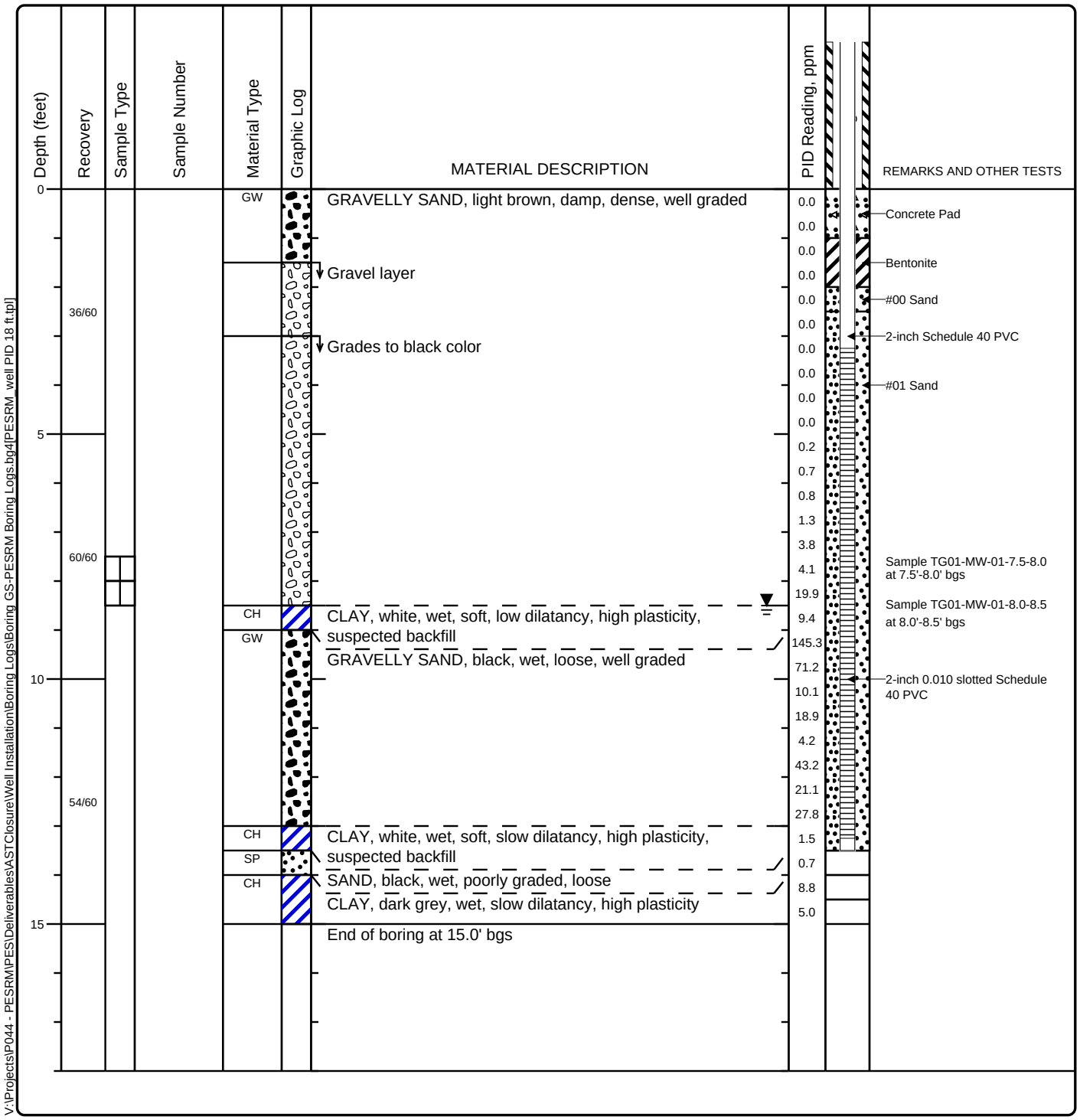
Page 1 of 1

Client: PESRM		Date Start: 5/20/2021
Project Name: PES Refinery		Date Finish: 5/20/2021
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.0-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1				0.0-5.0' Black SAND and FILL	
2					
3	PB672-23		0.2		
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Project: **PESRM AST Closure** Project Location: **3144 W. Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG01-MW-01 **Sheet 1 of 1**

Date(s) Drilled **1/5/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation **N/A**
Groundwater Level and Date Measured **8.5**	Sampling Method(s) **Grab**	Closest Tank **PB 662**
Borehole Backfill **Soil Cuttings**	Location	



V:\Projects\P044 - PESRM\PES\DeliverablesAASTClosure\Well Installation\Boring Logs\Boring GS-PESRM Boring Logs.bg4[PESRM_well PID 18 ft.tpl]

Project: **PESRM AST Closure**

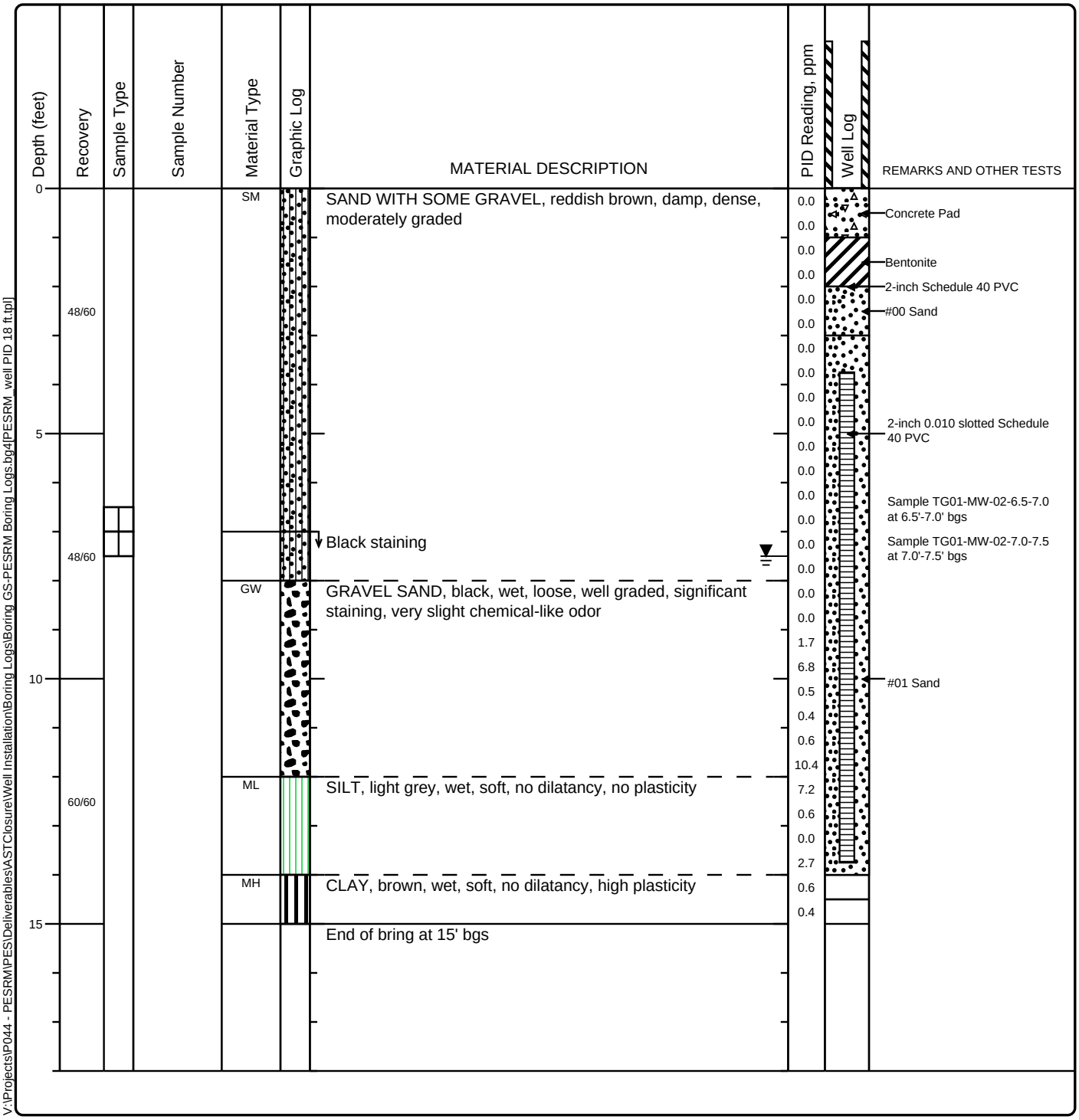
Project Location: **3144 W. Passyunk Ave**

Project Number: **P044.001.002**

Log of Boring TG01-MW-02

Sheet 1 of 1

Date(s) Drilled **1/4/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation **N/A**
Groundwater Level and Date Measured **7.5**	Sampling Method(s) **Grab**	Closest Tank **PB 664**
Borehole Backfill **Soil Cuttings**	Location	



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Project: **PESRM AST Closure**
Project Location: **3144 W. Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring TG01-MW-03

Sheet 1 of 1

Date(s) Drilled **1/4/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation **N/A**
Groundwater Level and Date Measured **9.0**	Sampling Method(s) **Grab**	Closest Tank **PB 66**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	Well Log	REMARKS AND OTHER TESTS
0				SM		SAND WITH SOME GRAVEL, brown, damp, well graded, dense	0.8		Concrete Pad
							1.3		
							3.0		Bentonite
							20.3		2-inch Schedule 40 PVC
	30/60						1.7		#00 Sand
							1.1		
							2.9		
						Grades to black color	1.1		
							0.8		
5							0.7		
							0.5		
						Grades to dark brown color, gravel become very fine, about 1/8" diameter, black and angular	7.3		2-inch 0.010 slotted Schedule 40 PVC
							24.9		
							21.4		
	48/60						15.7		
							36.7		Sample TG01-MW-03-7.5-8.0 at 7.5'-8.0' bgs
							34.3		
							17.2		Sample TG01-MW-03-8.5-9.0 at 8.5'-9.0' bgs
							48.9		
				GW		SANDY GRAVEL, wet, black, well graded, loose	134.4		
10				SP		SAND, wet, black, loose, poorly graded	36.9		#01 Sand
							36.3		
							30.0		
							19.4		
	48/60						28.4		
							288.1		
							272.1		
							371.9		
				CH		CLAY, dark grey, wet, soft, low dilatancy, high plasticity, chemical-like odor	224.4		
15							392.4		
						End of boring at 15.0' bgs			

V:\Projects\P044 - PESRM\PES\Deliverables\ASTClosure\Well Installation\Boring Logs\Boring GS-PESRM Boring Logs.bg4[PESRM_well PID 18 ft.tpl]

Project: **PESRM AST Closure**
Project Location: **3144 W. Passyunk Ave**
Project Number: **P044.001.002**

Key to Log of Boring
Sheet 1 of 1

1 Depth (feet)	2 Recovery	3 Sample Type	4 Sample Number	5 Material Type	6 Graphic Log	7 MATERIAL DESCRIPTION	8 PID Reading, ppm	9 Well Log	10 REMARKS AND OTHER TESTS

COLUMN DESCRIPTIONS

1. Depth (feet): Depth in feet below the ground surface.
2. Recovery : Percent Recovery
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample Number: Sample identification number.
5. Material Type: Type of material encountered.
6. Graphic Log: Graphic depiction of the subsurface material encountered.
7. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
8. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
9. Well Log: Graphical representation of well installed upon completion of drilling and sampling.
10. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

- Bentonite
- Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)
- Portland Cement Concrete
- Well graded GRAVEL (GW)
- Silty SAND (SM)
- Poorly graded SAND (SP)
- SILT, SILT w/SAND, SANDY SILT (MH)
- SILT, SILT w/SAND, SANDY SILT (ML)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Auger sampler
- Bulk Sample
- 3-inch-OD California w/ brass rings
- CME Sampler
- Grab Sample
- 2.5-inch-OD Modified California w/ brass liners
- Pitcher Sample
- 2-inch-OD unlined split spoon (SPT)
- Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting, AW)
- Minor change in material properties within a stratum
- Inferred/gradational contact between strata
- Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

V:\Projects\P044 - PESRM\PES\Deliverables\ASTClosure\Well Installation\Boring Logs\Boring GS-PESRM Boring Logs.bg4[PESRM_well PID 18 ft.tpl]

Figure B-1

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 01/06/2023 TIME 8:00
WELL INSTALLATION BEGAN:
DATE 01/06/2023 TIME 8:41
WELL COMPLETION FINISHED:
DATE 01/06/2023 TIME 10:02
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.5 bags (25 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 1 bag (50 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

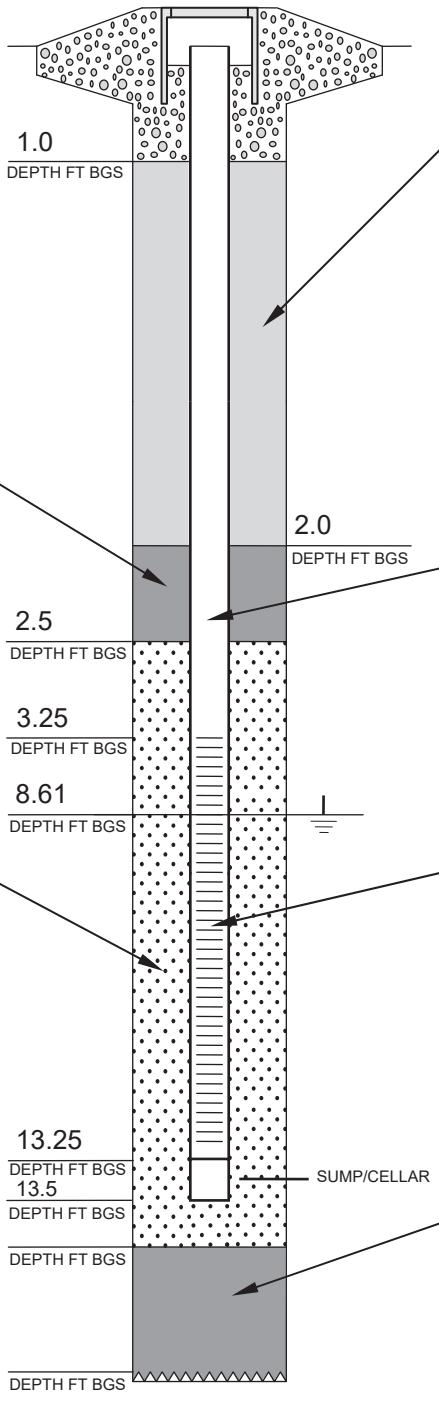
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG01-MW-01
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 13.5'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 1 bags (50 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 3.5'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 1/4/2023 TIME 12:15
WELL INSTALLATION BEGAN:
DATE 1/4/2023 TIME 12:45
WELL COMPLETION FINISHED:
DATE 1/4/2023 TIME 13:19
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.5 bags (25 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 1 bag (50 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

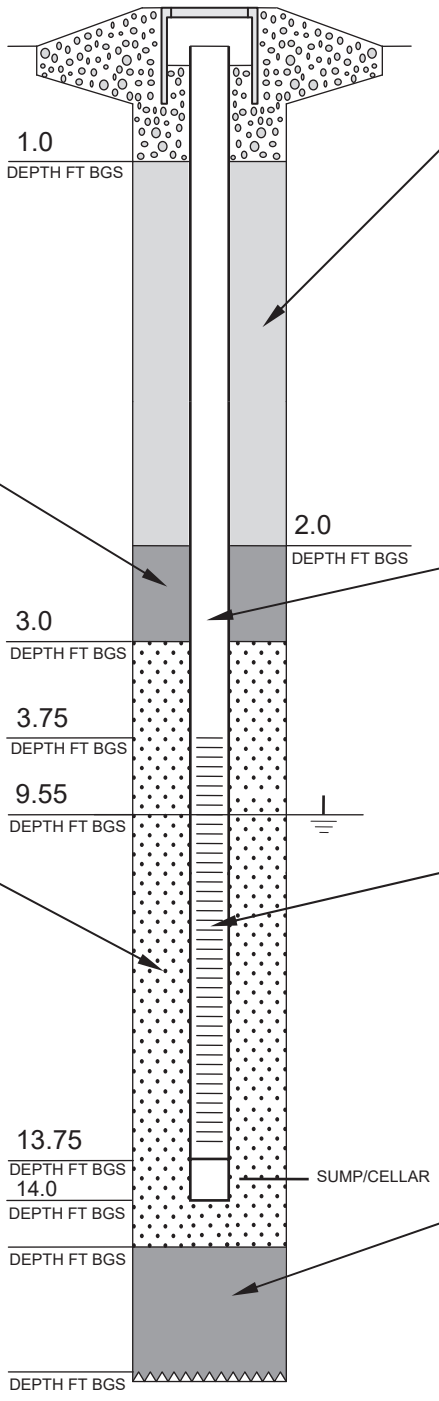
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG01-MW-02
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 14.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 1 bags (50 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 4.0'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 1/5/2023 TIME 9:02
WELL INSTALLATION BEGAN:
DATE 1/5/2023 TIME 9:28
WELL COMPLETION FINISHED:
DATE 1/5/2023 TIME 10:46
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.5 bags (25 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 1 bags (50 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

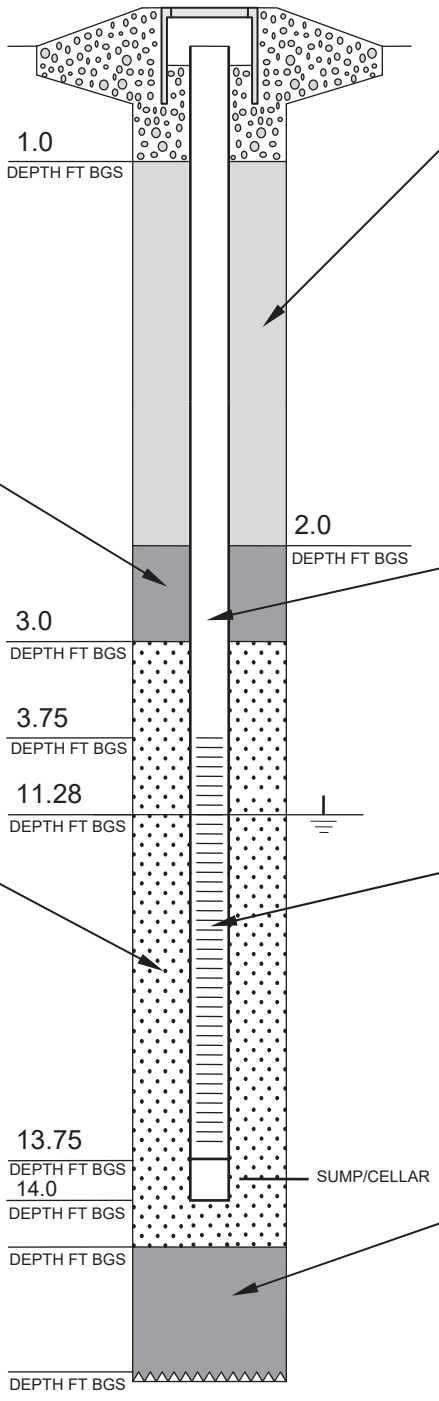
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG01-MW-03
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 14.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 1 bags (50 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 4.0'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG01-MW-01

Date:	01/25/2023	Casing Material:	PVC	Depth to Water (ft bmp):	8.61
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	13.5' bgs
Volume Units:	mL	Pump Intake (ft bmp)	12.73'	Water Column (ft)	4.89'
Purge Start Time:	11:30	Screen Interval (ft bmp):	13.5-3.0' bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/25/2023	COC:	
Sample Time:	12:15	Analysis:	Select VOCs, select SVOCs, lead
Sample ID:	TG01-MW-01-230125; TG01-MW-01-230125MS; TG01-MW-01230125MSD	Bottles:	
Duplicate Sample ID:		Odor:	foul odor
Duplicate Sample Time:	12:15	Remarks:	yellowish-green color

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
11:50	120	2400	9.59	12.61	11.81	3229	-332	0	7.2	
11:55	120	3000.0	9.61	12.66	11.93	3490	-362	0	7.0	
12:00	120	3600.0	9.66	12.55	11.97	3440	-377	0	6.1	
12:05	120	4200.0	9.69	12.56	11.97	3480	-389	0	5.8	
12:09	120	4680.0	9.71	12.57	12.02	3510	-395	0	5.2	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Stick up
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

terraphase engineering

Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG01-MW-02

Date:	01/26/2023	Casing Material:	PVC	Depth to Water (ft bmp):	8.93'
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	14.0' bgs
Volume Units:	mL	Pump Intake (ft bmp)	13	Water Column (ft)	5.07'
Purge Start Time:	08:15	Screen Interval (ft bmp):	13.75'-3.75' feet bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/26/2023	COC:	
Sample Time:	09:40	Analysis:	VOCs|SVOCs|Lead
Sample ID:	TG01-MW-02-230126	Bottles:	
Duplicate Sample ID:	TG01-MW-02-230126D	Odor:	
Duplicate Sample Time:	09:40	Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
08:50	120	4200	8.93	12.76	6.07	2640	-51	0.2	11.5	
08:55	120	4800.0	8.93	12.54	6.25	2640	-81	0	10.8	
09:00	120	5400.0	8.93	12.7	6.29	2630	-95	0	10.0	
09:05	120	6000.0	8.93	12.63	6.34	2630	-109	0	8.7	
09:10	120	6600.0	8.93	12.92	6.35	2630	-118	0	7.6	
09:15	120	7200.0	8.93	12.80	6.36	2630	-122	0	8.1	
09:20	120	7800.0	8.93	12.63	6.38	2630	-127	0	7.0	
09:25	120	8400.0	8.93	12.52	6.39	2630	-130	0	7.1	
09:30	120	9000.0	8.93	12.57	6.38	2630	-134	0	6.8	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Stick up
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG01-MW-03

Date:	01/25/2023	Casing Material:	PVC	Depth to Water (ft bmp):	11.23' bgs
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	14' bgs
Volume Units:	mL	Pump Intake (ft bmp)	13.5'	Water Column (ft)	2.76'
Purge Start Time:	13:01	Screen Interval (ft bmp):	13.75-3.75' bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/25/2023	COC:	
Sample Time:	14:10	Analysis:	Select VOCs, select SVOCs, lead
Sample ID:	TG01-MW-03-230125	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
13:30	130	13130	11.38	11.92	6.68	4160	-23	0.73	63.4	
13:35	130	13780.0	11.38	12.64	6.70	4100	-27	0.29	64.1	
13:40	130	14430.0	11.38	13.18	6.70	4090	-29	0.14	49.5	
13:45	130	15080.0	11.38	13.06	6.69	4080	-30	0.06	39.1	
13:50	130	15730.0	11.38	13.30	6.69	4070	-30	0.02	26.2	
13:51	130	15860.0	11.38	13.36	6.69	4070	-30	0.0	19.9	
14:00	130	17030.0	11.38	13.47	6.68	4050	-30	0.0	13.7	
14:05	130	17680.0	11.38	13.38	6.68	4050	-30	0.0	7.5	
14:10	130	18330.0	11.38	13.50	6.68	4050	-29	0.0	4.2	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG01-MW-01

Date:	02/27/2023	Casing Material:	PVC	Depth to Water (ft bmp):	11.22
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	13.5' bgs
Volume Units:	mL	Pump Intake (ft bmp)	12.75	Water Column (ft)	2.3'
Purge Start Time:	08:00	Screen Interval (ft bmp):	13.35-3.5' bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/27/2023	COC:	
Sample Time:	09:00	Analysis:	Select VOCs, select SVOCs, lead
Sample ID:	TG01-MW-01-230227, TG01-MW-01-230227MS, TG01-MW-01-230227MSD	Bottles:	
Duplicate Sample ID:		Odor:	foul odor
Duplicate Sample Time:		Remarks:	yellowish-green color

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
08:50	150	14150	11.22	12.85	11.55	1640	-357	0.84	1.0	
08:55	150	14900.0	11.22	13.00	11.61	1650	-373	0.82	1.0	
09:00	150	15650.0	11.24	13.09	11.61	1680	-382	0.83	0.9	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Stick up
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Well secured on initial inspection		X		
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG01-MW-02

Date:	02/27/2023	Casing Material:	PVC	Depth to Water (ft bmp):	10.11
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	14.0' bgs
Volume Units:	mL	Pump Intake (ft bmp)	13	Water Column (ft)	3.89'
Purge Start Time:	10:17	Screen Interval (ft bmp):	13.75-3.75' bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/27/2023	COC:	
Sample Time:	11:25	Analysis:	Select VOCs, select SVOCs, lead
Sample ID:	TG01-MW-02-230227	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
10:40	110	10110	10.15	13.65	7.56	1410	-215	1.63	14.2	
10:45	100	10610.0	10.11	13.88	7.03	1390	-211	1.46	14.4	
10:50	100	11110.0	10.11	13.94	6.91	1390	-209	1.37	14.0	
10:55	100	11610.0	10.11	13.95	6.83	1390	-205	1.29	15.0	
11:00	100	12110.0	10.11	14.05	6.77	1380	-201	1.19	17.3	
11:05	100	12610.0	10.15	14.16	6.74	1380	-196	1.11	19.5	
11:10	100	13110.0	10.15	14.29	6.70	1380	-192	1.10	21.2	
11:15	100	13610.0	10.15	14.16	6.68	1370	-190	1.05	23.2	
11:20	100	14110.0	10.15	14.12	6.65	1370	-188	1.04	24.3	
11:25	100	14610.0	10.15	14.11	6.63	1370	-187	1.00	25.3	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG01-MW-03

Date:	02/27/2023	Casing Material:	PVC	Depth to Water (ft bmp):	11.81
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	14' bgs
Volume Units:	mL	Pump Intake (ft bmp)	13.5'	Water Column (ft)	2.19'
Purge Start Time:	08:17	Screen Interval (ft bmp):	13.75'-3.75' bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/27/2023	COC:	
Sample Time:	09:30	Analysis:	select VOCS|select SVOCS|Lead
Sample ID:	TG01-MW03-230227	Bottles:	
Duplicate Sample ID:	TG01-MW03-230227D	Odor:	
Duplicate Sample Time:	09:30	Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
08:50	110	3300	11.88	13.61	6.32	3550	79	1.13	11.7	
08:55	110	3850.0	11.85	13.67	6.56	3530	41	0.8	9.6	
09:00	110	4400.0	11.86	13.78	6.68	3510	16	0.74	6.5	
09:05	110	4950.0	11.86	13.79	6.74	3520	4	0.75	5	
09:10	110	5500.0	11.86	13.81	6.77	3500	-5	0.7	4.4	
09:15	110	6050.0	11.85	13.96	6.79	3480	-13	0.63	3.7	
09:20	110	6600.0	11.85	14.26	6.79	3470	-19	0.60	3.4	
09:25	110	7150.0	11.85	14.35	6.79	3470	-22	0.61	2.7	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

Appendix E

Historical Soil and Groundwater Analytical Results

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	663 AREA-1 AOI8	663 AREA-2 AOI8	663 AREA-3 AOI8	663 AREA-4 AOI8	666-PE-1	666-PE-2	666-PE-3
Sample ID	Contact with	Contact with	Aquifer	663_AREA-1_898750	663_AREA-2_898750	663_AREA-3	663_AREA-4	666-PE-1(0.5-1.0)	666-PE-2(0.25-0.75)	666-PE-3(0.25-0.75)
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.5 - 1.0	0.3 - 0.8	0.3 - 0.8
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	6/4/2004	6/4/2004	6/4/2004	6/4/2004	5/14/2013	5/14/2013	5/14/2013
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.14)	ND (0.26)	ND (0.14)	ND (0.0048)	0.001 J (0.006)	ND (0.005)	0.0005 J (0.005)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)
Toluene	10000	10000	100	NA	NA	NA	NA	0.008 (0.006)	ND (0.005)	0.003 J (0.005)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	ND (0.006)	ND (0.005)	0.004 J (0.005)
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	ND (0.006)	ND (0.005)	0.002 J (0.005)
Xylenes (total)	7900	9100	1000	NA	NA	NA	NA	ND (0.006)	ND (0.005)	0.003 J (0.005)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	38 (4.5)	15 J (23)	ND (22)	ND (19)	0.78 (0.37)	0.48 (0.089)	2.8 (0.18)
Benzo(a)anthracene	130	190000	340	67 (45)	27 (23)	4.1 J (22)	3.8 J (19)	3 (0.37)	1.6 (0.089)	8.6 (0.18)
Benzo(a)pyrene	91	190000	46	56 AP (45)	26 AP (23)	6 J (22)	5.2 J (19)	2.2 (0.37)	1.6 (0.089)	4.5 (0.18)
Benzo(b)fluoranthene	76	190000	170	80 AP (45)	32 (23)	6.7 J (22)	4.4 J (19)	3.2 (0.37)	1.8 (0.089)	4.9 (0.18)
Benzo(g,h,i)perylene	190000	190000	180	40 (4.5)	23 J (23)	6.5 J (22)	6 J (19)	1.3 (0.37)	1.1 (0.089)	2.1 (0.18)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	52 (4.5)	24 (23)	5.6 J (22)	10 J (19)	3.2 (0.37)	1.6 (0.089)	13 (0.18)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	26 (4.5)	29 (23)	5.9 J (22)	ND (19)	0.2 J (0.37)	0.11 (0.089)	0.86 (0.18)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	7.8 (0.57)	31 (1)	8.1 (0.57)	ND (0.11)	ND (0.006)	ND (0.005)	0.004 J (0.005)
Phenanthrene	190000	190000	10000	150 (45)	99 (23)	14 J (22)	ND (19)	3.3 (0.37)	1.6 (0.089)	12 (0.18)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	110 (45)	50 (23)	ND (22)	18 J (19)	4.7 (0.37)	2.3 (0.089)	12 (0.18)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	2.29 (2.03)
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	NA	NA	NA	NA	636 (1.58)	687 (1.53)	198 (1.52)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	666-PE-4	666-PE-5	666-PE-6	666-PE-7	666-PE-8	AOI8-BH-16-001D	AOI8-BH-16-001D
Sample ID	Contact with	Contact with	Aquifer	666-PE-4(0.25-0.75)	666-PE-5(0.25-0.75)	666-PE-6(0.25-0.75)	666-PE-7(0.25-0.75)	666-PE-8(0.25-0.75)	AOI8-BH-16-001D-0-2-20160713	AOI8-BH-16-001D-6-8-20160714
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.3 - 0.8	0.3 - 0.8	0.3 - 0.8	0.3 - 0.8	0.3 - 0.8	0.0 - 2.0	6.0 - 8.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/14/2013	5/14/2013	5/14/2013	5/14/2013	5/14/2013	7/13/2016	7/14/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.005)	0.001 J (0.005)	0.023 (0.005)	0.0006 J (0.005)	0.0005 J (0.005)	ND (0.0203)	0.0257 (0.0216)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	ND (0.203)	ND (0.216)
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	ND (0.0203)	ND (0.0216)
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	ND (0.0203)	ND (0.0216)
Cumene	10000	10000	2500	ND (0.005)	ND (0.005)	0.021 (0.005)	ND (0.005)	ND (0.005)	ND (0.203)	ND (0.216)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	ND (0.0203)	ND (0.0216)
Ethyl Benzene	880	1000	70	ND (0.005)	0.006 (0.005)	0.26 (0.005)	ND (0.005)	ND (0.005)	ND (0.0203)	ND (0.0216)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	ND (0.203)	ND (0.216)
Methyl tert-butyl ether	8500	9800	2	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0203)	ND (0.0216)
Toluene	10000	10000	100	ND (0.005)	0.013 (0.005)	0.21 J (0.24)	0.003 J (0.005)	ND (0.005)	ND (0.102)	ND (0.108)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.005)	0.22 (0.005)	2.2 (0.24)	ND (0.005)	ND (0.005)	ND (0.0203)	ND (0.0216)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.005)	0.13 (0.005)	0.95 (0.24)	ND (0.005)	ND (0.005)	ND (0.0203)	ND (0.0216)
Xylenes (total)	7900	9100	1000	ND (0.005)	0.048 (0.005)	1.8 (0.24)	ND (0.005)	ND (0.005)	ND (0.061)	ND (0.0647)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	ND (0.0344)	ND (0.0401)
Anthracene	190000	190000	350	ND (0.35)	0.6 (0.18)	3.6 (0.37)	0.57 (0.19)	0.059 (0.018)	ND (0.0344)	ND (0.0401)
Benzo(a)anthracene	130	190000	340	0.25 J (0.35)	4.5 (0.18)	29 (0.37)	2 (0.19)	0.19 (0.018)	ND (0.0344)	ND (0.0401)
Benzo(a)pyrene	91	190000	46	0.55 (0.35)	2.1 (0.18)	12 (0.37)	2 (0.19)	0.2 (0.018)	ND (0.0344)	ND (0.0401)
Benzo(b)fluoranthene	76	190000	170	0.44 (0.35)	1.4 (0.18)	7.7 (0.37)	2.5 (0.19)	0.25 (0.018)	ND (0.0344)	ND (0.0401)
Benzo(g,h,i)perylene	190000	190000	180	0.48 (0.35)	0.94 (0.18)	3.5 (0.37)	1.3 (0.19)	0.14 (0.018)	ND (0.0344)	ND (0.0401)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	ND (0.0344)	ND (0.0401)
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	ND (0.347)	ND (0.405)
Chrysene	760	190000	230	0.66 (0.35)	8.8 (0.18)	52 (0.37)	2 (0.19)	0.24 (0.018)	ND (0.0344)	ND (0.0401)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	ND (0.0344)	ND (0.0401)
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	ND (0.0344)	ND (0.0401)
Fluorene	130000	190000	3800	ND (0.35)	0.47 (0.18)	3.6 (0.37)	0.14 J (0.19)	0.009 J (0.018)	ND (0.0344)	ND (0.0401)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	ND (0.0344)	ND (0.0401)
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	ND (0.0344)	ND (0.0401)
Naphthalene	66	77	25	ND (0.005)	0.04 (0.005)	0.97 (0.24)	ND (0.005)	ND (0.005)	ND (0.0344)	ND (0.0401)
Phenanthrene	190000	190000	10000	0.27 J (0.35)	3 (0.18)	24 (0.37)	2.2 (0.19)	0.15 (0.018)	ND (0.0344)	ND (0.0401)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	ND (0.347)	ND (0.405)
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	ND (0.347)	ND (0.405)
Pyrene	96000	190000	2200	0.64 (0.35)	4.8 (0.18)	25 (0.37)	2.9 (0.19)	0.29 (0.018)	ND (0.0344)	ND (0.0401)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	ND (10)	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	18.7 (1.04)	12.6 (1.22)
Lead	1000	190000	450	107 (1.54)	26 (1.59)	311 (1.55)	2200 (8.16)	110 (1.5)	25.6 (0.521)	11.4 (0.608)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	25.4 (2.09)	19 (2.43)
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	44.4 MI (2.09)	31.2 (2.43)
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	267 MI (5.21)	46.7 (6.08)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-002	AOI8-BH-16-002	AOI8-BH-16-003	AOI8-BH-16-003	AOI8-BH-16-004	AOI8-BH-16-004	AOI8-BH-16-005
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-002-0-2-20160915	AOI8-BH-16-002-6-8-20160915	AOI8-BH-16-003-0-2-20160831	AOI8-BH-16-003-4-5-20160831	AOI8-BH-16-004-0-2-20160829	AOI8-BH-16-004-7-8-20160829	AOI8-BH-16-005-0-2-20160829
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	4.0 - 5.0	0.0 - 2.0	7.0 - 8.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/15/2016	9/15/2016	8/31/2016	8/31/2016	8/29/2016	8/29/2016	8/29/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.00151 (0.00115)	0.00333 (0.00116)	1.12 (0.0688)	1.76 (0.185)	0.028 (0.024)	ND (0.00123)	0.00365 (0.0012)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00115)	0.00405 (0.00116)	0.645 (0.0688)	1.16 (0.185)	ND (0.024)	ND (0.00123)	ND (0.0012)
tert-Butylbenzene	10000	10000	1800	ND (0.00115)	ND (0.00116)	1.2 (0.0688)	0.711 (0.185)	ND (0.024)	ND (0.00123)	ND (0.0012)
Cumene	10000	10000	2500	ND (0.0115)	0.0792 (0.0116)	6.84 (0.688)	8.03 (1.85)	ND (0.24)	ND (0.0123)	ND (0.012)
Cyclohexane	10000	10000	6900	ND (0.00115)	0.0216 (0.00116)	2.56 (0.0688)	8.2 (0.185)	ND (0.024)	ND (0.00123)	ND (0.0012)
Ethyl Benzene	880	1000	70	ND (0.00115)	ND (0.00116)	0.499 (0.0688)	1.05 (0.185)	0.0255 (0.024)	ND (0.00123)	ND (0.0012)
Hexane	10000	10000	5300	ND (0.0115)	ND (0.0116)	0.956 (0.688)	2.73 (1.85)	ND (0.24)	ND (0.0123)	ND (0.012)
Methyl tert-butyl ether	8500	9800	2	ND (0.00115)	ND (0.00116)	ND (0.0688)	ND (0.185)	ND (0.024)	ND (0.00123)	ND (0.0012)
Toluene	10000	10000	100	ND (0.00576)	ND (0.00582)	1.67 (0.344)	3.43 (0.926)	ND (0.12)	ND (0.00613)	ND (0.00602)
1,2,4-Trimethylbenzene	4700	5400	300	0.00178 (0.00115)	0.00337 (0.00116)	10.7 (0.0688)	18.1 (0.185)	0.0512 (0.024)	ND (0.00123)	ND (0.0012)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00115)	0.00392 (0.00116)	5.23 (0.0688)	11.4 (0.185)	ND (0.024)	ND (0.00123)	ND (0.0012)
Xylenes (total)	7900	9100	1000	ND (0.00346)	ND (0.00349)	5.53 (0.206)	16.8 (0.555)	0.0935 (0.072)	ND (0.00368)	ND (0.00361)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.174)	7.5 (0.384)	14.7 (6.81)	26.3 (15.1)	ND (0.0391)	ND (0.202)	ND (1.99)
Anthracene	190000	190000	350	0.353 (0.174)	5.96 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	ND (0.202)	ND (1.99)
Benzo(a)anthracene	130	190000	340	1.5 (0.174)	5.59 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	0.375 (0.202)	11.1 (1.99)
Benzo(a)pyrene	91	190000	46	1.25 (0.174)	4.02 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	0.473 (0.202)	8.34 (1.99)
Benzo(b)fluoranthene	76	190000	170	1.81 (0.174)	4.48 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	0.596 (0.202)	9.96 (1.99)
Benzo(g,h,i)perylene	190000	190000	180	0.444 (0.174)	0.709 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	0.241 (0.202)	2.44 (1.99)
Benzo(k)fluoranthene	76	190000	610	0.471 (0.174)	1.47 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	ND (0.202)	3.17 (1.99)
1,1-Biphenyl	34	40	1.5	ND (1.76)	ND (3.88)	ND (68.7)	ND (153)	ND (0.395)	ND (2.04)	ND (20.1)
Chrysene	760	190000	230	1.4 (0.174)	5.66 (0.384)	7.3 (6.81)	ND (15.1)	ND (0.0391)	0.355 (0.202)	12.3 (1.99)
Dibenz(a,h)anthracene	22	190000	270	ND (0.174)	ND (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	ND (0.202)	ND (1.99)
Fluoranthene	130000	190000	3200	2.72 (0.174)	10.2 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	0.458 (0.202)	9.46 (1.99)
Fluorene	130000	190000	3800	ND (0.174)	5.76 (0.384)	19 (6.81)	32.9 (15.1)	ND (0.0391)	ND (0.202)	ND (1.99)
Indeno(1,2,3-cd)pyrene	76	190000	18000	0.454 (0.174)	0.752 (0.384)	ND (6.81)	ND (15.1)	ND (0.0391)	0.245 (0.202)	2.27 (1.99)
2-Methylnaphthalene	240	270	100	ND (0.174)	ND (0.384)	145 (6.81)	154 (15.1)	ND (0.0391)	ND (0.202)	ND (1.99)
Naphthalene	66	77	25	ND (0.174)	ND (0.384)	10.6 (6.81)	30.1 (15.1)	ND (0.0391)	0.218 (0.202)	ND (1.99)
Phenanthrene	190000	190000	10000	1.58 (0.174)	20 (0.768)	38.4 (6.81)	58.4 (15.1)	ND (0.0391)	0.26 (0.202)	2.62 (1.99)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (1.76)	ND (3.88)	ND (68.7)	ND (153)	ND (0.395)	ND (2.04)	ND (20.1)
Di-n-butylphthalate	10000	10000	4000	ND (1.76)	ND (3.88)	ND (68.7)	ND (153)	ND (0.395)	ND (2.04)	ND (20.1)
Pyrene	96000	190000	2200	2.25 (0.174)	11.5 (0.384)	15.2 (6.81)	29.9 (15.1)	ND (0.0391)	0.396 (0.202)	14.9 (1.99)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	13.2 (1.06)	3.13 (1.16)	18.2 (1.38)	25.5 (1.53)	10.8 (1.18)	8.01 (1.23)	4.28 (1.2)
Lead	1000	190000	450	97.9 (0.529)	5.58 (0.582)	1460 (0.688)	8420 (0.765)	58 (0.592)	319 (0.613)	122 (0.602)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	23.3 (2.11)	3.69 (2.33)	45.7 (2.75)	67.5 (3.06)	172 (2.37)	16.3 (2.45)	12.8 (2.41)
Vanadium	16000	190000	49000	36.2 (2.11)	5.38 (2.33)	59.1 (2.75)	39.3 (3.06)	60.4 (2.37)	20.9 (2.45)	37.4 (2.41)
Zinc	190000	190000	12000	129 (5.29)	12.5 (5.82)	734 (6.88)	850 (7.65)	66.2 (5.92)	180 (6.13)	70.6 (6.02)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-005	AOI8-BH-16-006	AOI8-BH-16-006	AOI8-BH-16-007	AOI8-BH-16-007	AOI8-BH-16-008	AOI8-BH-16-008
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-005-7-8-20160829	AOI8-BH-16-006-0-2-20160831	AOI8-BH-16-006-8-9-20160831	AOI8-BH-16-007-0-2-20160831	AOI8-BH-16-007-4-5-20160831	AOI8-BH-16-008-0-2-20160902	AOI8-BH-16-008-8-10-20160906
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	7.0 - 8.0	0.0 - 2.0	8.0 - 9.0	0.0 - 2.0	4.0 - 5.0	0.0 - 2.0	8.0 - 10.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/29/2016	8/31/2016	8/31/2016	8/31/2016	8/31/2016	9/2/2016	9/6/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.0558)	0.19 (0.0473)	ND (0.16)	ND (0.00139)	13.8 (0.148)	ND (0.141)	ND,MI (0.00124)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	0.545 (0.0558)	2.41 (0.0473)	2.46 (0.16)	ND (0.00139)	1.23 (0.148)	ND (0.141)	0.00369 MI (0.00124)
tert-Butylbenzene	10000	10000	1800	0.25 (0.0558)	0.124 (0.0473)	ND (0.16)	ND (0.00139)	94.9 (2.96)	ND (0.141)	ND (0.00124)
Cumene	10000	10000	2500	ND (0.558)	1.28 (0.473)	2.34 (1.6)	ND (0.0139)	3.32 (1.48)	ND (1.41)	ND,MI (0.0124)
Cyclohexane	10000	10000	6900	0.0625 (0.0558)	ND (0.0473)	0.331 (0.16)	0.00303 (0.00139)	6.06 (0.148)	0.145 (0.141)	ND (0.00124)
Ethyl Benzene	880	1000	70	0.119 (0.0558)	0.172 (0.0473)	ND (0.16)	ND (0.00139)	0.387 (0.148)	ND (0.141)	ND (0.00124)
Hexane	10000	10000	5300	ND (0.558)	ND (0.473)	ND (1.6)	ND (0.0139)	8.27 (1.48)	ND (1.41)	ND (0.0124)
Methyl tert-butyl ether	8500	9800	2	ND (0.0558)	ND (0.0473)	ND (0.16)	ND (0.00139)	ND (0.148)	ND (0.141)	ND (0.00124)
Toluene	10000	10000	100	ND (0.279)	0.331 (0.236)	ND (0.801)	ND (0.00695)	1.17 (0.739)	ND (0.707)	ND (0.00619)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0558)	0.328 (0.0473)	0.596 (0.16)	ND (0.00139)	3.99 (0.148)	ND (0.141)	ND (0.00124)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0558)	0.147 (0.0473)	0.23 (0.16)	ND (0.00139)	1.23 (0.148)	ND (0.141)	ND (0.00124)
Xylenes (total)	7900	9100	1000	ND (0.167)	0.674 (0.142)	ND (0.481)	ND (0.00417)	1.96 (0.444)	ND (0.424)	ND (0.00372)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (2.19)	10.4 (3)	10.5 (3.05)	ND (3.44)	ND (14.4)	1.74 (0.7)	ND (0.0409)
Anthracene	190000	190000	350	ND (2.19)	13.3 (3)	16.5 (3.05)	ND (3.44)	ND (14.4)	2.35 (0.7)	ND (0.0409)
Benzo(a)anthracene	130	190000	340	2.94 (2.19)	19.3 (3)	14.9 (3.05)	ND (3.44)	ND (14.4)	3.19 (0.7)	ND (0.0409)
Benzo(a)pyrene	91	190000	46	2.86 (2.19)	20.1 (3)	16 (3.05)	ND (3.44)	ND (14.4)	2.18 (0.7)	ND (0.0409)
Benzo(b)fluoranthene	76	190000	170	2.56 (2.19)	32 (3)	23.4 (3.05)	ND (3.44)	ND (14.4)	3.36 (0.7)	ND (0.0409)
Benzo(g,h,i)perylene	190000	190000	180	ND (2.19)	3.52 (3)	3.2 (3.05)	ND (3.44)	ND (14.4)	ND (0.7)	ND (0.0409)
Benzo(k)fluoranthene	76	190000	610	ND (2.19)	12.1 (3)	6.98 (3.05)	ND (3.44)	ND (14.4)	0.86 (0.7)	ND (0.0409)
1,1-Biphenyl	34	40	1.5	ND (22.1)	ND (30.3)	ND (30.8)	ND (34.7)	ND (145)	ND (7.07)	ND (0.413)
Chrysene	760	190000	230	4.11 (2.19)	17.3 (3)	11.7 (3.05)	ND (3.44)	ND (14.4)	3.62 (0.7)	ND (0.0409)
Dibenz(a,h)anthracene	22	190000	270	ND (2.19)	ND (3)	ND (3.05)	ND (3.44)	ND (14.4)	ND (0.7)	ND (0.0409)
Fluoranthene	130000	190000	3200	2.59 (2.19)	34.6 (3)	29.2 (3.05)	ND (3.44)	ND (14.4)	7.18 (0.7)	ND (0.0409)
Fluorene	130000	190000	3800	ND (2.19)	12.6 (3)	15.9 (3.05)	ND (3.44)	ND (14.4)	2.06 (0.7)	ND (0.0409)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (2.19)	4.24 (3)	3.3 (3.05)	ND (3.44)	ND (14.4)	ND (0.7)	ND (0.0409)
2-Methylnaphthalene	240	270	100	ND (2.19)	3.21 (3)	67.9 (3.05)	ND (3.44)	69.2 (14.4)	3.03 (0.7)	ND (0.0409)
Naphthalene	66	77	25	ND (2.19)	3.56 (3)	16.1 (3.05)	ND (3.44)	ND (14.4)	2.88 (0.7)	ND (0.0409)
Phenanthrene	190000	190000	10000	ND (2.19)	31 (3)	42.8 (3.05)	ND (3.44)	25.9 (14.4)	7.1 (0.7)	ND (0.0409)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (22.1)	ND (30.3)	ND (30.8)	ND (34.7)	ND (145)	ND (7.07)	ND (0.413)
Di-n-butylphthalate	10000	10000	4000	ND (22.1)	ND (30.3)	ND (30.8)	ND (34.7)	ND (145)	ND (7.07)	ND (0.413)
Pyrene	96000	190000	2200	4.56 (2.19)	28.7 (3)	22.6 (3.05)	ND (3.44)	15.5 (14.4)	7.84 (0.7)	ND,OE (0.0409)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	13.1 (1.33)	9.16 (1.21)	6.09 (1.23)	11.9 (1.39)	10.7 (1.45)	37.7 (1.41)	6.76 (1.24)
Lead	1000	190000	450	377 (0.664)	40.7 (0.606)	6.01 (0.616)	1650 (0.695)	424 (0.725)	342 (0.707)	10.3 (0.619)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	21.5 (2.66)	12.6 (2.42)	7.08 (2.47)	14.7 (2.78)	75.4 (2.9)	66.8 (2.83)	9.85 (2.48)
Vanadium	16000	190000	49000	17.3 (2.66)	19.1 (2.42)	9.86 (2.47)	38 (2.78)	23.1 (2.9)	37 (2.83)	20.6 (2.48)
Zinc	190000	190000	12000	267 (6.64)	51.1 (6.06)	20 B (6.16)	81.1 (6.95)	215 (7.25)	677 (7.07)	28.5 (6.19)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-009	AOI8-BH-16-009	AOI8-BH-16-010	AOI8-BH-16-010	AOI8-BH-16-011	AOI8-BH-16-011	AOI8-BH-16-012
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-009-0-2-20160906	AOI8-BH-16-009-8-10-20160906	AOI8-BH-16-010-0-2-20160805	AOI8-BH-16-010-6-8-20160805	AOI8-BH-16-011-0-2-20160804	AOI8-BH-16-011-6-8-20160804	AOI8-BH-16-012-0-2-20160804
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/6/2016	9/6/2016	8/5/2016	8/5/2016	8/4/2016	8/4/2016	8/4/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.0174 MI (0.00121)	ND (0.236)	0.00386 (0.00117)	26 (0.468)	0.00612 (0.00133)	6.66 (0.582)	ND (0.00118)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	0.00581 MI (0.00121)	6.79 (0.236)	ND (0.00117)	2.13 (0.468)	ND (0.00133)	1.15 (0.582)	ND (0.00118)
tert-Butylbenzene	10000	10000	1800	ND (0.00121)	ND (0.236)	0.0567 (0.00117)	169 (9.36)	ND (0.00133)	ND (0.582)	ND (0.00118)
Cumene	10000	10000	2500	ND (0.0121)	7.57 (2.36)	ND (0.0117)	ND (4.68)	ND (0.0133)	ND (5.82)	ND (0.0118)
Cyclohexane	10000	10000	6900	0.00611 MI (0.00121)	ND (0.236)	ND (0.00117)	ND (0.468)	0.00294 J (0.00133)	2.59 (0.582)	ND (0.00118)
Ethyl Benzene	880	1000	70	ND (0.00121)	ND (0.236)	ND (0.00117)	1.34 (0.468)	ND (0.00133)	4.61 (0.582)	ND (0.00118)
Hexane	10000	10000	5300	ND,MI (0.0121)	ND (2.36)	ND (0.0117)	ND (4.68)	ND,J (0.0133)	ND (5.82)	ND (0.0118)
Methyl tert-butyl ether	8500	9800	2	ND (0.00121)	ND (0.236)	ND (0.00117)	ND (0.468)	ND (0.00133)	ND (0.582)	ND (0.00118)
Toluene	10000	10000	100	ND (0.00605)	ND (1.18)	ND (0.00584)	ND (2.34)	ND (0.00667)	3 (2.91)	ND (0.00591)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00121)	ND (0.236)	ND (0.00117)	2.69 (0.468)	0.00237 (0.00133)	17.4 (0.582)	ND (0.00118)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00121)	ND (0.236)	ND (0.00117)	1.04 (0.468)	ND (0.00133)	7.17 (0.582)	ND (0.00118)
Xylenes (total)	7900	9100	1000	ND,MI (0.00363)	ND (0.707)	ND (0.0035)	2.95 (1.4)	ND (0.004)	17.7 (1.75)	ND (0.00354)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	ND (0.195)
Anthracene	190000	190000	350	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	ND (0.195)
Benzo(a)anthracene	130	190000	340	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	0.351 (0.195)
Benzo(a)pyrene	91	190000	46	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	0.431 (0.195)
Benzo(b)fluoranthene	76	190000	170	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	0.444 (0.195)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	0.305 (0.195)
Benzo(k)fluoranthene	76	190000	610	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	ND (0.195)
1,1-Biphenyl	34	40	1.5	ND (2.02)	ND (0.408)	ND (77.7)	ND (41.8)	ND (4.45)	ND (167)	ND (1.97)
Chrysene	760	190000	230	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	24.8 J+ (16.5)	0.429 (0.195)
Dibenz(a,h)anthracene	22	190000	270	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	ND (0.195)
Fluoranthene	130000	190000	3200	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	0.517 (0.195)
Fluorene	130000	190000	3800	ND (0.2)	0.0496 (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	ND (0.195)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	ND (16.5)	ND (0.195)
2-Methylnaphthalene	240	270	100	ND (0.2)	0.739 (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	60.8 J+ (16.5)	ND (0.195)
Naphthalene	66	77	25	ND (0.2)	ND (0.0404)	ND (7.7)	ND (4.14)	0.486 (0.441)	36.2 J+ (16.5)	ND (0.195)
Phenanthrene	190000	190000	10000	ND (0.2)	0.162 (0.0404)	ND (7.7)	ND (4.14)	ND (0.441)	25.8 J+ (16.5)	0.26 (0.195)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (2.02)	ND (0.408)	ND (77.7)	ND (41.8)	ND (4.45)	ND (167)	ND (1.97)
Di-n-butylphthalate	10000	10000	4000	ND (2.02)	ND (0.408)	ND (77.7)	ND (41.8)	ND (4.45)	ND (167)	ND (1.97)
Pyrene	96000	190000	2200	ND,OE (0.2)	ND,OE (0.0404)	ND (7.7)	4.77 (4.14)	ND (0.441)	ND (16.5)	0.439 (0.195)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	7.54 (1.21)	6.3 (1.22)	14.8 (5.84)	2.47 (1.26)	11.9 (1.33)	2.01 (1.25)	14.9 (1.18)
Lead	1000	190000	450	118 (0.605)	11.7 (0.612)	809 (2.92)	214 (0.628)	575 (0.667)	1090 (0.625)	68 (0.591)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	12.7 (2.42)	11 (2.45)	45.5 (11.7)	8.85 (2.51)	28.5 (2.67)	8.17 (2.5)	10.7 (2.36)
Vanadium	16000	190000	49000	22.4 (2.42)	27.2 (2.45)	39.7 (11.7)	15.8 (2.51)	44 (2.67)	16.1 (2.5)	15.5 (2.36)
Zinc	190000	190000	12000	110 (6.05)	31 (6.12)	54.7 B (29.2)	50 (6.28)	298 (6.67)	65.5 (6.25)	140 (5.91)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-012	AOI8-BH-16-013	AOI8-BH-16-013	AOI8-BH-16-014	AOI8-BH-16-014	AOI8-BH-16-015	AOI8-BH-16-015
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-012-8-10-20160804	AOI8-BH-16-013-0-2-20160830	AOI8-BH-16-013-14-15-20160830	AOI8-BH-16-014-0-2-20160830	AOI8-BH-16-014-14-15-20160830	AOI8-BH-16-015-0-2-20160804	AOI8-BH-16-015-4-6-20160804
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	8.0 - 10.0	0.0 - 2.0	14.0 - 15.0	0.0 - 2.0	14.0 - 15.0	0.0 - 2.0	4.0 - 6.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/4/2016	8/30/2016	8/30/2016	8/30/2016	8/30/2016	8/4/2016	8/4/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND,J (0.00118)	0.363 (0.0184)	ND (0.0171)	0.028 (0.00122)	ND (0.0207)	0.337 (0.0418)	ND (0.151)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	0.0193 J (0.00118)	0.699 (0.0184)	0.192 (0.0171)	ND (0.00122)	0.449 (0.0207)	0.139 (0.0418)	ND (0.151)
tert-Butylbenzene	10000	10000	1800	0.00821 J (0.00118)	0.166 (0.0184)	0.0581 (0.0171)	ND (0.00122)	0.121 (0.0207)	0.707 (0.0418)	ND (0.151)
Cumene	10000	10000	2500	ND,J (0.0118)	1.23 (0.184)	0.99 (0.171)	ND (0.0122)	ND (0.207)	28.5 (8.36)	1.77 (1.51)
Cyclohexane	10000	10000	6900	0.0075 J (0.00118)	2.27 (0.0184)	0.0339 (0.0171)	ND (0.00122)	0.0848 (0.0207)	0.451 (0.0418)	ND (0.151)
Ethyl Benzene	880	1000	70	ND,J (0.00118)	0.403 (0.0184)	ND (0.0171)	ND (0.00122)	ND (0.0207)	0.146 (0.0418)	ND (0.151)
Hexane	10000	10000	5300	ND,J (0.0118)	ND (0.184)	ND (0.171)	ND (0.0122)	ND (0.207)	0.478 (0.418)	ND (1.51)
Methyl tert-butyl ether	8500	9800	2	ND,J (0.00118)	ND (0.0184)	ND (0.0171)	ND (0.00122)	ND (0.0207)	ND (0.0418)	ND (0.151)
Toluene	10000	10000	100	ND,J (0.00589)	0.122 (0.0918)	ND (0.0856)	0.00661 (0.00612)	ND (0.103)	ND (0.209)	ND (0.755)
1,2,4-Trimethylbenzene	4700	5400	300	ND,J (0.00118)	0.0896 (0.0184)	ND (0.0171)	ND (0.00122)	ND (0.0207)	0.152 (0.0418)	0.219 (0.151)
1,3,5-Trimethylbenzene	4700	5400	93	ND,J (0.00118)	ND (0.0184)	ND (0.0171)	ND (0.00122)	ND (0.0207)	ND (0.0418)	ND (0.151)
Xylenes (total)	7900	9100	1000	ND,J (0.00353)	0.315 (0.0551)	0.0635 (0.0514)	ND (0.00367)	ND (0.0621)	0.246 (0.125)	ND (0.453)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.0862 (0.0389)	ND (1.92)	0.12 (0.0383)	ND (2.02)	0.307 (0.19)	ND (19.2)	ND (4.79)
Anthracene	190000	190000	350	ND (0.0389)	ND (1.92)	0.125 (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Benzo(a)anthracene	130	190000	340	0.0585 (0.0389)	ND (1.92)	0.119 (0.0383)	ND (2.02)	0.385 (0.19)	ND (19.2)	ND (4.79)
Benzo(a)pyrene	91	190000	46	ND (0.0389)	ND (1.92)	0.0748 (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Benzo(b)fluoranthene	76	190000	170	ND (0.0389)	ND (1.92)	0.0913 (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0389)	ND (1.92)	ND (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Benzo(k)fluoranthene	76	190000	610	ND (0.0389)	ND (1.92)	ND (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
1,1-Biphenyl	34	40	1.5	ND (0.392)	ND (19.4)	ND (0.387)	ND (20.4)	ND (1.91)	ND (194)	ND (48.3)
Chrysene	760	190000	230	0.22 (0.0389)	ND (1.92)	0.178 (0.0383)	ND (2.02)	0.69 (0.19)	ND (19.2)	ND (4.79)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0389)	ND (1.92)	ND (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Fluoranthene	130000	190000	3200	0.126 (0.0389)	ND (1.92)	0.203 (0.0383)	ND (2.02)	0.24 (0.19)	ND (19.2)	ND (4.79)
Fluorene	130000	190000	3800	0.337 (0.0389)	ND (1.92)	0.166 (0.0383)	ND (2.02)	0.304 (0.19)	ND (19.2)	ND (4.79)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0389)	ND (1.92)	ND (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
2-Methylnaphthalene	240	270	100	ND (0.0389)	ND (1.92)	ND (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Naphthalene	66	77	25	ND (0.0389)	ND (1.92)	ND (0.0383)	ND (2.02)	ND (0.19)	ND (19.2)	ND (4.79)
Phenanthrene	190000	190000	10000	0.932 (0.0389)	2.04 (1.92)	0.417 (0.0383)	ND (2.02)	0.928 (0.19)	ND (19.2)	ND (4.79)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.392)	ND (19.4)	ND (0.387)	ND (20.4)	ND (1.91)	ND (194)	ND (48.3)
Di-n-butylphthalate	10000	10000	4000	ND (0.392)	ND (19.4)	ND (0.387)	ND (20.4)	ND (1.91)	ND (194)	ND (48.3)
Pyrene	96000	190000	2200	0.134 (0.0389)	ND (1.92)	0.415 (0.0383)	ND (2.02)	0.759 (0.19)	ND (19.2)	ND (4.79)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	3.11 (1.18)	5.35 (1.17)	5.12 (1.16)	8.72 (1.22)	4.28 (1.15)	4.23 (1.45)	4.55 (1.45)
Lead	1000	190000	450	21.5 (0.589)	56.5 (0.583)	20.7 (0.58)	30.7 (0.612)	11.5 (0.575)	115 (0.727)	56.9 (0.726)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	9.63 (2.36)	13.1 (2.33)	10.1 (2.32)	19.5 (2.45)	7.92 (2.3)	19.9 (2.91)	24.5 (2.9)
Vanadium	16000	190000	49000	17 (2.36)	34.7 (2.33)	23.3 (2.32)	41.5 (2.45)	19.7 (2.3)	19.4 (2.91)	29.8 (2.9)
Zinc	190000	190000	12000	28.6 (5.89)	272 (5.83)	30.6 (5.8)	124 (6.12)	29.2 (5.75)	29.4 (7.27)	37.8 (7.26)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-016	AOI8-BH-16-016	AOI8-BH-16-017	AOI8-BH-16-017	AOI8-BH-16-018	AOI8-BH-16-018	AOI8-BH-16-019
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-016-0-2-20160801	AOI8-BH-16-016-6-8-20160801	AOI8-BH-16-017-0-2-20160802	AOI8-BH-16-017-6-7-20160802	AOI8-BH-16-018-0-2-20160830	AOI8-BH-16-018-14-15-20160830	AOI8-BH-16-019-0-2-20160829
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	6.0 - 7.0	0.0 - 2.0	14.0 - 15.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/1/2016	8/1/2016	8/2/2016	8/2/2016	8/30/2016	8/30/2016	8/29/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.0521)	ND (0.00133)	ND (0.00119)	0.21 (0.194)	ND (0.00125)	0.00453 (0.00119)	0.058 MI,OE (0.00117)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	0.13 (0.0521)	ND (0.00133)	ND (0.00119)	ND (0.194)	ND (0.00125)	0.0138 (0.00119)	ND,MI,OE (0.00117)
tert-Butylbenzene	10000	10000	1800	0.143 (0.0521)	ND (0.00133)	ND (0.00119)	ND (0.194)	ND (0.00125)	0.00345 (0.00119)	ND,MI,OE (0.00117)
Cumene	10000	10000	2500	ND (0.521)	ND (0.0133)	ND (0.0119)	ND (1.94)	ND (0.0125)	0.043 (0.0119)	ND,MI,OE (0.0117)
Cyclohexane	10000	10000	6900	0.122 (0.0521)	0.00969 (0.00133)	ND (0.00119)	0.947 (0.194)	ND (0.00125)	0.00973 (0.00119)	ND (0.00117)
Ethyl Benzene	880	1000	70	ND (0.0521)	ND (0.00133)	ND (0.00119)	0.652 (0.194)	ND (0.00125)	0.0124 (0.00119)	ND,MI,OE (0.00117)
Hexane	10000	10000	5300	ND (0.521)	ND (0.0133)	ND (0.0119)	ND (1.94)	ND (0.0125)	ND (0.0119)	0.0125 MI,OE (0.0117)
Methyl tert-butyl ether	8500	9800	2	ND (0.0521)	ND (0.00133)	ND (0.00119)	0.441 (0.194)	ND (0.00125)	ND (0.00119)	ND,MI,OE (0.00117)
Toluene	10000	10000	100	ND (0.261)	ND (0.00666)	ND (0.00597)	ND (0.969)	ND (0.00624)	0.0169 (0.00593)	ND,MI,OE (0.00587)
1,2,4-Trimethylbenzene	4700	5400	300	0.564 (0.0521)	ND (0.00133)	ND (0.00119)	3.52 (0.194)	ND (0.00125)	0.0205 (0.00119)	ND,MI,OE (0.00117)
1,3,5-Trimethylbenzene	4700	5400	93	0.23 (0.0521)	ND (0.00133)	ND (0.00119)	1.75 (0.194)	ND (0.00125)	0.00604 (0.00119)	ND,MI,OE (0.00117)
Xylenes (total)	7900	9100	1000	0.49 (0.156)	ND (0.00399)	ND (0.00358)	4.91 (0.581)	ND (0.00375)	0.067 (0.00356)	ND,MI,OE (0.00352)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (3.04)	ND (8.79)	ND (0.0394)	ND (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Anthracene	190000	190000	350	ND (3.04)	ND (8.79)	ND (0.0394)	ND (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Benzo(a)anthracene	130	190000	340	ND (3.04)	ND (8.79)	ND (0.0394)	2.97 (0.907)	3.17 (2.06)	2.28 (1.96)	ND (1.94)
Benzo(a)pyrene	91	190000	46	ND (3.04)	ND (8.79)	ND (0.0394)	3.42 (0.907)	4.32 (2.06)	2.8 (1.96)	ND (1.94)
Benzo(b)fluoranthene	76	190000	170	ND (3.04)	ND (8.79)	ND (0.0394)	3.04 (0.907)	6.25 (2.06)	3.67 (1.96)	ND (1.94)
Benzo(g,h,i)perylene	190000	190000	180	ND (3.04)	ND (8.79)	ND (0.0394)	1.57 (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Benzo(k)fluoranthene	76	190000	610	ND,OE (3.04)	ND (8.79)	ND (0.0394)	ND (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
1,1-Biphenyl	34	40	1.5	ND (30.7)	ND (88.7)	ND (0.398)	ND (9.15)	ND (20.8)	ND (19.8)	ND (19.5)
Chrysene	760	190000	230	ND (3.04)	ND (8.79)	ND (0.0394)	6.08 (0.907)	3.21 (2.06)	2.21 (1.96)	ND (1.94)
Dibenz(a,h)anthracene	22	190000	270	ND (3.04)	ND (8.79)	ND (0.0394)	0.911 (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Fluoranthene	130000	190000	3200	ND (3.04)	ND (8.79)	ND (0.0394)	3.3 (0.907)	3.41 (2.06)	2.5 (1.96)	ND (1.94)
Fluorene	130000	190000	3800	ND (3.04)	ND (8.79)	ND (0.0394)	1.06 (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (3.04)	ND (8.79)	ND (0.0394)	ND (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
2-Methylnaphthalene	240	270	100	ND (3.04)	ND (8.79)	ND (0.0394)	8.15 (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Naphthalene	66	77	25	ND,OE (3.04)	ND (8.79)	ND (0.0394)	4.72 (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
Phenanthrene	190000	190000	10000	ND (3.04)	ND (8.79)	ND (0.0394)	4.81 (0.907)	ND (2.06)	ND (1.96)	ND (1.94)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (30.7)	ND (88.7)	ND (0.398)	ND (9.15)	ND (20.8)	ND (19.8)	ND (19.5)
Di-n-butylphthalate	10000	10000	4000	ND (30.7)	ND (88.7)	ND (0.398)	ND (9.15)	ND (20.8)	ND (19.8)	ND (19.5)
Pyrene	96000	190000	2200	ND (3.04)	ND (8.79)	ND (0.0394)	4.26 (0.907)	2.94 (2.06)	2.15 (1.96)	ND (1.94)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	8.02 (1.84)	4.75 (1.33)	7.33 (1.19)	7.4 (1.37)	4.79 (1.25)	4.9 (1.19)	5.83 (1.17)
Lead	1000	190000	450	155 (0.922)	103 (0.666)	21 (0.597)	230 (0.687)	65.2 (0.624)	148 (0.593)	147 (0.587)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	35.3 (3.69)	12 (2.66)	11.3 (2.39)	14.9 (2.75)	10.2 (2.5)	9.48 (2.37)	16.6 (2.35)
Vanadium	16000	190000	49000	82.5 (3.69)	28.9 (2.66)	33.3 (2.39)	34.8 (2.75)	13.2 (2.5)	12.8 (2.37)	26.1 (2.35)
Zinc	190000	190000	12000	227 (9.22)	32.3 (6.66)	46.8 (5.97)	88.9 (6.87)	233 (6.24)	95.4 (5.93)	132 (5.87)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-019	AOI8-BH-16-020	AOI8-BH-16-020	AOI8-BH-16-021	AOI8-BH-16-021	AOI8-BH-16-022	AOI8-BH-16-022
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-019-3-4-20160829	AOI8-BH-16-020-0-2-20160801	AOI8-BH-16-020-6-8-20160801	AOI8-BH-16-021-0-2-20160926	AOI8-BH-16-021-6-8-20160926	AOI8-BH-16-022-0-2-20160802	AOI8-BH-16-022-6-8-20160803
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	3.0 - 4.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/29/2016	8/1/2016	8/1/2016	9/26/2016	9/26/2016	8/2/2016	8/3/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	11.6 (0.252)	0.00146 (0.00114)	ND (0.189)	0.00244 MI (0.00121)	0.868 (0.522)	0.00193 (0.0011)	0.302 (0.139)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.252)	0.00352 (0.00114)	1.77 (0.189)	ND,MI (0.00121)	1.47 (0.522)	ND (0.0011)	0.706 (0.139)
tert-Butylbenzene	10000	10000	1800	29.4 (0.252)	0.00584 (0.00114)	1.62 (0.189)	0.00152 MI (0.00121)	3.04 (0.522)	ND (0.0011)	5.05 (0.139)
Cumene	10000	10000	2500	ND (2.52)	0.0171 (0.0114)	2.61 (1.89)	ND,MI (0.0121)	9.96 (5.22)	ND (0.011)	ND (1.39)
Cyclohexane	10000	10000	6900	0.482 (0.252)	0.00303 (0.00114)	ND (0.189)	0.00496 (0.00121)	0.868 (0.522)	ND (0.0011)	ND,J (0.139)
Ethyl Benzene	880	1000	70	ND (0.252)	ND (0.00114)	ND (0.189)	ND,MI (0.00121)	ND (0.522)	ND (0.0011)	ND (0.139)
Hexane	10000	10000	5300	ND (2.52)	ND (0.0114)	ND (1.89)	ND (0.0121)	ND (5.22)	ND (0.011)	ND,J (1.39)
Methyl tert-butyl ether	8500	9800	2	ND (0.252)	ND (0.00114)	ND (0.189)	ND (0.00121)	ND (0.522)	ND (0.0011)	ND (0.139)
Toluene	10000	10000	100	ND (1.26)	ND (0.00571)	ND (0.946)	ND,MI (0.00603)	ND (2.61)	ND (0.00548)	ND (0.696)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.252)	ND (0.00114)	ND (0.189)	ND,MI (0.00121)	ND (0.522)	ND (0.0011)	ND (0.139)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.252)	ND (0.00114)	ND (0.189)	ND,MI (0.00121)	ND (0.522)	ND (0.0011)	ND (0.139)
Xylenes (total)	7900	9100	1000	0.948 (0.756)	ND (0.00342)	ND (0.567)	ND,MI (0.00362)	ND (1.57)	ND (0.00329)	ND (0.417)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (2.28)	ND (7.53)	0.792 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Anthracene	190000	190000	350	ND (2.28)	ND (7.53)	0.235 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Benzo(a)anthracene	130	190000	340	ND (2.28)	ND (7.53)	0.222 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Benzo(a)pyrene	91	190000	46	ND (2.28)	ND (7.53)	ND (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Benzo(b)fluoranthene	76	190000	170	ND (2.28)	ND (7.53)	ND (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Benzo(g,h,i)perylene	190000	190000	180	ND (2.28)	ND (7.53)	ND (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Benzo(k)fluoranthene	76	190000	610	ND (2.28)	ND (7.53)	ND,OE (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
1,1-Biphenyl	34	40	1.5	ND (23)	ND (76)	ND (2.1)	ND (20.1)	ND (88.1)	ND (3.65)	ND (38.6)
Chrysene	760	190000	230	ND (2.28)	ND (7.53)	0.471 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Dibenz(a,h)anthracene	22	190000	270	ND (2.28)	ND (7.53)	ND (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Fluoranthene	130000	190000	3200	ND (2.28)	ND (7.53)	0.439 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Fluorene	130000	190000	3800	ND (2.28)	ND (7.53)	1.09 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (2.28)	ND (7.53)	ND (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
2-Methylnaphthalene	240	270	100	ND (2.28)	ND (7.53)	9.3 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Naphthalene	66	77	25	ND (2.28)	ND (7.53)	2.75 OE (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Phenanthrene	190000	190000	10000	ND (2.28)	ND (7.53)	1.49 (0.208)	ND (1.99)	13.1 (8.73)	ND (0.362)	4.75 (3.83)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (23)	ND (76)	ND (2.1)	ND (20.1)	ND (88.1)	ND (3.65)	ND (38.6)
Di-n-butylphthalate	10000	10000	4000	ND (23)	ND (76)	ND (2.1)	ND (20.1)	ND (88.1)	ND (3.65)	ND (38.6)
Pyrene	96000	190000	2200	ND (2.28)	ND (7.53)	0.698 (0.208)	ND (1.99)	ND (8.73)	ND (0.362)	ND (3.83)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	4.96 (1.38)	10.5 (1.14)	4.07 (1.26)	6.35 (1.21)	4.17 (1.32)	9.45 (1.1)	1.79 (1.16)
Lead	1000	190000	450	40.3 (0.691)	478 (0.571)	19.8 (0.631)	155 (0.603)	86.6 (0.661)	52.7 (0.548)	25.9 (0.58)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	11.5 (2.76)	44.8 (2.28)	12.7 (2.52)	26.2 (2.41)	13.8 (2.65)	12.6 (2.19)	9.43 (2.32)
Vanadium	16000	190000	49000	23.4 (2.76)	47.1 (2.28)	29.8 (2.52)	51.8 (2.41)	29.1 (2.65)	24.6 (2.19)	20.3 (2.32)
Zinc	190000	190000	12000	65.7 (6.91)	1910 (28.5)	33.8 (6.31)	161 (6.03)	22.9 (6.61)	63 (5.48)	16.1 (5.8)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-023	AOI8-BH-16-023	AOI8-BH-16-024	AOI8-BH-16-024	AOI8-BH-16-025	AOI8-BH-16-025	AOI8-BH-16-026
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-023-0-2-20160908	AOI8-BH-16-023-6-8-20160908	AOI8-BH-16-024-0-2-20160907	AOI8-BH-16-024-10-12-20160907	AOI8-BH-16-025-0-2-20160902	AOI8-BH-16-025-12-14-20160902	AOI8-BH-16-026-0-2-20160907
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	12.0 - 14.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/8/2016	9/8/2016	9/7/2016	9/7/2016	9/2/2016	9/2/2016	9/7/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.531 (0.124)	0.24 (0.141)	ND (0.00128)	ND (0.00114)	0.00271 (0.00121)	ND (0.0013)	ND (0.00151)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	1.78 (0.124)	0.364 (0.141)	ND (0.00128)	ND,MI (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
tert-Butylbenzene	10000	10000	1800	0.13 (0.124)	ND (0.141)	ND (0.00128)	ND,MI (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
Cumene	10000	10000	2500	ND (1.24)	ND (1.41)	ND (0.0128)	ND,MI (0.0114)	ND (0.0121)	ND (0.013)	ND (0.0151)
Cyclohexane	10000	10000	6900	ND (0.124)	ND (0.141)	ND (0.00128)	ND (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
Ethyl Benzene	880	1000	70	ND (0.124)	ND (0.141)	ND (0.00128)	ND,MI (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
Hexane	10000	10000	5300	ND (1.24)	ND (1.41)	ND (0.0128)	ND (0.0114)	ND (0.0121)	ND (0.013)	ND (0.0151)
Methyl tert-butyl ether	8500	9800	2	ND (0.124)	ND (0.141)	ND (0.00128)	ND (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
Toluene	10000	10000	100	ND (0.622)	ND (0.703)	ND (0.00639)	ND (0.00569)	ND (0.00603)	ND (0.00649)	ND (0.00755)
1,2,4-Trimethylbenzene	4700	5400	300	0.13 (0.124)	ND (0.141)	ND (0.00128)	ND,MI (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.124)	ND (0.141)	ND (0.00128)	ND,MI (0.00114)	ND (0.00121)	ND (0.0013)	ND (0.00151)
Xylenes (total)	7900	9100	1000	ND (0.373)	ND (0.422)	ND (0.00384)	ND,MI (0.00342)	ND (0.00362)	ND (0.00389)	ND (0.00453)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.737 (0.461)	0.715 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	ND (4.28)	ND (0.838)
Anthracene	190000	190000	350	ND (0.461)	0.234 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	4.37 (4.28)	ND (0.838)
Benzo(a)anthracene	130	190000	340	ND (0.461)	0.275 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	24.8 (4.28)	ND (0.838)
Benzo(a)pyrene	91	190000	46	0.635 (0.461)	0.208 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	34.8 (4.28)	ND (0.838)
Benzo(b)fluoranthene	76	190000	170	0.658 (0.461)	ND (0.207)	ND (0.0422)	ND (0.0376)	0.287 (0.199)	50.1 (4.28)	ND (0.838)
Benzo(g,h,i)perylene	190000	190000	180	0.503 (0.461)	ND (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	9.66 (4.28)	ND (0.838)
Benzo(k)fluoranthene	76	190000	610	ND (0.461)	ND (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	17.7 (4.28)	ND (0.838)
1,1-Biphenyl	34	40	1.5	ND (4.66)	ND (2.09)	ND (0.426)	ND (0.379)	ND (2.01)	ND (43.2)	ND (8.45)
Chrysene	760	190000	230	0.697 (0.461)	0.51 (0.207)	ND (0.0422)	ND (0.0376)	0.244 (0.199)	20.7 (4.28)	ND (0.838)
Dibenz(a,h)anthracene	22	190000	270	ND (0.461)	ND (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	ND (4.28)	ND (0.838)
Fluoranthene	130000	190000	3200	ND (0.461)	ND (0.207)	ND (0.0422)	ND (0.0376)	0.278 (0.199)	25 (4.28)	ND (0.838)
Fluorene	130000	190000	3800	1.05 (0.461)	0.938 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	ND (4.28)	ND (0.838)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.461)	ND (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	9.96 (4.28)	ND (0.838)
2-Methylnaphthalene	240	270	100	0.9 (0.461)	0.758 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	ND (4.28)	ND (0.838)
Naphthalene	66	77	25	ND (0.461)	0.319 (0.207)	ND (0.0422)	ND (0.0376)	ND (0.199)	ND (4.28)	ND (0.838)
Phenanthrene	190000	190000	10000	1.68 (0.461)	2.76 (0.207)	ND (0.0422)	ND (0.0376)	0.246 (0.199)	12.3 (4.28)	ND (0.838)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (4.66)	ND (2.09)	ND (0.426)	ND (0.379)	ND (2.01)	ND (43.2)	ND (8.45)
Di-n-butylphthalate	10000	10000	4000	ND (4.66)	ND (2.09)	ND (0.426)	ND (0.379)	ND (2.01)	ND (43.2)	ND (8.45)
Pyrene	96000	190000	2200	0.649 OE (0.461)	0.572 OE (0.207)	ND,OE (0.0422)	ND,OE (0.0376)	0.282 (0.199)	20.8 (4.28)	ND,OE (0.838)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	7.1 (1.4)	4.15 (1.26)	7.71 (1.28)	4.07 (1.14)	6.15 (1.21)	4.16 (1.3)	5.65 (1.27)
Lead	1000	190000	450	98.3 (0.699)	79.2 (0.628)	15.9 (0.639)	8.52 (0.569)	119 (0.603)	9.56 (0.649)	143 (0.635)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	21.8 (2.8)	7.2 (2.51)	12.9 (2.56)	11.6 (2.28)	22.4 (2.41)	14.8 (2.59)	12.2 (2.54)
Vanadium	16000	190000	49000	41.8 (2.8)	15.5 (2.51)	34.8 (2.56)	25.9 (2.28)	49.9 (2.41)	17.9 (2.59)	48.8 (2.54)
Zinc	190000	190000	12000	90 (6.99)	33 (6.28)	38.5 (6.39)	38.3 (5.69)	120 (6.03)	20.7 (6.49)	50.2 (6.35)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-026	AOI8-BH-16-027	AOI8-BH-16-027	AOI8-BH-16-028	AOI8-BH-16-028	AOI8-BH-16-029	AOI8-BH-16-029
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-026-12-14-20160907	AOI8-BH-16-027-0-2-20160829	AOI8-BH-16-027-3-4-20160829	AOI8-BH-16-028-0-2-20160727	AOI8-BH-16-028-6-8-20160728	AOI8-BH-16-029-0-2-20160727	AOI8-BH-16-029-8-10-20160727
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	12.0 - 14.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	8.0 - 10.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/7/2016	8/29/2016	8/29/2016	7/27/2016	7/28/2016	7/27/2016	7/27/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00115)	0.263 (0.00168)	16.6 (1.05)	ND (0.00122)	0.00295 (0.00125)	ND (0.00132)	ND (0.00123)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00115)	0.00401 (0.00168)	1.51 (1.05)	ND (0.00122)	ND (0.00125)	ND (0.00132)	ND (0.00123)
tert-Butylbenzene	10000	10000	1800	ND (0.00115)	0.318 (0.00168)	122 (1.05)	ND (0.00122)	ND (0.00125)	ND (0.00132)	0.00176 (0.00123)
Cumene	10000	10000	2500	ND (0.0115)	0.0413 (0.0168)	ND (10.5)	ND (0.0122)	ND (0.0125)	ND (0.0132)	ND (0.0123)
Cyclohexane	10000	10000	6900	ND (0.00115)	0.0412 (0.00168)	3.33 (1.05)	ND (0.00122)	ND (0.00125)	ND (0.00132)	0.00202 (0.00123)
Ethyl Benzene	880	1000	70	ND (0.00115)	0.0464 (0.00168)	343 (21)	ND (0.00122)	ND (0.00125)	ND (0.00132)	ND (0.00123)
Hexane	10000	10000	5300	ND (0.0115)	0.0213 (0.0168)	ND (10.5)	ND (0.0122)	ND (0.0125)	ND (0.0132)	ND (0.0123)
Methyl tert-butyl ether	8500	9800	2	ND (0.00115)	ND (0.00168)	ND (1.05)	ND (0.00122)	ND (0.00125)	ND (0.00132)	ND (0.00123)
Toluene	10000	10000	100	ND (0.00577)	ND (0.00842)	ND (5.26)	ND (0.00609)	ND (0.00623)	ND (0.00658)	ND (0.00616)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00115)	ND (0.00168)	1.61 (1.05)	ND (0.00122)	ND (0.00125)	ND (0.00132)	ND (0.00123)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00115)	ND (0.00168)	1.36 (1.05)	ND (0.00122)	ND (0.00125)	ND (0.00132)	ND (0.00123)
Xylenes (total)	7900	9100	1000	ND (0.00346)	0.363 (0.00505)	1540 (63.1)	ND (0.00365)	ND (0.00374)	ND (0.00395)	ND (0.0037)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Anthracene	190000	190000	350	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Benzo(a)anthracene	130	190000	340	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Benzo(a)pyrene	91	190000	46	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (4.07)
Benzo(b)fluoranthene	76	190000	170	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (4.07)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (4.07)
Benzo(k)fluoranthene	76	190000	610	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (4.07)
1,1-Biphenyl	34	40	1.5	ND (0.385)	ND (22.1)	ND (8.34)	ND (78.7)	ND (83)	ND (2.19)	ND (20.5)
Chrysene	760	190000	230	ND (0.0381)	2.22 (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	2.94 (2.03)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (4.07)
Fluoranthene	130000	190000	3200	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Fluorene	130000	190000	3800	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (4.07)
2-Methylnaphthalene	240	270	100	ND (0.0381)	ND (2.19)	0.977 (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Naphthalene	66	77	25	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
Phenanthrene	190000	190000	10000	ND (0.0381)	ND (2.19)	ND (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	ND (2.03)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.385)	ND (22.1)	ND (8.34)	ND (78.7)	ND (83)	ND (2.19)	ND (20.5)
Di-n-butylphthalate	10000	10000	4000	ND (0.385)	ND (22.1)	ND (8.34)	ND (78.7)	ND (83)	ND (2.19)	ND (20.5)
Pyrene	96000	190000	2200	ND,OE (0.0381)	2.5 (2.19)	0.835 (0.826)	ND (7.8)	ND (8.23)	ND (0.217)	2.15 (2.03)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	9.2 (1.15)	5.87 (1.33)	4.85 (1.25)	3.51 (1.18)	5.1 (1.25)	5.87 (1.32)	5.16 (1.23)
Lead	1000	190000	450	9.13 (0.577)	79.6 (0.663)	4.22 (0.626)	94.4 (0.591)	97.9 (0.623)	44.5 (0.658)	48.6 (0.616)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	13.3 (2.31)	18.3 (2.65)	12.6 (2.5)	31.8 (2.36)	22.5 (2.49)	18.2 (2.63)	38.3 (2.46)
Vanadium	16000	190000	49000	27.4 (2.31)	22.1 (2.65)	14.2 (2.5)	50 (2.36)	78.9 (2.49)	49.8 (2.63)	58 (2.46)
Zinc	190000	190000	12000	48.6 (5.77)	51.1 (6.63)	ND (6.26)	131 (5.91)	86.3 (6.23)	41.5 (6.58)	31.1 (6.16)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-030	AOI8-BH-16-030	AOI8-BH-16-031	AOI8-BH-16-031	AOI8-BH-16-032	AOI8-BH-16-032	AOI8-BH-16-033
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-030-0-2-20160727	AOI8-BH-16-030-8-10-20160727	AOI8-BH-16-031-0-2-20160725	AOI8-BH-16-031-8-10-20160725	AOI8-BH-16-032-0-2-20160726	AOI8-BH-16-032-8-10-20160726	AOI8-BH-16-033-0-2-20160908
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	7/27/2016	7/27/2016	7/25/2016	7/25/2016	7/26/2016	7/26/2016	9/8/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00126)	ND (0.0259)	0.00412 (0.00127)	ND (0.322)	ND (0.0011)	1.25 (0.633)	0.0052 (0.00147)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00126)	0.108 (0.0259)	ND (0.00127)	1.06 (0.322)	ND (0.0011)	4.17 (0.633)	ND (0.00147)
tert-Butylbenzene	10000	10000	1800	ND (0.00126)	ND (0.0259)	ND (0.00127)	7.62 (0.322)	ND (0.0011)	8.69 (0.633)	ND (0.00147)
Cumene	10000	10000	2500	ND (0.0126)	ND (0.259)	ND (0.0127)	4.5 (3.22)	ND (0.011)	ND (6.33)	ND (0.0147)
Cyclohexane	10000	10000	6900	ND (0.00126)	ND (0.0259)	ND (0.00127)	ND (0.322)	ND (0.0011)	ND (0.633)	ND (0.00147)
Ethyl Benzene	880	1000	70	ND (0.00126)	ND (0.0259)	ND (0.00127)	ND (0.322)	ND (0.0011)	ND (0.633)	ND (0.00147)
Hexane	10000	10000	5300	ND (0.0126)	ND (0.259)	ND (0.0127)	ND (3.22)	ND (0.011)	ND (6.33)	ND (0.0147)
Methyl tert-butyl ether	8500	9800	2	ND (0.00126)	ND (0.0259)	ND (0.00127)	ND (0.322)	ND (0.0011)	ND (0.633)	0.00297 (0.00147)
Toluene	10000	10000	100	ND (0.00628)	ND (0.129)	ND (0.00635)	ND (1.61)	ND (0.0055)	ND (3.17)	ND (0.00733)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00126)	ND (0.0259)	ND (0.00127)	0.324 (0.322)	ND (0.0011)	ND (0.633)	ND (0.00147)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00126)	ND (0.0259)	ND (0.00127)	ND (0.322)	ND (0.0011)	ND (0.633)	ND (0.00147)
Xylenes (total)	7900	9100	1000	ND (0.00377)	ND (0.0776)	ND (0.00381)	ND (0.967)	ND (0.0033)	ND (1.9)	ND (0.0044)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Anthracene	190000	190000	350	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Benzo(a)anthracene	130	190000	340	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Benzo(a)pyrene	91	190000	46	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Benzo(b)fluoranthene	76	190000	170	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Benzo(g,h,i)perylene	190000	190000	180	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Benzo(k)fluoranthene	76	190000	610	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
1,1-Biphenyl	34	40	1.5	ND (20.9)	ND (2.08)	ND (19.6)	ND (81.8)	ND (0.366)	ND (80.4)	ND (207)
Chrysene	760	190000	230	ND (2.07)	0.235 (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Dibenz(a,h)anthracene	22	190000	270	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Fluoranthene	130000	190000	3200	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Fluorene	130000	190000	3800	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	9.05 (7.96)	ND (20.5)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
2-Methylnaphthalene	240	270	100	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Naphthalene	66	77	25	ND (2.07)	ND (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	ND (7.96)	ND (20.5)
Phenanthrene	190000	190000	10000	ND (2.07)	0.222 (0.206)	ND (1.94)	10.7 (8.11)	ND (0.0363)	22.2 (7.96)	ND (20.5)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (20.9)	ND (2.08)	ND (19.6)	ND (81.8)	ND (0.366)	ND (80.4)	ND (207)
Di-n-butylphthalate	10000	10000	4000	ND (20.9)	ND (2.08)	ND (19.6)	ND (81.8)	ND (0.366)	ND (80.4)	ND (207)
Pyrene	96000	190000	2200	ND (2.07)	0.372 (0.206)	ND (1.94)	ND (8.11)	ND (0.0363)	10.3 (7.96)	ND,OE (20.5)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	5.94 (1.26)	10.1 (1.25)	6.1 (1.18)	5.34 (1.23)	7.89 (1.1)	4.41 (1.21)	6.97 (1.24)
Lead	1000	190000	450	26.8 (0.628)	30.6 (0.623)	105 (0.588)	101 (0.614)	6.63 (0.55)	71.7 (0.603)	2990 (0.621)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	14.1 (2.51)	15.7 (2.49)	20.9 (2.35)	20.8 (2.46)	23.9 (2.2)	17 (2.41)	44.6 (2.48)
Vanadium	16000	190000	49000	26.9 (2.51)	23.8 (2.49)	80.4 (2.35)	43.4 (2.46)	45.3 (2.2)	44.4 (2.41)	116 (2.48)
Zinc	190000	190000	12000	41.4 (6.28)	59.6 (6.23)	67.3 (5.88)	56.5 (6.14)	46.7 (5.5)	46.2 (6.03)	276 (6.21)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-033	AOI8-BH-16-034	AOI8-BH-16-034	AOI8-BH-16-035	AOI8-BH-16-035	AOI8-BH-16-036	AOI8-BH-16-036
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-033-8-10-20160908	AOI8-BH-16-034-0-2-20160908	AOI8-BH-16-034-8-10-20160908	AOI8-BH-16-035-0-2-20160721	AOI8-BH-16-035-6-7-20160721	AOI8-BH-16-036-0-2-20160722	AOI8-BH-16-036-12-13-20160722
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	8.0 - 10.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	6.0 - 7.0	0.0 - 2.0	12.0 - 13.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/8/2016	9/8/2016	9/8/2016	7/21/2016	7/21/2016	7/22/2016	7/22/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.0276)	0.00189 (0.00125)	ND (0.00112)	0.00581 (0.00134)	0.0294 (0.0251)	0.0254 (0.00154)	ND (0.403)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	0.0907 (0.0276)	ND (0.00125)	0.00168 (0.00112)	ND (0.00134)	0.0436 (0.0251)	ND (0.00154)	1.94 (0.403)
tert-Butylbenzene	10000	10000	1800	0.639 (0.0276)	ND (0.00125)	ND (0.00112)	ND (0.00134)	0.573 (0.0251)	ND (0.00154)	ND (0.403)
Cumene	10000	10000	2500	ND (0.276)	ND (0.0125)	ND (0.0112)	ND (0.0134)	ND (0.251)	ND (0.0154)	5.33 (4.03)
Cyclohexane	10000	10000	6900	ND (0.0276)	ND (0.00125)	0.0639 (0.00112)	ND (0.00134)	ND (0.0251)	ND (0.00154)	4.89 (0.403)
Ethyl Benzene	880	1000	70	ND (0.0276)	ND (0.00125)	ND (0.00112)	ND (0.00134)	ND (0.0251)	ND (0.00154)	ND (0.403)
Hexane	10000	10000	5300	ND (0.276)	ND (0.0125)	ND (0.0112)	ND (0.0134)	ND (0.251)	0.0215 (0.0154)	ND (4.03)
Methyl tert-butyl ether	8500	9800	2	ND (0.0276)	ND (0.00125)	ND (0.00112)	ND (0.00134)	ND (0.0251)	ND (0.00154)	ND (0.403)
Toluene	10000	10000	100	ND (0.138)	ND (0.00626)	ND (0.00562)	ND (0.00672)	ND (0.125)	ND (0.00769)	ND (2.02)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0276)	ND (0.00125)	ND (0.00112)	ND (0.00134)	ND (0.0251)	ND (0.00154)	ND (0.403)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0276)	ND (0.00125)	ND (0.00112)	ND (0.00134)	ND (0.0251)	ND (0.00154)	ND (0.403)
Xylenes (total)	7900	9100	1000	ND (0.0829)	ND (0.00376)	ND (0.00337)	ND (0.00403)	ND (0.0753)	ND (0.00461)	ND (1.21)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.241 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	3.07 (0.74)
Anthracene	190000	190000	350	0.111 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	2.2 (0.74)
Benzo(a)anthracene	130	190000	340	0.0683 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	1.71 (0.74)
Benzo(a)pyrene	91	190000	46	0.0399 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
Benzo(b)fluoranthene	76	190000	170	0.0368 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
Benzo(k)fluoranthene	76	190000	610	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
1,1-Biphenyl	34	40	1.5	ND (0.365)	ND (41.7)	ND (0.374)	ND (22.4)	ND (0.423)	ND (19.1)	ND (7.46)
Chrysene	760	190000	230	0.148 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	2.03 (0.74)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
Fluoranthene	130000	190000	3200	0.107 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	1.85 (0.74)
Fluorene	130000	190000	3800	0.0497 (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	4.75 (0.74)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
2-Methylnaphthalene	240	270	100	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
Naphthalene	66	77	25	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	ND (0.0419)	ND (1.89)	ND (0.74)
Phenanthrene	190000	190000	10000	ND (0.0361)	ND (4.13)	ND (0.0371)	ND (2.22)	0.0474 (0.0419)	ND (1.89)	13.8 (0.74)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.365)	ND (41.7)	ND (0.374)	ND (22.4)	ND (0.423)	ND (19.1)	ND (7.46)
Di-n-butylphthalate	10000	10000	4000	ND (0.365)	ND (41.7)	ND (0.374)	ND (22.4)	ND (0.423)	ND (19.1)	ND (7.46)
Pyrene	96000	190000	2200	0.246 OE (0.0361)	ND,OE (4.13)	ND,OE (0.0371)	ND (2.22)	0.0468 (0.0419)	ND (1.89)	7.56 (0.74)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	7.85 (1.09)	4.84 (1.25)	4.89 (1.12)	9.03 (1.34)	14.9 (1.27)	6.32 (1.15)	5.75 (1.12)
Lead	1000	190000	450	13.7 (0.547)	395 (0.626)	7.93 (0.562)	436 (0.672)	24.4 (0.635)	7.97 (0.574)	129 (0.56)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	18.5 (2.19)	15.7 (2.5)	5.2 (2.25)	45.1 (2.69)	22.3 (2.54)	9.71 (2.29)	28.4 (2.24)
Vanadium	16000	190000	49000	22.9 (2.19)	57.5 (2.5)	15.4 (2.25)	56.2 (2.69)	36 (2.54)	20.1 (2.29)	113 (2.24)
Zinc	190000	190000	12000	33.2 (5.47)	111 (6.26)	14.7 (5.62)	199 (6.72)	56 (6.35)	22.2 B (5.74)	80.4 (5.6)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-037	AOI8-BH-16-037	AOI8-BH-16-038	AOI8-BH-16-038	AOI8-BH-16-039	AOI8-BH-16-039	AOI8-BH-16-040
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-037-0-2-20160725	AOI8-BH-16-037-8-10-20160725	AOI8-BH-16-038-0-2-20160912	AOI8-BH-16-038-10-12-20160912	AOI8-BH-16-039-0-2-20160909	AOI8-BH-16-039-8-10-20160909	AOI8-BH-16-040-0-2-20160808
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	7/25/2016	7/25/2016	9/12/2016	9/12/2016	9/9/2016	9/9/2016	8/8/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.0378 (0.00111)	ND (0.0836)	1.86 (0.158)	ND (0.0232)	9.93 (0.221)	ND (0.227)	0.00204 (0.00115)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	0.0117 (0.0115)
sec-Butylbenzene	10000	10000	2300	ND (0.00111)	0.167 (0.0836)	2.39 (0.158)	1.03 (0.0232)	3.5 (0.221)	2.28 (0.227)	ND (0.00115)
tert-Butylbenzene	10000	10000	1800	ND (0.00111)	ND (0.0836)	17.9 (0.158)	0.105 (0.0232)	29.4 (0.221)	5.61 (0.227)	ND (0.00115)
Cumene	10000	10000	2500	ND (0.0111)	ND (0.836)	2.9 (1.58)	0.655 (0.232)	7.7 (2.21)	6.47 (2.27)	ND (0.0115)
Cyclohexane	10000	10000	6900	ND (0.00111)	ND (0.0836)	1.16 (0.158)	1.48 (0.0232)	4.91 (0.221)	19 (0.227)	ND (0.00115)
Ethyl Benzene	880	1000	70	ND (0.00111)	ND (0.0836)	0.355 (0.158)	0.0445 (0.0232)	1.74 (0.221)	ND (0.227)	ND (0.00115)
Hexane	10000	10000	5300	0.0168 (0.0111)	ND (0.836)	ND (1.58)	ND (0.232)	ND (2.21)	5.04 (2.27)	ND (0.0115)
Methyl tert-butyl ether	8500	9800	2	ND (0.00111)	ND (0.0836)	ND (0.158)	ND (0.0232)	ND (0.221)	ND (0.227)	ND (0.00115)
Toluene	10000	10000	100	ND (0.00557)	ND (0.418)	1.17 (0.791)	ND (0.116)	2.03 (1.1)	ND (1.13)	ND (0.00575)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00111)	ND (0.0836)	51.8 (1.58)	2.01 (0.0232)	58.7 (1.1)	1.47 (0.227)	ND (0.00115)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00111)	ND (0.0836)	10.8 (0.158)	0.0962 (0.0232)	19.3 (0.221)	0.949 (0.227)	ND (0.00115)
Xylenes (total)	7900	9100	1000	ND (0.00334)	ND (0.251)	6.54 (0.475)	0.11 (0.0697)	23.6 (0.662)	ND (0.681)	ND (0.00345)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (1.84)	ND (0.389)	16.2 (4.46)	0.0417 (0.0388)	5.09 (2.32)	0.207 (0.0394)	ND (0.0379)
Anthracene	190000	190000	350	ND (1.84)	0.535 MI (0.389)	4.51 (4.46)	ND (0.0388)	ND (2.32)	0.159 (0.0394)	0.0401 (0.0379)
Benzo(a)anthracene	130	190000	340	ND (1.84)	ND (0.389)	ND (22.3)	ND (0.0388)	ND (2.32)	0.0791 (0.0394)	0.102 (0.0379)
Benzo(a)pyrene	91	190000	46	ND (1.84)	ND (0.389)	ND (4.46)	ND (0.0388)	ND (2.32)	0.0573 (0.0394)	ND (0.19)
Benzo(b)fluoranthene	76	190000	170	ND (1.84)	ND (0.389)	ND (4.46)	ND (0.0388)	ND (2.32)	0.0487 (0.0394)	ND (0.19)
Benzo(g,h,i)perylene	190000	190000	180	ND (1.84)	ND (0.389)	ND (4.46)	ND (0.0388)	ND (2.32)	ND (0.0394)	ND (0.19)
Benzo(k)fluoranthene	76	190000	610	ND (1.84)	ND,OE (0.389)	ND (4.46)	ND (0.0388)	ND (2.32)	ND (0.0394)	ND (0.19)
1,1-Biphenyl	34	40	1.5	ND (18.6)	ND (3.92)	ND (45)	ND (0.392)	ND (23.4)	ND (0.398)	ND (0.383)
Chrysene	760	190000	230	ND (1.84)	0.486 MI (0.389)	ND (22.3)	ND (0.0388)	2.67 (2.32)	0.19 (0.0394)	0.0969 (0.0379)
Dibenz(a,h)anthracene	22	190000	270	ND (1.84)	ND (0.389)	ND (4.46)	ND (0.0388)	ND (2.32)	ND (0.0394)	ND (0.19)
Fluoranthene	130000	190000	3200	ND (1.84)	0.399 MI (0.389)	5.1 (4.46)	ND (0.0388)	ND (2.32)	0.0988 (0.0394)	0.193 (0.0379)
Fluorene	130000	190000	3800	ND (1.84)	0.406 MI,OE (0.389)	19 (4.46)	ND (0.0388)	5.82 (2.32)	0.338 (0.0394)	ND (0.0379)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (1.84)	ND (0.389)	ND (4.46)	ND (0.0388)	ND (2.32)	ND (0.0394)	ND (0.19)
2-Methylnaphthalene	240	270	100	ND (1.84)	ND (0.389)	149 (4.46)	0.509 (0.0388)	68.8 (2.32)	ND (0.0394)	ND (0.0379)
Naphthalene	66	77	25	ND (1.84)	ND (0.389)	16.9 (4.46)	0.0927 (0.0388)	11.1 (2.32)	ND (0.0394)	ND (0.0379)
Phenanthrene	190000	190000	10000	ND (1.84)	1.16 MI (0.389)	54.3 (4.46)	0.0787 (0.0388)	15.9 (2.32)	0.96 (0.0394)	0.134 (0.0379)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (18.6)	ND (3.92)	ND (225)	ND (0.392)	ND (23.4)	ND (0.398)	ND (0.383)
Di-n-butylphthalate	10000	10000	4000	ND (18.6)	ND (3.92)	ND (45)	ND (0.392)	ND (23.4)	ND (0.398)	ND (0.383)
Pyrene	96000	190000	2200	ND (1.84)	0.398 MI (0.389)	ND (22.3)	ND (0.0388)	3.84 OE (2.32)	0.413 (0.0394)	0.176 (0.0379)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	7.79 (1.11)	12.7 (1.18)	16.7 (1.35)	4.85 (1.18)	7.33 (1.41)	4.79 (1.19)	7.58 (1.15)
Lead	1000	190000	450	189 (0.557)	12.3 (0.589)	1420 (0.676)	14.6 (0.588)	891 (0.703)	13.7 (0.597)	22.3 (0.575)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	29.3 (2.23)	17.5 (2.36)	82 (2.7)	13.2 (2.35)	40.1 (2.81)	8.7 (2.39)	8.92 (2.3)
Vanadium	16000	190000	49000	61.3 (2.23)	33 (2.36)	212 (2.7)	34.8 (2.35)	113 (2.81)	21.6 (2.39)	27.5 (2.3)
Zinc	190000	190000	12000	103 (5.57)	43 (5.89)	953 (6.76)	40.4 (5.88)	507 (7.03)	25.6 (5.97)	50.2 (5.75)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-040	AOI8-BH-16-041	AOI8-BH-16-041	AOI8-BH-16-042	AOI8-BH-16-042	AOI8-BH-16-043	AOI8-BH-16-043
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-040-8-10-20160808	AOI8-BH-16-041-0-2-20160808	AOI8-BH-16-041-8-10-20160808	AOI8-BH-16-042-0-2-20160808	AOI8-BH-16-042-8-10-20160808	AOI8-BH-16-043-0-2-20160722	AOI8-BH-16-043-12-13-20160722
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	8.0 - 10.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	12.0 - 13.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/8/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016	7/22/2016	7/22/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00124)	ND (0.00112)	ND (0.0218)	ND (0.00111)	ND (0.00126)	0.0718 (0.00132)	ND (0.491)
2-Butanone	10000	10000	400	ND (0.0124)	0.012 (0.0112)	ND (0.218)	ND (0.0111)	ND (0.0126)	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00124)	ND (0.00112)	0.117 (0.0218)	ND (0.00111)	ND (0.00126)	0.00645 (0.00132)	2.96 (0.491)
tert-Butylbenzene	10000	10000	1800	ND (0.00124)	ND (0.00112)	0.0686 (0.0218)	ND (0.00111)	ND (0.00126)	0.0312 (0.00132)	9.13 (0.491)
Cumene	10000	10000	2500	ND (0.0124)	ND (0.0112)	ND (0.218)	ND (0.0111)	ND (0.0126)	0.0247 (0.0132)	6.83 (4.91)
Cyclohexane	10000	10000	6900	ND (0.00124)	0.00144 (0.00112)	ND (0.0218)	ND (0.00111)	ND (0.00126)	0.00932 (0.00132)	2.72 (0.491)
Ethyl Benzene	880	1000	70	ND (0.00124)	ND (0.00112)	ND (0.0218)	ND (0.00111)	ND (0.00126)	0.0857 (0.00132)	ND (0.491)
Hexane	10000	10000	5300	ND (0.0124)	ND (0.0112)	ND (0.218)	ND (0.0111)	ND (0.0126)	ND (0.0132)	ND (4.91)
Methyl tert-butyl ether	8500	9800	2	ND (0.00124)	ND (0.00112)	ND (0.0218)	ND (0.00111)	ND (0.00126)	ND (0.00132)	ND (0.491)
Toluene	10000	10000	100	ND (0.00622)	ND (0.00558)	ND (0.109)	ND (0.00555)	ND (0.00631)	0.0224 (0.00662)	ND (2.46)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00124)	ND (0.00112)	ND (0.0218)	ND (0.00111)	ND (0.00126)	0.0258 (0.00132)	ND (0.491)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00124)	ND (0.00112)	ND (0.0218)	ND (0.00111)	ND (0.00126)	0.00548 (0.00132)	ND (0.491)
Xylenes (total)	7900	9100	1000	ND (0.00373)	ND (0.00335)	ND (0.0654)	ND (0.00333)	ND (0.00378)	0.0789 (0.00397)	ND (1.47)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	ND (0.0416)	2.57 (0.437)	3.4 (0.4)
Anthracene	190000	190000	350	ND (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	0.0743 (0.0416)	4.44 (0.437)	1.8 (0.4)
Benzo(a)anthracene	130	190000	340	0.0597 (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	0.326 (0.0416)	3.85 (0.437)	0.563 (0.4)
Benzo(a)pyrene	91	190000	46	ND (0.821)	ND (7.36)	ND (0.04)	ND (0.0366)	0.377 (0.0416)	3.59 (0.437)	ND (0.4)
Benzo(b)fluoranthene	76	190000	170	ND (0.821)	ND (7.36)	ND (0.04)	ND (0.0366)	0.639 (0.0416)	3.11 (0.437)	ND (0.4)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.821)	ND (7.36)	ND (0.04)	ND (0.0366)	0.0606 (0.0416)	1.76 (0.437)	ND (0.4)
Benzo(k)fluoranthene	76	190000	610	ND (0.821)	ND (7.36)	ND (0.04)	ND (0.0366)	0.22 (0.0416)	0.872 (0.437)	ND (0.4)
1,1-Biphenyl	34	40	1.5	ND (0.414)	ND (74.3)	ND (0.403)	ND (0.369)	ND (0.42)	ND (4.41)	ND (4.04)
Chrysene	760	190000	230	0.094 (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	0.377 (0.0416)	4.42 (0.437)	0.715 (0.4)
Dibenz(a,h)anthracene	22	190000	270	ND (0.821)	ND (7.36)	ND (0.04)	ND (0.0366)	ND (0.0416)	0.483 (0.437)	ND (0.4)
Fluoranthene	130000	190000	3200	0.121 (0.0411)	ND (7.36)	0.116 (0.04)	ND (0.0366)	0.576 (0.0416)	7.61 (0.437)	0.844 (0.4)
Fluorene	130000	190000	3800	ND (0.0411)	ND (7.36)	0.0732 (0.04)	ND (0.0366)	0.0491 (0.0416)	4.23 (0.437)	4.24 (0.4)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.821)	ND (7.36)	ND (0.04)	ND (0.0366)	0.0646 (0.0416)	1.25 (0.437)	ND (0.4)
2-Methylnaphthalene	240	270	100	ND (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	0.118 (0.0416)	1.26 (0.437)	ND (0.4)
Naphthalene	66	77	25	ND (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	0.143 (0.0416)	2.87 (0.437)	ND (0.4)
Phenanthrene	190000	190000	10000	ND (0.0411)	ND (7.36)	ND (0.04)	ND (0.0366)	0.341 (0.0416)	16.1 (0.437)	12.2 (0.4)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.414)	ND (74.3)	ND (0.403)	ND (0.369)	ND (0.42)	ND (4.41)	ND (4.04)
Di-n-butylphthalate	10000	10000	4000	ND (0.414)	ND (74.3)	ND (0.403)	ND (0.369)	ND (0.42)	ND (4.41)	ND (4.04)
Pyrene	96000	190000	2200	0.325 (0.0411)	ND (7.36)	0.0725 (0.04)	ND (0.0366)	0.547 (0.0416)	10.9 (0.437)	2.97 (0.4)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	4.06 (1.24)	4.97 (1.12)	10 (1.21)	4.7 (1.11)	6.28 (1.26)	7.49 (1.32)	10.5 (1.21)
Lead	1000	190000	450	50.5 (0.622)	21.1 (0.558)	5.89 (0.606)	16 (0.555)	265 (0.631)	97.9 (0.662)	11.1 (0.606)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	7.86 (2.49)	6.2 (2.23)	6.01 (2.42)	5.35 (2.22)	10.5 (2.52)	18.8 (2.65)	17 (2.43)
Vanadium	16000	190000	49000	19.4 (2.49)	16.1 (2.23)	13.1 (2.42)	13.3 (2.22)	36 (2.52)	48.8 (2.65)	31.1 (2.43)
Zinc	190000	190000	12000	66.1 (6.22)	33 (5.58)	19 B (6.06)	23.7 (5.55)	216 (6.31)	82.3 (6.62)	44.9 (6.06)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-044	AOI8-BH-16-044	AOI8-BH-16-045	AOI8-BH-16-045	AOI8-BH-16-046	AOI8-BH-16-046	AOI8-BH-16-047
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-044-0-2-20160912	AOI8-BH-16-044-10-12-20160912	AOI8-BH-16-045-0-2-20160816	AOI8-BH-16-045-10-12-20160816	AOI8-BH-16-046-0-2-20160818	AOI8-BH-16-046-8-10-20160818	AOI8-BH-16-047-0-2-20160824
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/12/2016	9/12/2016	8/16/2016	8/16/2016	8/18/2016	8/18/2016	8/24/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00122)	ND (0.0265)	0.00208 (0.00112)	ND (0.137)	0.00177 (0.00117)	ND (0.00119)	ND (0.0013)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00122)	ND (0.0265)	0.0017 (0.00112)	1.02 (0.137)	ND (0.00117)	ND (0.00119)	ND (0.0013)
tert-Butylbenzene	10000	10000	1800	ND (0.00122)	0.0966 (0.0265)	ND (0.00112)	0.286 (0.137)	ND (0.00117)	ND (0.00119)	0.00188 (0.0013)
Cumene	10000	10000	2500	ND (0.0122)	ND (0.265)	ND (0.0112)	1.74 (1.37)	ND (0.0117)	ND (0.0119)	ND (0.013)
Cyclohexane	10000	10000	6900	ND (0.00122)	ND (0.0265)	ND (0.00112)	2.83 (0.137)	ND (0.00117)	ND (0.00119)	ND (0.0013)
Ethyl Benzene	880	1000	70	ND (0.00122)	ND (0.0265)	ND (0.00112)	0.375 (0.137)	ND (0.00117)	ND (0.00119)	ND (0.0013)
Hexane	10000	10000	5300	ND (0.0122)	ND (0.265)	ND (0.0112)	2.19 (1.37)	ND (0.0117)	ND (0.0119)	ND (0.013)
Methyl tert-butyl ether	8500	9800	2	ND (0.00122)	ND (0.0265)	ND (0.00112)	ND (0.137)	ND (0.00117)	ND (0.00119)	ND (0.0013)
Toluene	10000	10000	100	ND (0.00612)	ND (0.132)	ND (0.00558)	ND (0.685)	ND (0.00585)	ND (0.00595)	ND (0.00651)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00122)	ND (0.0265)	ND (0.00112)	ND (0.137)	ND (0.00117)	ND (0.00119)	ND (0.0013)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00122)	ND (0.0265)	ND (0.00112)	ND (0.137)	ND (0.00117)	ND (0.00119)	ND (0.0013)
Xylenes (total)	7900	9100	1000	ND (0.00367)	ND (0.0794)	ND (0.00335)	1.32 (0.411)	ND (0.00351)	ND (0.00357)	ND (0.00391)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.202)	0.143 (0.0364)	ND (3.68)	0.445 (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Anthracene	190000	190000	350	ND (0.202)	ND (0.364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Benzo(a)anthracene	130	190000	340	ND (0.202)	ND (0.364)	ND (3.68)	0.225 (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Benzo(a)pyrene	91	190000	46	ND (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	0.129 (0.0859)
Benzo(b)fluoranthene	76	190000	170	ND (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	0.122 (0.0859)
Benzo(g,h,i)perylene	190000	190000	180	0.217 (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	0.0987 (0.0859)
Benzo(k)fluoranthene	76	190000	610	ND (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
1,1-Biphenyl	34	40	1.5	ND (2.04)	ND (0.367)	ND (37.1)	ND (2.02)	ND (0.39)	ND (0.396)	ND (0.867)
Chrysene	760	190000	230	ND (0.202)	ND (0.364)	ND (3.68)	0.371 (0.2)	ND (0.0386)	ND (0.0393)	0.115 (0.0859)
Dibenz(a,h)anthracene	22	190000	270	ND (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Fluoranthene	130000	190000	3200	ND (0.202)	ND (0.364)	ND (3.68)	0.246 (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Fluorene	130000	190000	3800	ND (0.202)	0.117 (0.0364)	ND (3.68)	0.733 (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
2-Methylnaphthalene	240	270	100	ND (0.202)	ND (0.0364)	ND (3.68)	0.468 (0.2)	ND (0.0386)	ND (0.0393)	0.135 (0.0859)
Naphthalene	66	77	25	ND (0.202)	ND (0.0364)	ND (3.68)	ND (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
Phenanthrene	190000	190000	10000	0.226 (0.202)	ND (0.364)	ND (3.68)	1.59 (0.2)	ND (0.0386)	ND (0.0393)	ND (0.0859)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (2.04)	ND (3.67)	ND (37.1)	ND (2.02)	ND (0.39)	ND (0.396)	ND (0.867)
Di-n-butylphthalate	10000	10000	4000	ND (2.04)	ND (3.67)	ND (37.1)	ND (2.02)	ND (0.39)	ND (0.396)	ND (0.867)
Pyrene	96000	190000	2200	ND (0.202)	ND (0.364)	ND (3.68)	0.56 (0.2)	ND (0.0386)	ND (0.0393)	0.0992 (0.0859)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	6.83 (1.22)	2.7 (1.1)	6.45 (1.12)	7.58 (1.21)	9.53 (1.17)	4.74 (1.19)	10.9 (1.3)
Lead	1000	190000	450	349 (0.612)	4.1 (0.552)	124 (0.558)	45.7 (0.606)	30.8 (0.585)	8.92 (0.595)	79 (0.651)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	40.5 (2.45)	18.2 (2.21)	14.2 (2.23)	12.6 (2.43)	12.4 (2.34)	9.08 (2.38)	24.8 (2.6)
Vanadium	16000	190000	49000	111 (2.45)	15.4 (2.21)	40.6 (2.23)	28.5 (2.43)	36.3 (2.34)	17.7 (2.38)	39.3 (2.6)
Zinc	190000	190000	12000	84.5 (6.12)	15.6 B (5.52)	391 (5.58)	72.1 (6.06)	48.6 (5.85)	25.8 (5.95)	92.2 (6.51)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-047	AOI8-BH-16-048	AOI8-BH-16-048	AOI8-BH-16-049	AOI8-BH-16-049	AOI8-BH-16-050	AOI8-BH-16-050
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-047-4-6-20160824	AOI8-BH-16-048-0-2-20160816	AOI8-BH-16-048-8-10-20160816	AOI8-BH-16-049-0-2-20160816	AOI8-BH-16-049-10-12-20160816	AOI8-BH-16-050-0-2-20160818	AOI8-BH-16-050-12-13-20160818
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	4.0 - 6.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	12.0 - 13.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/24/2016	8/16/2016	8/16/2016	8/16/2016	8/16/2016	8/18/2016	8/18/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00132)	0.00229 (0.00111)	0.00155 (0.00122)	0.00488 (0.00121)	ND (0.0301)	ND (0.00125)	ND (0.0012)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00132)	ND (0.00111)	0.00159 (0.00122)	ND (0.00121)	0.654 (0.0301)	ND (0.00125)	ND (0.0012)
tert-Butylbenzene	10000	10000	1800	0.00179 (0.00132)	ND (0.00111)	ND (0.00122)	ND (0.00121)	0.364 (0.0301)	ND (0.00125)	ND (0.0012)
Cumene	10000	10000	2500	ND (0.0132)	ND (0.0111)	ND (0.0122)	ND (0.0121)	1.79 (0.301)	ND (0.0125)	ND (0.012)
Cyclohexane	10000	10000	6900	ND (0.00132)	ND (0.00111)	ND (0.00122)	ND (0.00121)	0.238 (0.0301)	ND (0.00125)	ND (0.0012)
Ethyl Benzene	880	1000	70	ND (0.00132)	ND (0.00111)	ND (0.00122)	ND (0.00121)	0.0397 (0.0301)	ND (0.00125)	ND (0.0012)
Hexane	10000	10000	5300	ND (0.0132)	ND (0.0111)	ND (0.0122)	ND (0.0121)	0.374 (0.301)	ND (0.0125)	ND (0.012)
Methyl tert-butyl ether	8500	9800	2	ND (0.00132)	ND (0.00111)	ND (0.00122)	ND (0.00121)	ND (0.0301)	ND (0.00125)	ND (0.0012)
Toluene	10000	10000	100	ND (0.00662)	ND (0.00557)	ND (0.00608)	ND (0.00607)	ND (0.151)	ND (0.00625)	ND (0.00601)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00132)	ND (0.00111)	ND (0.00122)	ND (0.00121)	0.59 (0.0301)	ND (0.00125)	ND (0.0012)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00132)	ND (0.00111)	ND (0.00122)	ND (0.00121)	0.473 (0.0301)	ND (0.00125)	ND (0.0012)
Xylenes (total)	7900	9100	1000	ND (0.00397)	ND (0.00334)	ND (0.00365)	ND (0.00364)	0.88 (0.0903)	ND (0.00375)	ND (0.00361)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.0955 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
Anthracene	190000	190000	350	0.456 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
Benzo(a)anthracene	130	190000	340	1.04 (0.0874)	ND (1.84)	ND (0.0803)	0.216 (0.2)	0.962 (0.406)	ND (0.206)	0.249 (0.198)
Benzo(a)pyrene	91	190000	46	0.827 (0.0874)	ND (1.84)	ND (0.0803)	0.251 (0.2)	0.822 (0.406)	ND (0.206)	ND (0.198)
Benzo(b)fluoranthene	76	190000	170	1.09 (0.0874)	ND (1.84)	ND (0.0803)	0.322 (0.2)	0.434 (0.406)	ND (0.206)	0.288 (0.198)
Benzo(g,h,i)perylene	190000	190000	180	0.292 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
Benzo(k)fluoranthene	76	190000	610	0.404 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
1,1-Biphenyl	34	40	1.5	ND (0.882)	ND (18.5)	ND (0.81)	ND (2.02)	ND (4.09)	ND (2.08)	ND (2)
Chrysene	760	190000	230	0.935 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	1.9 (0.406)	ND (0.206)	0.229 (0.198)
Dibenz(a,h)anthracene	22	190000	270	0.138 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
Fluoranthene	130000	190000	3200	1.94 (0.0874)	3.19 (1.84)	ND (0.0803)	0.284 (0.2)	ND (0.406)	ND (0.206)	0.601 (0.198)
Fluorene	130000	190000	3800	0.157 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
Indeno(1,2,3-cd)pyrene	76	190000	18000	0.301 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
2-Methylnaphthalene	240	270	100	0.176 (0.0874)	ND (1.84)	ND (0.0803)	ND (0.2)	0.561 (0.406)	ND (0.206)	ND (0.198)
Naphthalene	66	77	25	0.236 (0.0874)	ND (1.84)	ND (0.0803)	0.241 (0.2)	ND (0.406)	ND (0.206)	ND (0.198)
Phenanthrene	190000	190000	10000	1.3 (0.0874)	3.32 (1.84)	ND (0.0803)	ND (0.2)	1.46 (0.406)	0.235 (0.206)	0.561 (0.198)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.882)	ND (18.5)	ND (0.81)	ND (2.02)	ND (4.09)	ND (2.08)	ND (2)
Di-n-butylphthalate	10000	10000	4000	ND (0.882)	ND (18.5)	ND (0.81)	ND (2.02)	ND (4.09)	ND (2.08)	ND (2)
Pyrene	96000	190000	2200	1.45 (0.0874)	2.23 (1.84)	ND (0.0803)	0.23 (0.2)	1.26 (0.406)	0.23 (0.206)	0.394 (0.198)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	10.7 (1.32)	16.1 (1.11)	7.3 (1.22)	12.1 (1.21)	5.33 (1.23)	7.87 (1.25)	6.85 (1.2)
Lead	1000	190000	450	116 (0.662)	380 (0.557)	33.4 (0.608)	175 (0.607)	10.4 (0.615)	405 (0.625)	54 (0.601)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	25 (2.65)	38.7 (2.23)	12.1 (2.43)	33.7 (2.43)	8.44 (2.46)	15.3 (2.5)	11.6 (2.4)
Vanadium	16000	190000	49000	40.3 (2.65)	69.6 (2.23)	36.7 (2.43)	180 (2.43)	23.3 (2.46)	48.3 (2.5)	26.3 (2.4)
Zinc	190000	190000	12000	110 (6.62)	531 (5.57)	73.8 (6.08)	423 (6.07)	30 (6.15)	103 (6.25)	53.4 (6.01)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-051	AOI8-BH-16-051	AOI8-BH-16-052	AOI8-BH-16-052	AOI8-BH-16-053	AOI8-BH-16-053	AOI8-BH-16-054
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-051-0-2-20160913	AOI8-BH-16-051-12-14-20160913	AOI8-BH-16-052-0-2-20160819	AOI8-BH-16-052-10-12-20160902	AOI8-BH-16-053-0-2-20160817	AOI8-BH-16-053-12-13-20160817	AOI8-BH-16-054-0-2-20160809
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	12.0 - 14.0	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	12.0 - 13.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/13/2016	9/13/2016	8/19/2016	9/2/2016	8/17/2016	8/17/2016	8/9/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00131)	ND (0.00125)	ND (0.00113)	ND (0.3)	ND (0.0263)	ND (0.0297)	0.00134 (0.00124)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00131)	ND (0.00125)	0.00125 (0.00113)	2.76 (0.3)	0.721 (0.0263)	ND (0.0297)	0.00128 (0.00124)
tert-Butylbenzene	10000	10000	1800	ND (0.00131)	ND (0.00125)	ND (0.00113)	ND (0.3)	ND (0.0263)	ND (0.0297)	ND (0.00124)
Cumene	10000	10000	2500	ND (0.0131)	ND (0.0125)	ND (0.0113)	ND (3)	0.575 (0.263)	ND (0.297)	ND (0.0124)
Cyclohexane	10000	10000	6900	ND (0.00131)	ND (0.00125)	0.0146 (0.00113)	ND (0.3)	ND (0.0263)	ND (0.0297)	ND (0.00124)
Ethyl Benzene	880	1000	70	ND (0.00131)	ND (0.00125)	ND (0.00113)	ND (0.3)	0.114 (0.0263)	ND (0.0297)	ND (0.00124)
Hexane	10000	10000	5300	ND (0.0131)	ND (0.0125)	ND (0.0113)	ND (3)	ND,MI (0.263)	ND (0.297)	ND (0.0124)
Methyl tert-butyl ether	8500	9800	2	ND (0.00131)	ND (0.00125)	ND (0.00113)	ND (0.3)	ND (0.0263)	ND (0.0297)	ND (0.00124)
Toluene	10000	10000	100	ND (0.00654)	ND (0.00626)	ND (0.00564)	ND (1.5)	ND (0.132)	ND (0.149)	ND (0.00618)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00131)	ND (0.00125)	ND (0.00113)	ND (0.3)	0.24 (0.0263)	ND (0.0297)	ND (0.00124)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00131)	ND (0.00125)	ND (0.00113)	ND (0.3)	0.0549 (0.0263)	ND (0.0297)	ND (0.00124)
Xylenes (total)	7900	9100	1000	ND (0.00392)	ND (0.00376)	ND (0.00338)	ND (0.9)	0.451 (0.079)	ND (0.0891)	ND (0.00371)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.0431)	ND (0.0413)	ND (3.72)	0.105 (0.0396)	ND (0.0404)	0.221 (0.04)	0.184 (0.0408)
Anthracene	190000	190000	350	ND (0.0431)	ND (0.0413)	ND (3.72)	0.0669 (0.0396)	ND (0.0404)	0.0612 (0.04)	0.0588 (0.0408)
Benzo(a)anthracene	130	190000	340	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	ND (0.0404)	0.0574 (0.04)	ND (0.0408)
Benzo(a)pyrene	91	190000	46	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	0.0405 (0.0404)	ND (0.04)	ND (0.0408)
Benzo(b)fluoranthene	76	190000	170	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	0.0465 (0.0404)	ND (0.04)	ND (0.0408)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	ND (0.0404)	ND (0.04)	ND (0.0408)
Benzo(k)fluoranthene	76	190000	610	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	ND (0.0404)	ND (0.04)	ND (0.0408)
1,1-Biphenyl	34	40	1.5	ND (0.435)	ND (0.417)	ND (37.6)	ND (0.4)	ND (0.408)	ND (0.404)	ND (0.412)
Chrysene	760	190000	230	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	0.0626 (0.0404)	0.118 (0.04)	0.0668 (0.0408)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	ND (0.0404)	ND (0.04)	ND (0.0408)
Fluoranthene	130000	190000	3200	ND (0.0431)	ND (0.0413)	ND (3.72)	0.053 (0.0396)	0.0566 (0.0404)	0.116 (0.04)	0.059 (0.0408)
Fluorene	130000	190000	3800	ND (0.0431)	ND (0.0413)	ND (3.72)	0.13 (0.0396)	ND (0.0404)	0.311 (0.04)	0.181 (0.0408)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0431)	ND (0.0413)	ND (3.72)	ND (0.0396)	ND (0.0404)	ND (0.04)	ND (0.0408)
2-Methylnaphthalene	240	270	100	ND (0.0431)	ND (0.0413)	ND (3.72)	0.0958 (0.0396)	0.0618 (0.0404)	ND (0.04)	0.189 (0.0408)
Naphthalene	66	77	25	ND (0.0431)	ND (0.0413)	ND (3.72)	0.186 (0.0396)	0.123 (0.0404)	0.0848 (0.04)	ND (0.0408)
Phenanthrene	190000	190000	10000	ND (0.0431)	ND (0.0413)	ND (3.72)	0.244 (0.0396)	0.0678 (0.0404)	0.673 (0.04)	0.417 (0.0408)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.435)	ND (0.417)	ND (37.6)	ND (0.4)	ND (0.408)	ND (0.404)	ND (0.412)
Di-n-butylphthalate	10000	10000	4000	ND (0.435)	ND (0.417)	ND (37.6)	ND (0.4)	ND (0.408)	ND (0.404)	ND (0.412)
Pyrene	96000	190000	2200	ND (0.0431)	ND (0.0413)	ND (3.72)	0.116 (0.0396)	0.0594 (0.0404)	0.18 (0.04)	0.13 (0.0408)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	6.49 (1.31)	7.56 (1.25)	11.6 (1.13)	6.04 (1.2)	2.95 (1.22)	4.94 (1.21)	5.7 (1.24)
Lead	1000	190000	450	10.3 (0.654)	11.8 (0.626)	453 (0.564)	7.54 (0.6)	87.1 (0.612)	15.2 (0.606)	95.9 (0.618)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	14.7 (2.61)	15.8 (2.5)	152 (2.26)	28.1 (2.4)	11.6 (2.45)	8.01 (2.43)	14.7 (2.47)
Vanadium	16000	190000	49000	35.5 (2.61)	31.6 (2.5)	169 (2.26)	18.5 (2.4)	25.7 (2.45)	26.3 (2.43)	36.8 (2.47)
Zinc	190000	190000	12000	39.5 (6.54)	42.5 (6.26)	402 (5.64)	50.7 (6)	68.8 (6.12)	27.6 (6.06)	109 (6.18)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-054	AOI8-BH-16-055	AOI8-BH-16-055	AOI8-BH-16-056	AOI8-BH-16-056	AOI8-BH-16-056	AOI8-BH-16-056
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-054-10-12-20160809	AOI8-BH-16-055-0-2-20160809	AOI8-BH-16-055-8-10-20160815	AOI8-BH-16-056-0-2-20160720	AOI8-BH-16-056-0-2-20160720-DUP	AOI8-BH-16-056-12-13-20160720	AOI8-BH-16-056-12-13-20160720-DUP
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	10.0 - 12.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0	0.0 - 2.0	12.0 - 13.0	12.0 - 13.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/9/2016	8/9/2016	8/15/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016
Comments	MSCs	MSCs	MSCs					Field Duplicate		Field Duplicate
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00122)	0.397 (0.0274)	0.0942 (0.0138)	0.00305 (0.00118)	0.00192 (0.0012)	ND (0.0394)	ND (0.0381)
2-Butanone	10000	10000	400	NA	NA	NA	ND (0.0118)	ND (0.012)	ND (0.394)	ND (0.381)
sec-Butylbenzene	10000	10000	2300	0.00561 (0.00122)	0.111 (0.0274)	0.0342 (0.0138)	ND (0.00118)	ND (0.0012)	ND (0.0394)	ND (0.0381)
tert-Butylbenzene	10000	10000	1800	ND (0.00122)	0.681 (0.0274)	ND (0.0138)	ND (0.00118)	ND (0.0012)	ND (0.0394)	ND (0.0381)
Cumene	10000	10000	2500	ND (0.0122)	ND (0.274)	ND (0.138)	ND (0.0118)	ND (0.012)	ND (0.394)	ND (0.381)
Cyclohexane	10000	10000	6900	0.00236 (0.00122)	ND (0.0274)	0.229 (0.0138)	ND (0.00118)	ND (0.0012)	ND (0.0394)	ND (0.0381)
Ethyl Benzene	880	1000	70	ND (0.00122)	0.0852 (0.0274)	0.0482 (0.0138)	ND (0.00118)	ND (0.0012)	ND (0.0394)	ND (0.0381)
Hexane	10000	10000	5300	ND (0.0122)	ND (0.274)	0.416 (0.138)	ND (0.0118)	ND (0.012)	ND (0.394)	ND (0.381)
Methyl tert-butyl ether	8500	9800	2	ND (0.00122)	ND (0.0274)	ND (0.0138)	ND (0.00118)	ND (0.0012)	0.0669 (0.0394)	0.0881 (0.0381)
Toluene	10000	10000	100	ND (0.00611)	0.196 (0.137)	0.176 (0.0692)	ND (0.0059)	ND (0.00601)	ND (0.197)	ND (0.191)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00122)	0.179 (0.0274)	0.163 (0.0138)	ND (0.00118)	ND (0.0012)	ND (0.0394)	ND (0.0381)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00122)	ND (0.0274)	0.0382 (0.0138)	ND (0.00118)	ND (0.0012)	ND (0.0394)	ND (0.0381)
Xylenes (total)	7900	9100	1000	ND (0.00367)	0.346 (0.0823)	0.362 (0.0415)	ND (0.00354)	ND (0.00361)	ND (0.118)	ND (0.114)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.09 (0.0404)	3.5 (1.99)	ND (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Anthracene	190000	190000	350	0.129 (0.0404)	ND (1.99)	ND (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Benzo(a)anthracene	130	190000	340	0.124 (0.0404)	2.65 (1.99)	0.505 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Benzo(a)pyrene	91	190000	46	ND (0.0404)	ND (3.98)	0.475 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Benzo(b)fluoranthene	76	190000	170	ND (0.0404)	ND (3.98)	0.667 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0404)	ND (3.98)	0.148 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Benzo(k)fluoranthene	76	190000	610	ND (0.0404)	ND (3.98)	0.205 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
1,1-Biphenyl	34	40	1.5	ND (0.407)	ND (20.1)	ND (0.392)	ND (1.84)	ND (0.4)	ND (0.381)	ND (0.373)
Chrysene	760	190000	230	0.206 (0.0404)	3.67 (1.99)	0.481 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0404)	ND (3.98)	0.0679 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Fluoranthene	130000	190000	3200	0.184 (0.0404)	4.99 (1.99)	0.572 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Fluorene	130000	190000	3800	0.159 (0.0404)	5.95 (1.99)	ND (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0404)	ND (3.98)	0.17 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
2-Methylnaphthalene	240	270	100	0.877 (0.0404)	2.09 (1.99)	0.102 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Naphthalene	66	77	25	ND (0.0404)	ND (1.99)	0.0498 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Phenanthrene	190000	190000	10000	1.07 (0.0404)	ND (1.99)	0.0797 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.407)	ND (20.1)	ND (0.392)	ND (1.84)	ND (0.4)	ND (0.381)	ND (0.373)
Di-n-butylphthalate	10000	10000	4000	ND (0.407)	ND (20.1)	ND (0.392)	ND (1.84)	ND (0.4)	ND (0.381)	ND (0.373)
Pyrene	96000	190000	2200	0.579 (0.0404)	11.8 (1.99)	0.365 (0.0389)	ND (0.182)	ND (0.0397)	ND (0.0377)	ND (0.037)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	3.32 (1.22)	11.2 (1.21)	5.62 (1.18)	6.02 (1.1)	6.7 (1.2)	6.36 (1.14)	3.81 (1.12)
Lead	1000	190000	450	4.36 (0.611)	625 (0.603)	19.7 (0.589)	18.7 (0.552)	17.9 (0.601)	47.1 (0.572)	5.06 (0.56)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	5.96 (2.45)	44.6 (2.41)	8.64 (2.36)	10.5 (2.21)	11.2 (2.41)	10.8 (2.29)	7.53 (2.24)
Vanadium	16000	190000	49000	10.5 (2.45)	83.1 (2.41)	23 (2.36)	24.6 (2.21)	24.1 (2.41)	26.5 (2.29)	13 (2.24)
Zinc	190000	190000	12000	19.2 B (6.11)	317 (6.03)	60.2 (5.89)	37.3 (5.52)	38 (6.01)	50.6 (5.72)	26.1 (5.6)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-057	AOI8-BH-16-057	AOI8-BH-16-058	AOI8-BH-16-058	AOI8-BH-16-059	AOI8-BH-16-059	AOI8-BH-16-060
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-057-0-2-20160818	AOI8-BH-16-057-12-13-20160819	AOI8-BH-16-058-0-2-20160912	AOI8-BH-16-058-12-14-20160912	AOI8-BH-16-059-0-2-20160811	AOI8-BH-16-059-6-8-20160915	AOI8-BH-16-060-0-2-20160811
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	12.0 - 13.0	0.0 - 2.0	12.0 - 14.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/18/2016	8/19/2016	9/12/2016	9/12/2016	8/11/2016	9/15/2016	8/11/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.0246)	ND (0.00112)	ND (0.00128)	0.00494 (0.00132)	ND (0.00183)	ND (0.00134)	ND (0.0387)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	0.0817 (0.0246)	0.00699 (0.00112)	ND (0.00128)	ND (0.00132)	ND (0.00133)	ND (0.00134)	ND (0.00141)
tert-Butylbenzene	10000	10000	1800	ND (0.0246)	ND (0.00112)	ND (0.00128)	ND (0.00132)	ND (0.00133)	ND (0.00134)	ND (0.00141)
Cumene	10000	10000	2500	ND (0.246)	ND (0.0112)	ND (0.0128)	ND (0.0132)	ND (0.0133)	ND (0.0134)	ND (0.0141)
Cyclohexane	10000	10000	6900	ND (0.0246)	ND (0.00112)	0.0018 (0.00128)	ND (0.00132)	ND (0.00133)	ND (0.00134)	ND (0.00141)
Ethyl Benzene	880	1000	70	ND (0.0246)	ND (0.00112)	ND (0.00128)	ND (0.00132)	ND (0.00183)	ND (0.00134)	ND (0.0387)
Hexane	10000	10000	5300	ND (0.246)	ND (0.0112)	ND (0.0128)	ND (0.0132)	ND (0.0183)	ND (0.0134)	ND (0.387)
Methyl tert-butyl ether	8500	9800	2	ND (0.0246)	ND (0.00112)	ND (0.00128)	ND (0.00132)	ND (0.00133)	ND (0.00134)	ND (0.00141)
Toluene	10000	10000	100	ND (0.123)	ND (0.00559)	ND (0.00638)	ND (0.00662)	ND (0.00914)	ND (0.00671)	0.986 (0.193)
1,2,4-Trimethylbenzene	4700	5400	300	0.0454 (0.0246)	ND (0.00112)	ND (0.00128)	ND (0.00132)	ND (0.00183)	0.00152 (0.00134)	ND (0.00141)
1,3,5-Trimethylbenzene	4700	5400	93	0.0358 (0.0246)	ND (0.00112)	ND (0.00128)	ND (0.00132)	ND (0.00133)	ND (0.00134)	ND (0.00141)
Xylenes (total)	7900	9100	1000	ND (0.0739)	ND (0.00336)	ND (0.00383)	ND (0.00397)	ND (0.00548)	ND (0.00403)	ND (0.116)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.0407)	0.166 (0.0369)	ND (0.0421)	ND (0.0437)	ND (8.81)	ND (0.0443)	ND (0.464)
Anthracene	190000	190000	350	ND (0.0407)	0.0665 (0.0369)	ND (0.0421)	0.0735 (0.0437)	ND (8.81)	0.0551 (0.0443)	ND (0.464)
Benzo(a)anthracene	130	190000	340	ND (0.0407)	0.038 (0.0369)	ND (0.0421)	0.528 (0.0437)	ND (8.81)	0.279 (0.0443)	2.08 (0.464)
Benzo(a)pyrene	91	190000	46	ND (0.0407)	ND (0.0369)	0.0426 (0.0421)	0.545 (0.0437)	ND (8.81)	0.257 (0.0443)	2.02 (0.929)
Benzo(b)fluoranthene	76	190000	170	ND (0.0407)	ND (0.0369)	0.0591 (0.0421)	0.747 (0.0437)	ND (8.81)	0.366 (0.0443)	3.14 (0.929)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0407)	ND (0.0369)	ND (0.0421)	0.168 (0.0437)	ND (8.81)	0.0995 (0.0443)	ND (0.929)
Benzo(k)fluoranthene	76	190000	610	ND (0.0407)	ND (0.0369)	ND (0.0421)	0.23 (0.0437)	ND (8.81)	0.145 (0.0443)	1.01 (0.929)
1,1-Biphenyl	34	40	1.5	ND (0.41)	ND (0.372)	ND (0.425)	ND (0.441)	ND (88.9)	ND (0.447)	ND (4.69)
Chrysene	760	190000	230	ND (0.0407)	0.072 (0.0369)	ND (0.0421)	0.464 (0.0437)	ND (8.81)	0.233 (0.0443)	1.77 (0.464)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0407)	ND (0.0369)	ND (0.0421)	0.0681 (0.0437)	ND (8.81)	ND (0.0443)	ND (0.929)
Fluoranthene	130000	190000	3200	ND (0.0407)	0.0565 (0.0369)	ND (0.0421)	0.968 (0.0437)	ND (8.81)	0.456 (0.0443)	3.71 (0.464)
Fluorene	130000	190000	3800	0.101 (0.0407)	0.255 (0.0369)	ND (0.0421)	ND (0.0437)	ND (8.81)	ND (0.0443)	ND (0.464)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0407)	ND (0.0369)	ND (0.0421)	0.181 (0.0437)	ND (8.81)	0.103 (0.0443)	ND (0.929)
2-Methylnaphthalene	240	270	100	0.12 (0.0407)	0.0669 (0.0369)	ND (0.0421)	ND (0.0437)	ND (8.81)	ND (0.0443)	ND (0.464)
Naphthalene	66	77	25	ND (0.0407)	ND (0.0369)	ND (0.0421)	ND (0.0437)	ND (8.81)	ND (0.0443)	ND (0.464)
Phenanthrene	190000	190000	10000	0.211 (0.0407)	0.834 (0.0369)	ND (0.0421)	0.258 (0.0437)	ND (8.81)	0.237 (0.0443)	1.94 (0.464)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.41)	ND (0.372)	ND (0.425)	ND (0.441)	ND (88.9)	ND (0.447)	ND (4.69)
Di-n-butylphthalate	10000	10000	4000	ND (0.41)	ND (0.372)	ND (0.425)	ND (0.441)	ND (88.9)	ND (0.447)	ND (4.69)
Pyrene	96000	190000	2200	ND (0.0407)	0.138 (0.0369)	ND (0.0421)	0.705 (0.0437)	ND (8.81)	0.379 (0.0443)	3.7 (0.464)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	8.01 (1.23)	3.51 (1.12)	9.65 (1.28)	5.03 (1.32)	20.3 (13.3)	2.05 (1.34)	9.73 (1.41)
Lead	1000	190000	450	10.6 (0.616)	3.87 (0.559)	121 (0.638)	371 (0.662)	95000 (6.67)	152 (0.671)	2650 (0.703)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	14.1 (2.46)	6.15 (2.24)	14.9 (2.55)	12.7 (2.65)	211 (26.7)	12 (2.69)	24.6 (2.81)
Vanadium	16000	190000	49000	29.1 (2.46)	10.2 (2.24)	35.9 (2.55)	28.6 (2.65)	47.5 (26.7)	6.45 (2.69)	36.6 (2.81)
Zinc	190000	190000	12000	51.6 (6.16)	29.2 B (5.59)	74.5 (6.38)	149 (6.62)	4510 (66.7)	288 (6.71)	2430 (70.3)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-060	AOI8-BH-16-061	AOI8-BH-16-061	AOI8-BH-16-062	AOI8-BH-16-062	AOI8-BH-16-063	AOI8-BH-16-063
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-060-4-6-20160916	AOI8-BH-16-061-0-2-20160811	AOI8-BH-16-061-6-8-20160916	AOI8-BH-16-062-0-2-20160913	AOI8-BH-16-062-12-14-20160913	AOI8-BH-16-063-0-2-20160914	AOI8-BH-16-063-12-14-20160914
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	4.0 - 6.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	12.0 - 14.0	0.0 - 2.0	12.0 - 14.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	9/16/2016	8/11/2016	9/16/2016	9/13/2016	9/13/2016	9/14/2016	9/14/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	ND (0.00124)	ND (0.00112)	0.00177 (0.00152)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	ND (0.00124)	ND (0.00112)	ND (0.00152)
tert-Butylbenzene	10000	10000	1800	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	ND (0.00124)	ND (0.00112)	ND (0.00152)
Cumene	10000	10000	2500	ND (0.0156)	ND (0.0394)	ND (0.0131)	ND (0.0127)	ND (0.0124)	ND (0.0112)	ND (0.0152)
Cyclohexane	10000	10000	6900	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	ND (0.00124)	ND (0.00112)	ND (0.00152)
Ethyl Benzene	880	1000	70	ND (0.00156)	ND (0.00298)	ND (0.00131)	ND (0.00127)	ND (0.00124)	ND (0.00112)	ND (0.00152)
Hexane	10000	10000	5300	ND (0.0156)	ND (0.0394)	ND (0.0131)	ND (0.0127)	ND (0.0124)	ND (0.0112)	ND (0.0152)
Methyl tert-butyl ether	8500	9800	2	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	ND (0.00124)	ND (0.00112)	ND (0.00152)
Toluene	10000	10000	100	ND (0.00781)	ND (0.0197)	ND (0.00653)	ND (0.00637)	ND (0.00622)	ND (0.00558)	ND (0.0076)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	0.00539 (0.00124)	ND (0.00112)	ND (0.00152)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00156)	ND (0.00394)	ND (0.00131)	ND (0.00127)	0.00186 (0.00124)	ND (0.00112)	ND (0.00152)
Xylenes (total)	7900	9100	1000	ND (0.00469)	ND (0.00895)	ND (0.00392)	ND (0.00382)	ND (0.00373)	ND (0.00335)	ND (0.00456)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.0515)	ND (16.7)	0.954 (0.837)	ND (0.0421)	ND (0.0411)	ND (0.184)	ND (2.24)
Anthracene	190000	190000	350	ND (0.0515)	19.7 (16.7)	15.5 (0.837)	ND (0.0421)	ND (0.0411)	0.208 (0.184)	ND (2.24)
Benzo(a)anthracene	130	190000	340	ND (0.0515)	47.2 (16.7)	31.5 (0.837)	ND (0.0421)	0.115 (0.0411)	0.759 (0.184)	ND (2.24)
Benzo(a)pyrene	91	190000	46	ND (0.0515)	37.9 (16.7)	23.8 (0.837)	ND (0.0421)	0.112 (0.0411)	0.734 (0.184)	ND (2.24)
Benzo(b)fluoranthene	76	190000	170	ND (0.0515)	56.6 (16.7)	31.5 (0.837)	ND (0.0421)	0.148 (0.0411)	1.01 (0.184)	ND (2.24)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.0515)	ND (16.7)	4.93 (0.837)	ND (0.0421)	0.0471 (0.0411)	0.3 (0.184)	ND (2.24)
Benzo(k)fluoranthene	76	190000	610	ND (0.0515)	20 (16.7)	11.6 (0.837)	ND (0.0421)	0.0448 (0.0411)	0.322 (0.184)	ND (2.24)
1,1-Biphenyl	34	40	1.5	ND (0.52)	ND (168)	ND (8.44)	ND (0.424)	ND (0.415)	ND (1.86)	ND (22.6)
Chrysene	760	190000	230	ND (0.0515)	50 (16.7)	27.5 (0.837)	ND (0.0421)	0.101 (0.0411)	0.774 (0.184)	ND (2.24)
Dibenz(a,h)anthracene	22	190000	270	ND (0.0515)	ND (16.7)	2.01 (0.837)	ND (0.0421)	ND (0.0411)	ND (0.184)	ND (2.24)
Fluoranthene	130000	190000	3200	ND (0.0515)	98.1 (16.7)	70.3 (1.67)	ND (0.0421)	0.165 (0.0411)	1.44 (0.184)	ND (2.24)
Fluorene	130000	190000	3800	ND (0.0515)	ND (16.7)	3.03 (0.837)	ND (0.0421)	ND (0.0411)	ND (0.184)	ND (2.24)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.0515)	ND (16.7)	5.95 (0.837)	ND (0.0421)	0.0452 (0.0411)	0.298 (0.184)	ND (2.24)
2-Methylnaphthalene	240	270	100	ND (0.0515)	ND (16.7)	ND (0.837)	ND (0.0421)	ND (0.0411)	ND (0.184)	ND (2.24)
Naphthalene	66	77	25	ND (0.0515)	ND (16.7)	ND (0.837)	ND (0.0421)	ND (0.0411)	ND (0.184)	ND (2.24)
Phenanthrene	190000	190000	10000	ND (0.0515)	77.5 (16.7)	51.3 (1.67)	ND (0.0421)	ND (0.0411)	0.953 (0.184)	ND (2.24)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.52)	ND (168)	ND (8.44)	ND (0.424)	ND (0.415)	ND (1.86)	ND (22.6)
Di-n-butylphthalate	10000	10000	4000	ND (0.52)	ND (168)	ND (8.44)	ND (0.424)	ND (0.415)	ND (1.86)	ND (22.6)
Pyrene	96000	190000	2200	ND (0.0515)	68.5 (16.7)	55.5 (1.67)	ND (0.0421)	0.131 (0.0411)	1.2 (0.184)	ND (2.24)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	7.84 (1.56)	ND (12.6)	8.23 (6.34)	4.2 (1.27)	7.1 (1.24)	7.39 (1.12)	6.8 (1.36)
Lead	1000	190000	450	245 (0.781)	1320 (6.32)	149 (3.17)	26.7 (0.637)	49.8 (0.622)	114 (0.558)	586 (0.679)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	7.92 (3.12)	36.9 (25.3)	14.4 (12.7)	15.5 (2.55)	18.5 (2.49)	12.2 (2.23)	60 (2.71)
Vanadium	16000	190000	49000	15.6 (3.12)	30.4 (25.3)	44.8 (12.7)	47.4 (2.55)	37.7 (2.49)	27.1 (2.23)	28.4 (2.71)
Zinc	190000	190000	12000	117 (7.81)	1550 (63.2)	423 (31.7)	53.5 (6.37)	63.4 (6.22)	103 (5.58)	604 (6.79)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-064	AOI8-BH-16-065	AOI8-BH-16-066	AOI8-BH-16-067	AOI8-BH-16-068	AOI8-BH-16-069	AOI8-BH-16-070
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-064-0-2-20160811	AOI8-BH-16-065-0-2-20160811	AOI8-BH-16-066-0-2-20160811	AOI8-BH-16-067-0-2-20160728	AOI8-BH-16-068-0-2-20160728	AOI8-BH-16-069-0-2-20160728	AOI8-BH-16-070-0-2-20160707
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/11/2016	8/11/2016	8/11/2016	7/28/2016	7/28/2016	7/28/2016	7/7/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	NA	NA	NA	NA	NA	NA	NA
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	10000	100	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	2.54 (0.181)	4.14 (0.148)	2.77 (0.0499)	1.05 (0.143)	1.53 (0.156)	2.58 (0.135)	0.126 (0.0389)
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	NA	NA
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	NA	NA	NA	NA	NA	NA	NA
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-071	AOI8-BH-16-072	AOI8-BH-16-073	AOI8-BH-16-073	AOI8-BH-16-074	AOI8-BH-16-074	AOI8-BH-16-075
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-071-0-2-20160707	AOI8-BH-16-072-0-2-20160707	AOI8-BH-16-073-0-2-20160913	AOI8-BH-16-073-12-14-20160913	AOI8-BH-16-074-0-2-20160825	AOI8-BH-16-074-6-8-20160825	AOI8-BH-16-075-0-2-20160825
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	12.0 - 14.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	7/7/2016	7/7/2016	9/13/2016	9/13/2016	8/25/2016	8/25/2016	8/25/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	NA	NA	0.116 (0.032)	ND (1.34)	ND (0.00183)	0.0047 (0.0014)	ND (0.00122)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	0.0821 (0.032)	1.73 (1.34)	ND (0.00183)	ND (0.0014)	ND (0.00122)
tert-Butylbenzene	10000	10000	1800	NA	NA	0.15 (0.032)	ND (1.34)	ND (0.00183)	0.0246 (0.0014)	ND (0.00122)
Cumene	10000	10000	2500	NA	NA	ND (0.32)	15.6 (13.4)	ND (0.0183)	ND (0.014)	ND (0.0122)
Cyclohexane	10000	10000	6900	NA	NA	0.683 (0.032)	6.53 (1.34)	ND (0.00183)	0.00402 (0.0014)	ND (0.00122)
Ethyl Benzene	880	1000	70	NA	NA	0.0375 (0.032)	ND (1.34)	ND (0.00183)	ND (0.0014)	ND (0.00122)
Hexane	10000	10000	5300	NA	NA	ND,MI,OE (0.32)	ND (13.4)	ND (0.0183)	ND (0.014)	ND (0.0122)
Methyl tert-butyl ether	8500	9800	2	NA	NA	ND (0.032)	ND (1.34)	ND (0.00183)	ND (0.0014)	ND (0.00122)
Toluene	10000	10000	100	NA	NA	ND (0.16)	ND (6.7)	ND (0.00914)	ND (0.00702)	ND (0.00612)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	0.0713 (0.032)	11.4 (1.34)	ND (0.00183)	ND (0.0014)	ND (0.00122)
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	ND (0.032)	2.7 (1.34)	ND (0.00183)	ND (0.0014)	ND (0.00122)
Xylenes (total)	7900	9100	1000	NA	NA	0.125 (0.0959)	8.86 (4.02)	ND (0.00548)	ND (0.00421)	ND (0.00367)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	ND (0.43)	8.39 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Anthracene	190000	190000	350	NA	NA	ND (0.43)	4.1 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Benzo(a)anthracene	130	190000	340	NA	NA	ND (4.3)	ND (5)	ND (0.102)	ND (0.232)	ND (0.202)
Benzo(a)pyrene	91	190000	46	1.33 (0.186)	1.4 (0.715)	ND (4.3)	3.58 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Benzo(b)fluoranthene	76	190000	170	NA	NA	ND (4.3)	3.32 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	ND (4.3)	ND (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Benzo(k)fluoranthene	76	190000	610	NA	NA	ND (4.3)	ND (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
1,1-Biphenyl	34	40	1.5	NA	NA	ND (4.34)	ND (25.2)	ND (1.03)	ND (2.34)	ND (2.04)
Chrysene	760	190000	230	NA	NA	ND (4.3)	5.6 (5)	ND (0.102)	ND (0.232)	ND (0.202)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	ND (4.3)	ND (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Fluoranthene	130000	190000	3200	NA	NA	ND (0.43)	5.17 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Fluorene	130000	190000	3800	NA	NA	0.517 (0.43)	10.6 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	ND (4.3)	ND (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
2-Methylnaphthalene	240	270	100	NA	NA	1.56 (0.43)	145 (5)	0.122 (0.102)	ND (0.232)	ND (0.202)
Naphthalene	66	77	25	NA	NA	ND (0.43)	10.4 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
Phenanthrene	190000	190000	10000	NA	NA	1.26 (0.43)	24.5 (2.5)	ND (0.102)	ND (0.232)	ND (0.202)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	ND (43.4)	ND (50.4)	ND (1.03)	ND (2.34)	ND (2.04)
Di-n-butylphthalate	10000	10000	4000	NA	NA	ND (4.34)	ND (25.2)	ND (1.03)	ND (2.34)	ND (2.04)
Pyrene	96000	190000	2200	NA	NA	ND (4.3)	7.49 (5)	ND (0.102)	ND (0.232)	ND (0.202)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	13.3 (1.3)	21.6 (1.51)	ND (1.55)	1.7 (1.4)	5.98 (1.22)
Lead	1000	190000	450	NA	NA	124 (0.652)	1660 (0.757)	24.9 (0.774)	13.6 (0.702)	68.6 (0.612)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	28.7 (2.61)	49.4 (3.03)	10.5 (3.1)	4.38 (2.81)	14.5 (2.45)
Vanadium	16000	190000	49000	NA	NA	64.1 (2.61)	52.3 (3.03)	63.8 (3.1)	9.88 (2.81)	39.6 (2.45)
Zinc	190000	190000	12000	NA	NA	149 (6.52)	549 (7.57)	44.8 (7.74)	20.6 (7.02)	65.5 (6.12)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-075	AOI8-BH-16-076	AOI8-BH-16-076	AOI8-BH-16-077	AOI8-BH-16-077	AOI8-BH-16-078	AOI8-BH-16-079
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-075-4-6-20160825	AOI8-BH-16-076-0-2-20160825	AOI8-BH-16-076-4-6-20160825	AOI8-BH-16-077-0-2-20160825	AOI8-BH-16-077-4-6-20160825	AOI8-BH-16-078-0-2-20161018	AOI8-BH-16-079-0-2-20161018
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	4.0 - 6.0	0.0 - 2.0	4.0 - 6.0	0.0 - 2.0	4.0 - 6.0	0.0 - 2.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	8/25/2016	8/25/2016	8/25/2016	8/25/2016	8/25/2016	10/18/2016	10/18/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.00228 (0.00131)	0.00149 (0.00108)	0.0678 (0.00104)	0.00188 (0.0014)	0.00276 (0.00122)	NA	NA
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
tert-Butylbenzene	10000	10000	1800	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
Cumene	10000	10000	2500	ND (0.0131)	ND (0.0108)	ND (0.0104)	ND (0.014)	ND (0.0122)	NA	NA
Cyclohexane	10000	10000	6900	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
Ethyl Benzene	880	1000	70	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
Hexane	10000	10000	5300	ND (0.0131)	ND (0.0108)	ND (0.0104)	ND (0.014)	ND (0.0122)	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
Toluene	10000	10000	100	ND (0.00654)	ND (0.0054)	ND (0.00521)	ND (0.007)	ND (0.00609)	NA	NA
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.00131)	ND (0.00108)	ND (0.00104)	ND (0.0014)	ND (0.00122)	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.00392)	ND (0.00324)	ND (0.00312)	ND (0.0042)	ND (0.00365)	NA	NA
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
Anthracene	190000	190000	350	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
Benzo(a)anthracene	130	190000	340	0.566 (0.431)	ND (3.46)	0.0498 (0.0344)	0.0684 (0.0462)	0.551 (0.402)	NA	NA
Benzo(a)pyrene	91	190000	46	0.702 (0.431)	ND (3.46)	0.0665 (0.0344)	0.0826 (0.0462)	0.683 (0.402)	NA	NA
Benzo(b)fluoranthene	76	190000	170	0.846 (0.431)	6.45 (3.46)	0.0867 (0.0344)	0.103 (0.0462)	0.803 (0.402)	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	ND (0.431)	ND (3.46)	0.0382 (0.0344)	0.0495 (0.0462)	ND (0.402)	NA	NA
Benzo(k)fluoranthene	76	190000	610	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
1,1-Biphenyl	34	40	1.5	ND (4.35)	ND (34.9)	ND (0.347)	ND (0.466)	ND (4.06)	NA	NA
Chrysene	760	190000	230	0.567 (0.431)	3.85 (3.46)	0.0528 (0.0344)	0.0697 (0.0462)	0.523 (0.402)	NA	NA
Dibenz(a,h)anthracene	22	190000	270	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
Fluoranthene	130000	190000	3200	0.645 (0.431)	ND (3.46)	0.0452 (0.0344)	0.0987 (0.0462)	0.599 (0.402)	NA	NA
Fluorene	130000	190000	3800	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (0.431)	ND (3.46)	0.035 (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
2-Methylnaphthalene	240	270	100	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
Naphthalene	66	77	25	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
Phenanthrene	190000	190000	10000	ND (0.431)	ND (3.46)	ND (0.0344)	ND (0.0462)	ND (0.402)	NA	NA
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (4.35)	ND (34.9)	ND (0.347)	ND (0.466)	ND (4.06)	NA	NA
Di-n-butylphthalate	10000	10000	4000	ND (4.35)	ND (34.9)	ND (0.347)	ND (0.466)	ND (4.06)	NA	NA
Pyrene	96000	190000	2200	0.65 (0.431)	ND (3.46)	0.0462 (0.0344)	0.0896 (0.0462)	0.603 (0.402)	NA	NA
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	3.51 (1.31)	3.04 (1.05)	5.11 (1.04)	5.53 (1.4)	3 (1.22)	NA	NA
Lead	1000	190000	450	75.3 (0.654)	76.9 (0.524)	186 (0.521)	20.3 (0.7)	70.8 (0.609)	3450 (3.37)	1030 (0.675)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	29.9 (2.62)	12.5 (2.1)	10.3 (2.08)	14.8 (2.8)	16 (2.44)	NA	NA
Vanadium	16000	190000	49000	41.6 (2.62)	26 (2.1)	26.2 (2.08)	50.8 (2.8)	69.5 (2.44)	NA	NA
Zinc	190000	190000	12000	123 (6.54)	68.6 (5.24)	134 (5.21)	64.3 (7)	119 (6.09)	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-16-080	AOI8-BH-16-081	AOI8-BH-16-082	AOI8-BH-16-083	AOI8-BH-17-SB-A	AOI8-BH-17-SB-A	AOI8-BH-17-SB-B
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-16-080-0-2-20161018	AOI8-BH-16-081-0-2-20161018	AOI8-BH-16-082-0-2-20161028	AOI8-BH-16-083-0-2-20170328	SB-A-5-20170207	SB-A-8-20170207	SB-B-5-20170207
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	5	8	5
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	10/18/2016	10/18/2016	10/28/2016	3/28/2017	2/7/2017	2/7/2017	2/7/2017
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	NA	NA	NA	NA	0.00177 (0.00118)	0.00491 (0.00138)	ND (0.00142)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	10000	100	NA	NA	NA	NA	ND (0.00592)	ND (0.00691)	ND (0.00711)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	NA	2.81 (0.0727)	NA	0.123 (0.00743)	NA	NA	NA
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	NA	NA
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	41.9 (1.18)	219 (1.38)	238 (1.42)
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	36.8 (0.623)	NA	38.8 (0.547)	NA	NA	NA	NA
Mercury	510	190000	10	NA	NA	NA	NA	0.111 (0.0237)	1.47 (0.0553)	0.795 (0.0284)
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

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J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-17-SB-B	AOI8-BH-17-SB-C	AOI8-BH-17-SB-C	AOI8-BH-17-SB-D	AOI8-BH-17-SB-D	AOI8-BH-17-SB-E	AOI8-BH-17-SB-E
Sample ID	Contact with	Contact with	Aquifer	SB-B-8-20170207	SB-C-4-20170207	SB-C-7-20170207	SB-D-5-20170207	SB-D-7-20170207	SB-E-4-5-20170207	SB-E-7-8-20170207
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	8	4	7	5	7	4.0 - 5.0	7.0 - 8.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.00388 (0.00143)	0.00218 (0.00119)	0.552 (0.0283)	0.00234 (0.00116)	0.259 (0.0309)	0.00325 (0.00114)	0.0395 (0.00139)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	10000	100	ND (0.00715)	ND (0.00596)	1.06 (0.141)	ND (0.00582)	0.286 (0.155)	ND (0.0057)	ND (0.00697)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	NA	NA
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	321 (1.43)	345 (1.19)	120 (1.14)	52.2 (1.16)	901 (1.28)	55.5 (1.14)	713 (1.39)
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	NA	NA	NA	NA	NA	NA	NA
Mercury	510	190000	10	0.786 (0.0286)	0.513 (0.0238)	0.303 (0.0228)	0.137 (0.0233)	0.661 (0.0256)	0.531 (0.0228)	0.786 (0.0279)
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
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6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
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Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-17-SB-F	AOI8-BH-17-SB-F	AOI8-BH-17-SB-G	AOI8-BH-17-SB-G	AOI8-BH-17-SB-H	AOI8-BH-17-SB-H	AOI8-BH-21-01
Sample ID	Contact with	Contact with	Aquifer	SB-F-4.5-5-20170207	SB-F-7-20170207	SB-G-6-20170207	SB-G-10-20170207	SB-H-6-20170207	SB-H-10-20170207	AOI8-BH-21-01-0-2-20210407
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	4.5 - 5.0	7	6	10	6	10	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017	4/7/2021
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.00694 (0.00116)	0.00668 (0.00131)	0.00185 (0.0013)	0.0255 (0.0227)	0.00326 (0.00124)	0.0132 (0.00122)	NA
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	10000	100	ND (0.00579)	ND (0.00657)	ND (0.00648)	ND (0.114)	ND (0.00622)	0.00638 (0.00611)	NA
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	NA	NA
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	40 (1.16)	650 (1.31)	40.3 (1.3)	31.1 (1.16)	38.1 (1.24)	49.5 (1.22)	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	NA	NA	NA	NA	NA	NA	470 (1.5)
Mercury	510	190000	10	0.487 (0.0232)	0.933 (0.0263)	0.215 (0.0259)	0.236 (0.0233)	0.292 (0.0249)	0.37 (0.0244)	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-21-02	AOI8-BH-21-03	AOI8-BH-21-04	AOI8-BH-21-05	AOI8-BH-21-06	AOI8-BH-22-08	AOI8-BH-22-09
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-21-02-0-2-20210407	AOI8-BH-21-03-0-2-20210407	AOI8-BH-21-04-0-2-20210407	AOI8-BH-21-05-0-2-20210407	AOI8-BH-21-06-0-2-20210407	AOI8-BH-22-08-6-8	AOI8-BH-22-09-6-8
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	6.0 - 8.0	6.0 - 8.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	4/7/2021	4/7/2021	4/7/2021	4/7/2021	4/7/2021	5/19/2022	5/19/2022
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	NA	NA	NA	NA	NA	ND (0.00071)	ND (0.00046)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	NA	NA	ND (0.0028)	ND (0.0019)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	NA	ND (0.0014)	ND (0.00093)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	NA	ND (0.0014)	ND (0.00093)
Toluene	10000	10000	100	NA	NA	NA	NA	NA	ND (0.0014)	ND (0.00093)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	ND (0.0028)	ND (0.0019)
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	ND (0.0028)	ND (0.0019)
Xylenes (total)	7900	9100	1000	NA	NA	NA	NA	NA	ND (0.0014)	ND (0.00093)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	0.5 (0.046)	0.889 (0.038)
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	1.68 (0.046)	2.16 (0.038)
Benzo(a)pyrene	91	190000	46	NA	NA	NA	NA	NA	2.04 (0.046)	1.84 (0.038)
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	NA	NA	3.07 (0.046)	2.08 (0.038)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	2.33 (0.046)	0.856 (0.038)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	2.33 (0.046)	1.75 (0.038)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	NA	NA	NA	NA	NA	0.185 (0.046)	0.226 (0.038)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	NA	NA	NA	NA	NA	2.7 (0.046)	0.381 (0.038)
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	NA	3.09 (0.046)	2.83 (0.038)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	3.18 (0.046)	3 (0.038)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	400 (1.3)	1600 (1.6)	390 (1.4)	250 (1.5)	10 (1.9)	84000 (280)	214 (2.3)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-BH-22-10	AOI8-GP-1	AOI8-GP-2	AOI8-GP-3	AOI8-GP-4	AOI8-GP-5	AOI8-GP-6
Sample ID	Contact with	Contact with	Aquifer	AOI8-BH-22-10-6-8	GP-1 12-14'	GP-2 10-12'	GP-3 8-10'	GP-4 10-12'	GP-5 10-12'	GP-6 10-12'
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	6.0 - 8.0	12.0 - 14.0	10.0 - 12.0	8.0 - 10.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/19/2022	6/3/2003	6/3/2003	6/3/2003	6/3/2003	6/4/2003	6/4/2003
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.00045)	ND (0.11)	ND (0.22)	ND (0.19)	ND (0.2)	ND (0.21)	ND (0.59)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.0018)	4 (0.18)	13 (0.44)	6.4 (0.38)	7.1 (0.41)	8.7 (0.43)	19 (1.1)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.00091)	ND (0.34)	ND (0.77)	ND (0.54)	ND (0.55)	ND (0.21)	ND (1.8)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.00091)	NA	NA	NA	NA	NA	NA
Toluene	10000	10000	100	ND (0.00091)	ND (0.23)	ND (0.51)	ND (0.22)	ND (0.33)	ND (0.29)	ND (1.2)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0018)	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0018)	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.00091)	ND (3.4)	ND (4.5)	ND (4.3)	ND (3.3)	ND (2.9)	ND (7)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.04)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	0.0725 (0.04)	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	0.0695 (0.04)	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	190000	170	0.0897 (0.04)	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	0.0557 (0.04)	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	0.0679 (0.04)	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.04)	4.4 (0.31)	1.6 (0.35)	4.3 (0.29)	6.2 (0.3)	6.2 (0.15)	7.4 (0.15)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	0.0176 J (0.04)	16 (8.8)	33 (0.87)	19 (0.77)	24 (0.82)	32 (0.86)	48 (2.2)
Phenanthrene	190000	190000	10000	0.0739 (0.04)	14 (0.76)	4.8 (0.17)	12 (0.72)	18 (0.74)	16 (0.77)	16 (0.79)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	0.0991 (0.04)	NA	NA	NA	NA	NA	NA
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	733 (2.4)	NA	NA	NA	NA	NA	NA
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	AOI8-GP-7	AOI8-GP-8	AOI8-GP-9	AOI8-GP-10	AOI8-GP-11	BH-08-01	BH-08-02
Sample ID	Contact with	Contact with	Aquifer	GP-7 10-12'	GP-8 10-12'	GP-9 10-12'	GP-10 10-12'	GP-11 10-12'	BH-08-01_1.0-2.0	BH-08-02_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	10.0 - 12.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	6/4/2003	6/4/2003	6/4/2003	6/4/2003	6/4/2003	6/17/2008	5/7/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.097)	ND (0.088)	ND (0.011)	ND (0.044)	ND (0.19)	ND (0.24)	ND (0.23)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	4.7 (0.19)	3.8 (0.18)	ND (0.28)	2.3 (0.089)	7.1 (0.38)	ND (0.24)	ND (0.23)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.097)	ND (0.088)	ND (0.022)	ND (0.044)	ND (0.67)	ND (0.24)	ND (0.23)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	NA	NA	ND (0.24)	ND (0.23)
Toluene	10000	10000	100	ND (0.22)	ND (0.22)	ND (0.022)	ND (0.11)	ND (0.22)	ND (0.24)	ND (0.23)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (2.2)	ND (1)	0.24 (0.019)	ND (0.66)	ND (3.3)	ND (0.24)	ND (0.23)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Benzo(a)pyrene	91	190000	46	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	2.4 (0.14)	2.5 (0.14)	4.4 (0.3)	5.2 (0.3)	6.5 (0.3)	ND (0.18)	ND (0.95)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	16 (0.39)	13 (0.35)	1.4 (0.038)	17 (4.4)	40 (0.76)	ND (0.18)	ND (0.95)
Phenanthrene	190000	190000	10000	4.7 (0.14)	7.4 (0.3)	15 (0.75)	26 (0.73)	17 (0.72)	ND (0.18)	ND (0.95)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	ND (0.18)	ND (0.95)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	NA	NA	NA	NA	NA	69.7 (1.08)	138 (1.11)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	BH-08-03	BH-08-04	BH-08-05	BH-08-07	BH-08-08	BH-08-09	BH-08-10
Sample ID	Contact with	Contact with	Aquifer	BH-08-03_1.0-2.0	BH-08-04_1.0-2.0	BH-08-05_6.0-8.0	BH-08-07_1.0-2.0	BH-08-08_1.0-2.0	BH-08-09_1.0-2.0	BH-08-10_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	6.0 - 8.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/7/2008	5/8/2008	5/8/2008	5/8/2008	5/7/2008	5/7/2008	5/7/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.58 (0.22)	3.3 (0.27)	NA	1.4 (0.25)	1.9 (0.38)	3.2 (0.4)	ND (0.2)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	0.44 (0.22)	2.4 (0.27)	NA	3.8 (0.25)	ND (0.38)	ND (0.4)	ND (0.2)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.22)	8.4 (0.27)	NA	8.4 (0.25)	ND (0.38)	ND (0.4)	ND (0.2)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.22)	ND (0.27)	NA	ND (0.25)	ND (0.38)	ND (0.4)	ND (0.2)
Toluene	10000	10000	100	0.23 (0.22)	0.59 (0.27)	NA	0.47 (0.25)	ND (0.38)	0.99 (0.4)	0.42 (0.2)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	0.34 (0.22)	32 (2.7)	NA	28 (2.5)	0.62 (0.38)	3.2 (0.4)	0.36 (0.2)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (4.7)	ND (10)	NA	ND (5.1)	ND (5.1)	ND (4.7)	ND (0.94)
Benzo(a)anthracene	130	190000	340	ND (4.7)	ND (10)	NA	ND (5.1)	ND (5.1)	ND (4.7)	2 (0.94)
Benzo(a)pyrene	91	190000	46	ND (4.7)	ND (10)	NA	ND (5.1)	ND (5.1)	ND (4.7)	2.6 (0.94)
Benzo(b)fluoranthene	76	190000	170	ND (4.7)	ND (10)	NA	ND (5.1)	ND (5.1)	6.3 (4.7)	2.5 (0.94)
Benzo(g,h,i)perylene	190000	190000	180	ND (4.7)	ND (10)	NA	ND (5.1)	ND (5.1)	ND (4.7)	1.8 (0.94)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	ND (4.7)	ND (10)	NA	ND (5.1)	7.2 (5.1)	6.9 (4.7)	1.9 (0.94)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (4.7)	ND (10)	NA	12 (5.1)	ND (5.1)	ND (4.7)	ND (0.94)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (4.7)	12 (10)	NA	15 (5.1)	ND (5.1)	5.9 (4.7)	ND (0.94)
Phenanthrene	190000	190000	10000	6.8 (4.7)	20 (10)	NA	34 (5.1)	ND (5.1)	8.5 (4.7)	1.7 (0.94)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	ND (4.7)	ND (10)	NA	5.9 (5.1)	ND (5.1)	8.5 (4.7)	2.1 (0.94)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	291 (1.09)	829 (2.41)	63.4 (1.35)	519 (1.18)	637 (2.41)	262 (1.09)	428 (1.1)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	BH-08-11	BH-08-12	BH-08-13	BH-08-14	BH-08-15	BH-08-16	BH-08-17
Sample ID	Contact with	Contact with	Aquifer	BH-08-11_1.0-2.0	BH-08-12_1.0-2.0	BH-08-13_1.0-2.0	BH-08-14_1.0-2.0	BH-08-15_1.0-2.0	BH-08-16_1.0-2.0	BH-08-17_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/7/2008	5/6/2008	5/6/2008	5/6/2008	5/6/2008	5/7/2008	5/7/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	0.31 (0.24)	3.1 (0.27)	ND (0.19)	ND (0.23)	ND (0.2)	3.1 (0.26)	ND (0.24)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.24)	1.5 (0.27)	ND (0.19)	ND (0.23)	ND (0.2)	2.1 (0.26)	ND (0.24)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.24)	0.74 (0.27)	ND (0.19)	ND (0.23)	ND (0.2)	6.6 (0.26)	ND (0.24)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.24)	ND (0.27)	ND (0.19)	ND (0.23)	ND (0.2)	ND (0.26)	ND (0.24)
Toluene	10000	10000	100	ND (0.24)	0.66 (0.27)	ND (0.19)	ND (0.23)	ND (0.2)	4.2 (0.26)	ND (0.24)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.24)	5.8 (0.27)	ND (0.19)	ND (0.23)	ND (0.2)	34 (0.26)	ND (0.24)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (4.9)	1.5 (1)	ND (0.98)	ND (0.19)	ND (0.19)	11 (9.7)	ND (0.99)
Benzo(a)anthracene	130	190000	340	ND (4.9)	ND (1)	1.1 (0.98)	ND (0.19)	ND (0.19)	ND (9.7)	ND (0.99)
Benzo(a)pyrene	91	190000	46	ND (4.9)	ND (1)	1.3 (0.98)	ND (0.19)	ND (0.19)	ND (9.7)	ND (0.99)
Benzo(b)fluoranthene	76	190000	170	ND (4.9)	ND (1)	1.1 (0.98)	ND (0.19)	ND (0.19)	ND (9.7)	ND (0.99)
Benzo(g,h,i)perylene	190000	190000	180	ND (4.9)	ND (1)	1.1 (0.98)	ND (0.19)	ND (0.19)	ND (9.7)	ND (0.99)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	ND (4.9)	1.9 (1)	2.7 (0.98)	0.25 (0.19)	ND (0.19)	13 (9.7)	ND (0.99)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (4.9)	2.4 (1)	ND (0.98)	ND (0.19)	ND (0.19)	21 (9.7)	ND (0.99)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (4.9)	2.7 (1)	ND (0.98)	ND (0.19)	ND (0.19)	18 (9.7)	ND (0.99)
Phenanthrene	190000	190000	10000	ND (4.9)	6.6 (1)	ND (0.98)	0.33 (0.19)	ND (0.19)	58 (9.7)	ND (0.99)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	ND (4.9)	2.2 (1)	2.6 (0.98)	0.27 (0.19)	ND (0.19)	15 (9.7)	ND (0.99)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	131 (1.16)	1250 (11.6)	314 (1.14)	78.8 (1.12)	22.8 (1.13)	1380 (5.58)	102 (1.16)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	BH-08-18	BH-08-21	BH-08-22	BH-08-23	BH-08-24	BH-08-25	BH-08-26
Sample ID	Contact with	Contact with	Aquifer	BH-08-18_1.0-2.0	BH-08-21_1.0-2.0	BH-08-22_1.0-2.0	BH-08-23_1.0-2.0	BH-08-24_1.0-2.0	BH-08-25_1.0-2.0	BH-08-26_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/7/2008	5/7/2008	5/7/2008	5/7/2008	5/7/2008	5/7/2008	5/8/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.24)	ND (0.25)	ND (0.26)	ND (0.18)	ND (0.38)	ND (0.46)	9 (0.21)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.24)	ND (0.25)	ND (0.26)	ND (0.18)	1.4 (0.38)	ND (0.46)	0.66 (0.21)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.24)	ND (0.25)	ND (0.26)	ND (0.18)	ND (0.38)	ND (0.46)	ND (0.21)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.24)	ND (0.25)	ND (0.26)	ND (0.18)	ND (0.38)	ND (0.46)	ND (0.21)
Toluene	10000	10000	100	ND (0.24)	ND (0.25)	ND (0.26)	ND (0.18)	ND (0.38)	ND (0.46)	ND (0.21)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.24)	ND (0.25)	ND (0.26)	0.2 (0.18)	0.6 (0.38)	ND (0.46)	ND (0.21)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Benzo(a)anthracene	130	190000	340	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Benzo(a)pyrene	91	190000	46	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Benzo(b)fluoranthene	76	190000	170	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Phenanthrene	190000	190000	10000	ND (0.94)	9.7 (4.8)	ND (4.8)	ND (5)	5.9 (4.6)	ND (4.6)	ND (4.9)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	ND (0.94)	ND (4.8)	ND (4.8)	ND (5)	ND (4.6)	ND (4.6)	ND (4.9)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	22.2 (1.13)	540 (1.15)	213 (1.13)	374 (1.17)	172 (1.08)	223 (1.11)	261 (1.13)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	BH-08-27	BH-08-28	BH-08-29	BH-08-31	BH-08-32	BH-08-33	BH-08-34
Sample ID	Contact with	Contact with	Aquifer	BH-08-27_1.0-2.0	BH-08-28_1.0-2.0	BH-08-29_1.0-2.0	BH-08-31_1.0-2.0	BH-08-32_0.0-2.0	BH-08-33_1.5-2.0	BH-08-34_1.5-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	0.0 - 2.0	1.5 - 2.0	1.5 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/6/2008	5/6/2008	5/6/2008	5/6/2008	7/3/2008	5/6/2008	5/6/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.18)	ND (0.27)	ND (0.23)	ND (0.24)	ND (0.3)	ND (0.28)	ND (0.26)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.18)	ND (0.27)	ND (0.23)	ND (0.24)	ND (0.3)	ND (0.28)	ND (0.26)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.18)	ND (0.27)	ND (0.23)	ND (0.24)	ND (0.3)	ND (0.28)	ND (0.26)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.18)	ND (0.27)	ND (0.23)	ND (0.24)	ND (0.3)	ND (0.28)	ND (0.26)
Toluene	10000	10000	100	ND (0.18)	ND (0.27)	ND (0.23)	ND (0.24)	ND (0.3)	ND (0.28)	ND (0.26)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.18)	0.67 (0.27)	ND (0.23)	ND (0.24)	ND (0.3)	ND (0.28)	ND (0.26)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.19)	ND (1)	ND (0.19)	8.1 (0.92)	0.35 (0.17)	1.7 (0.19)	18 (1.9)
Benzo(a)anthracene	130	190000	340	0.37 (0.19)	ND (1)	ND (0.19)	16 (0.92)	0.92 (0.17)	4.6 (0.97)	37 (1.9)
Benzo(a)pyrene	91	190000	46	0.4 (0.19)	ND (1)	ND (0.19)	11 (0.92)	0.9 (0.17)	3.6 (0.19)	29 (1.9)
Benzo(b)fluoranthene	76	190000	170	0.48 (0.19)	ND (1)	ND (0.19)	12 (0.92)	1.2 (0.17)	5.4 (0.97)	39 (1.9)
Benzo(g,h,i)perylene	190000	190000	180	0.37 (0.19)	ND (1)	ND (0.19)	6.9 (0.92)	0.73 (0.17)	2.3 (0.19)	18 (1.9)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	0.44 (0.19)	1.2 (1)	ND (0.19)	13 (0.92)	0.95 (0.17)	4.3 (0.19)	32 (1.9)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.19)	1.1 (1)	ND (0.19)	2 (0.92)	ND (0.17)	0.72 (0.19)	8 (1.9)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.19)	ND (1)	ND (0.19)	ND (0.92)	ND (0.17)	0.36 (0.19)	ND (1.9)
Phenanthrene	190000	190000	10000	0.45 (0.19)	2.9 (1)	ND (0.19)	26 (4.6)	1.4 (0.17)	7.2 (0.97)	64 (9.7)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	0.58 (0.19)	1.1 (1)	ND (0.19)	25 (4.6)	1.6 (0.17)	7.5 (0.97)	63 (9.7)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	89.7 (1.09)	132 (1.15)	96.4 (1.1)	1300 (10.9)	128 (1.01)	172 (1.15)	354 (1.12)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	BH-08-35	BH-13-66	BH-13-66	N-98	N-99	N-100	N-101
Sample ID	Contact with	Contact with	Aquifer	BH-08-35_1.0-2.0	AOI-8-BH-13-66-0-2	AOI-8-BH-13-66-4-6	N-98_1.0-2.0	N-99_1.0-2.0	N-100_0.0-2.0	N-101_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	0.0 - 2.0	4.0 - 6.0	1.0 - 2.0	1.0 - 2.0	0.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/6/2008	11/6/2013	11/6/2013	6/2/2008	6/17/2008	6/11/2008	6/16/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.22)	ND (0.00087)	0.939 (0.27)	ND (0.21)	ND (0.27)	ND (0.28)	ND (0.21)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	ND (0.0043)	0.772 J (1.4)	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	ND (0.0043)	0.175 J (1.4)	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.22)	ND (0.0043)	1.19 J (1.4)	ND (0.21)	ND (0.27)	ND (0.28)	ND (0.21)
Cyclohexane	10000	10000	6900	NA	ND (0.0043)	17.9 (1.4)	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.22)	ND (0.00087)	0.849 (0.27)	ND (0.21)	ND (0.27)	ND (0.28)	ND (0.21)
Hexane	10000	10000	5300	NA	0.00089 J (0.0043)	8.87 (1.4)	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.22)	ND (0.00087)	ND (0.27)	ND (0.21)	ND (0.27)	ND (0.28)	ND (0.21)
Toluene	10000	10000	100	ND (0.22)	ND (0.00087)	0.846 (0.27)	ND (0.21)	ND (0.27)	ND (0.28)	ND (0.21)
1,2,4-Trimethylbenzene	4700	5400	300	NA	ND (0.0043)	1.62 (1.4)	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	ND (0.0043)	0.614 J (1.4)	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.22)	ND (0.00087)	1.94 (0.27)	ND (0.21)	ND (0.27)	ND (0.28)	ND (0.21)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	ND (0.035)	ND (0.15)	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.18)	0.0399 (0.035)	0.113 J (0.15)	ND (0.98)	64 (5)	0.32 (0.19)	0.24 (0.2)
Benzo(a)anthracene	130	190000	340	ND (0.18)	0.173 (0.035)	0.195 (0.15)	ND (0.98)	82 (5)	1.1 (0.19)	ND (0.2)
Benzo(a)pyrene	91	190000	46	ND (0.18)	0.231 (0.035)	0.196 (0.15)	ND (0.98)	61 (5)	0.92 (0.19)	ND (0.2)
Benzo(b)fluoranthene	76	190000	170	ND (0.18)	0.258 (0.035)	0.207 (0.15)	ND (0.98)	69 (5)	1.2 (0.19)	ND (0.2)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.18)	0.184 (0.035)	0.208 (0.15)	ND (0.98)	29 (5)	0.62 (0.19)	ND (0.2)
Benzo(k)fluoranthene	76	190000	610	NA	0.087 (0.035)	0.0645 J (0.15)	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	ND (0.07)	ND (0.3)	NA	NA	NA	NA
Chrysene	760	190000	230	ND (0.18)	0.202 (0.035)	0.891 (0.15)	ND (0.98)	71 (5)	1.1 (0.19)	0.25 (0.2)
Dibenz(a,h)anthracene	22	190000	270	NA	0.0483 (0.035)	0.0904 J (0.15)	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	0.292 (0.035)	0.279 (0.15)	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.18)	ND (0.035)	0.311 (0.15)	ND (0.98)	78 (5)	ND (0.19)	0.28 (0.2)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	0.134 (0.035)	0.0854 J (0.15)	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	ND (0.07)	0.271 J (0.3)	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.18)	ND (0.035)	ND (0.15)	1 (0.98)	53 (5)	ND (0.19)	ND (0.2)
Phenanthrene	190000	190000	10000	ND (0.18)	0.148 (0.035)	0.779 (0.15)	4.5 (0.98)	280 (25)	1.5 (0.19)	0.53 (0.2)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	ND (0.07)	ND (0.3)	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	ND (0.07)	ND (0.3)	NA	NA	NA	NA
Pyrene	96000	190000	2200	ND (0.18)	0.301 (0.035)	0.649 (0.15)	2.4 (0.98)	140 (25)	1.9 (0.19)	0.44 (0.2)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	7.7 (4.6)	8 (5)	NA	NA	NA	NA
Lead	1000	190000	450	14.3 (1.05)	48.1 (0.91)	345 (0.99)	94.5 (1.14)	146 (1.14)	135 (1.09)	78.1 (1.15)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	14.2 (3.6)	37.5 (4)	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	39.4 (0.91)	56.9 (0.99)	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	89.5 (1.8)	167 (2)	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-102	N-103	N-104	N-105	N-106	N-107	N-108
Sample ID	Contact with	Contact with	Aquifer	N-102_1.0-2.0	N-103_1.0-2.0	N-104_1.0-2.0	N-105_1.0-2.0	N-106_1.0-2.0	N-107_1.0-2.0	N-108_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	6/5/2008	6/6/2008	6/17/2008	6/17/2008	6/5/2008	6/17/2008	5/29/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.25)	ND (0.26)	ND (0.23)	ND (0.24)	ND (0.19)	0.74 (0.22)	ND (0.23)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.25)	ND (0.26)	ND (0.23)	ND (0.24)	ND (0.19)	0.36 (0.22)	ND (0.23)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.25)	ND (0.26)	ND (0.23)	ND (0.24)	ND (0.19)	1.6 (0.22)	ND (0.23)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.25)	ND (0.26)	ND (0.23)	ND (0.24)	ND (0.19)	ND (0.22)	ND (0.23)
Toluene	10000	10000	100	ND (0.25)	ND (0.26)	ND (0.23)	ND (0.24)	ND (0.19)	0.42 (0.22)	ND (0.23)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.25)	ND (0.26)	ND (0.23)	ND (0.24)	ND (0.19)	2.7 (0.22)	ND (0.23)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.19)	ND (0.95)	ND (0.92)	ND (0.92)	ND (0.19)	ND (1.8)	ND (1.9)
Benzo(a)anthracene	130	190000	340	ND (0.19)	ND (0.95)	ND (0.92)	ND (0.92)	ND (0.19)	ND (1.8)	2 (1.9)
Benzo(a)pyrene	91	190000	46	0.2 (0.19)	ND (0.95)	ND (0.92)	ND (0.92)	0.19 (0.19)	ND (1.8)	5.4 (1.9)
Benzo(b)fluoranthene	76	190000	170	0.32 (0.19)	ND (0.95)	ND (0.92)	ND (0.92)	0.3 (0.19)	ND (1.8)	3.3 (1.9)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.19)	1 (0.95)	ND (0.92)	ND (0.92)	0.22 (0.19)	ND (1.8)	20 (1.9)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	0.27 (0.19)	ND (0.95)	1.2 (0.92)	ND (0.92)	0.19 (0.19)	ND (1.8)	3.8 (1.9)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.19)	ND (0.95)	ND (0.92)	ND (0.92)	ND (0.19)	ND (1.8)	ND (1.9)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.19)	ND (0.95)	ND (0.92)	ND (0.92)	ND (0.19)	ND (1.8)	ND (1.9)
Phenanthrene	190000	190000	10000	0.31 (0.19)	ND (0.95)	1.5 (0.92)	ND (0.92)	ND (0.19)	ND (1.8)	2.1 (1.9)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	0.39 (0.19)	ND (0.95)	2.2 (0.92)	ND (0.92)	0.27 (0.19)	ND (1.8)	ND (1.9)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	24.7 (0.115)	174 (0.567)	164 (1.07)	36.4 (1.08)	76.7 (0.546)	173 (1.07)	147 (1.16)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-109	N-110	N-111	N-112	N-113	N-114	N-115
Sample ID	Contact with	Contact with	Aquifer	N-109_1.0-2.0	N-110_1.0-2.0	N-111_1.0-2.0	N-112_1.0-2.0	N-113_1.0-2.0	N-114_1.0-2.0	N-115_0.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	6/17/2008	5/14/2008	5/14/2008	5/8/2008	5/15/2008	5/8/2008	5/28/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (3.1)	ND (0.24)	ND (0.24)	ND (0.44)	ND (0.18)	0.51 (0.24)	ND (0.38)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (3.1)	ND (0.24)	ND (0.24)	ND (0.44)	0.32 (0.18)	0.59 (0.24)	ND (0.38)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (3.1)	ND (0.24)	ND (0.24)	ND (0.44)	ND (0.18)	0.25 (0.24)	ND (0.38)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (3.1)	ND (0.24)	ND (0.24)	ND (0.44)	ND (0.18)	ND (0.24)	ND (0.38)
Toluene	10000	10000	100	ND (3.1)	ND (0.24)	ND (0.24)	ND (0.44)	ND (0.18)	0.42 (0.24)	ND (0.38)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (3.1)	ND (0.24)	ND (0.24)	ND (0.44)	ND (0.18)	0.69 (0.24)	ND (0.38)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	ND (4.7)	ND (5.2)
Benzo(a)anthracene	130	190000	340	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	ND (4.7)	10 N (5.2)
Benzo(a)pyrene	91	190000	46	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	ND (4.7)	6.5 N (5.2)
Benzo(b)fluoranthene	76	190000	170	ND (0.95)	ND (0.18)	0.96 (0.91)	ND (0.2)	ND (4.4)	ND (4.7)	ND (5.2)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	ND (4.7)	7.1 N (5.2)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	6.9 (4.7)	15 N (5.2)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	10 (4.7)	ND (5.2)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.95)	ND (0.18)	ND (0.91)	ND (0.2)	ND (4.4)	ND (4.7)	ND (5.2)
Phenanthrene	190000	190000	10000	ND (0.95)	ND (0.18)	1.1 (0.91)	ND (0.2)	ND (4.4)	26 (4.7)	14 N (5.2)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	ND (0.95)	ND (0.18)	1.4 (0.91)	ND (0.2)	ND (4.4)	13 (4.7)	32 N (5.2)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	294 (1.13)	15 (1.06)	117 (1.06)	11.6 (1.16)	77.9 (1.06)	139 (1.11)	1250 N (3)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-116	N-117	N-118	N-119	N-120	N-121	N-122
Sample ID	Contact with	Contact with	Aquifer	N-116_1.0-2.0	N-117-1.0-2.0	N-118_1.0-2.0	N-119_1.0-2.0	N-120_1.0-2.0	N-121_1.0-2.0	N-122_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/20/2008	6/4/2008	5/23/2008	6/17/2008	5/22/2008	6/9/2008	5/7/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.23)	ND (0.23)	ND (0.22)	ND (0.24)	ND (0.17)	ND (0.23)	ND (0.2)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	0.81 (0.23)	ND (0.23)	0.47 N (0.22)	ND (0.24)	ND (0.17)	ND (0.23)	ND (0.2)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.23)	ND (0.23)	ND (0.22)	ND (0.24)	ND (0.17)	ND (0.23)	ND (0.2)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.23)	ND (0.23)	ND (0.22)	ND (0.24)	ND (0.17)	ND (0.23)	ND (0.2)
Toluene	10000	10000	100	ND (0.23)	ND (0.23)	ND (0.22)	ND (0.24)	ND (0.17)	ND (0.23)	ND (0.2)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.23)	ND (0.23)	ND (0.22)	ND (0.24)	ND (0.17)	ND (0.23)	ND (0.2)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	1 (0.97)	0.35 (0.19)	ND (0.94)	ND (0.2)	ND (0.98)	ND (0.99)	2.1 (0.94)
Benzo(a)anthracene	130	190000	340	ND (0.97)	0.74 (0.19)	ND (0.94)	0.34 (0.2)	ND (0.98)	ND (0.99)	ND (0.94)
Benzo(a)pyrene	91	190000	46	ND (0.97)	0.63 (0.19)	ND (0.94)	0.43 (0.2)	ND (0.98)	ND (0.99)	ND (0.94)
Benzo(b)fluoranthene	76	190000	170	ND (0.97)	0.94 (0.19)	ND (0.94)	0.21 (0.2)	ND (0.98)	ND (0.99)	ND (0.94)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.97)	0.42 (0.19)	ND (0.94)	0.33 (0.2)	ND (0.98)	ND (0.99)	ND (0.94)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	ND (0.97)	0.68 (0.19)	ND (0.94)	0.65 (0.2)	ND (0.98)	1.5 (0.99)	ND (0.94)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	2.1 (0.97)	ND (0.19)	1.2 N (0.94)	ND (0.2)	ND (0.98)	ND (0.99)	0.98 (0.94)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.97)	ND (0.19)	ND (0.94)	ND (0.2)	ND (0.98)	ND (0.99)	ND (0.94)
Phenanthrene	190000	190000	10000	5.9 (0.97)	1.4 (0.19)	3.7 N (0.94)	ND (0.2)	ND (0.98)	2.5 (0.99)	2.1 (0.94)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	1.2 (0.97)	1.1 (0.19)	1.2 N (0.94)	0.56 (0.2)	ND (0.98)	2.5 (0.99)	1.2 (0.94)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	340 (1.16)	219 (0.565)	200 N (1.11)	101 (1.17)	181 (1)	64 (1.17)	207 (1.11)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-123	N-124	N-125	N-126	N-127	N-128	N-129
Sample ID	Contact with	Contact with	Aquifer	N-123_1.0-2.0	N-124_1.0-2.0	N-125_1.0-2.0	N-126_1.0-2.0	N-127_1.0-2.0	N-128_1.0-2.0	N-129_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/20/2008	5/21/2008	6/17/2008	6/17/2008	5/22/2008	5/20/2008	6/17/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.24)	ND (0.37)	ND (0.23)	ND (3.1)	ND (0.19)	1.9 (0.29)	ND (0.23)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.24)	ND (0.37)	ND (0.23)	ND (3.1)	ND (0.19)	ND (0.29)	ND (0.23)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.24)	ND (0.37)	ND (0.23)	ND (3.1)	ND (0.19)	0.34 (0.29)	ND (0.23)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.24)	ND (0.37)	ND (0.23)	ND (3.1)	ND (0.19)	ND (0.29)	ND (0.23)
Toluene	10000	10000	100	ND (0.24)	ND (0.37)	ND (0.23)	ND (3.1)	ND (0.19)	ND (0.29)	ND (0.23)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.24)	ND (0.37)	ND (0.23)	ND (3.1)	ND (0.19)	0.61 (0.29)	ND (0.23)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	5 (1.1)	ND (0.19)	ND (0.93)	1.1 (1)	ND (0.94)	ND (1)	ND (0.97)
Benzo(a)anthracene	130	190000	340	17 (1.1)	ND (0.19)	2 (0.93)	ND (1)	ND (0.94)	1.7 (1)	ND (0.97)
Benzo(a)pyrene	91	190000	46	13 (1.1)	ND (0.19)	1.5 (0.93)	ND (1)	ND (0.94)	6 (1)	ND (0.97)
Benzo(b)fluoranthene	76	190000	170	18 (1.1)	ND (0.19)	1.6 (0.93)	ND (1)	ND (0.94)	3.3 (1)	ND (0.97)
Benzo(g,h,i)perylene	190000	190000	180	8 (1.1)	ND (0.19)	ND (0.93)	1 (1)	ND (0.94)	20 (1)	1.7 (0.97)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	16 (1.1)	ND (0.19)	2.1 (0.93)	1.4 (1)	ND (0.94)	1.9 (1)	1 (0.97)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (1.1)	ND (0.19)	ND (0.93)	1.2 (1)	ND (0.94)	ND (1)	ND (0.97)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (1.1)	ND (0.19)	ND (0.93)	ND (1)	ND (0.94)	2.2 (1)	ND (0.97)
Phenanthrene	190000	190000	10000	16 (1.1)	ND (0.19)	1.6 (0.93)	1.1 (1)	1.2 (0.94)	1.9 (1)	ND (0.97)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	25 (1.1)	ND (0.19)	2.5 (0.93)	2.2 (1)	1.4 (0.94)	ND (1)	ND (0.97)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	254 (1.27)	43.9 (1.15)	150 (1.07)	912 (2.36)	191 (1)	61.4 (1.18)	31.3 (1.14)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-130	N-131	N-132	N-133	N-134	N-135	N-136
Sample ID	Contact with	Contact with	Aquifer	N-130_0.0-2.0	N-131_1.0-2.0	N-132_1.0-2.0	N-133_1.0-2.0	N-134_1.0-2.0	N-135_1.0-2.0	N-136_1.0-2.0
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	5/16/2008	6/17/2008	5/13/2008	5/15/2008	5/22/2008	5/15/2008	5/15/2008
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.22)	ND (0.38)	ND (0.23)	3.7 (0.3)	ND (0.32)	ND (0.35)	0.7 (0.21)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	10000	1800	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	ND (0.22)	ND (0.38)	ND (0.23)	ND (0.3)	ND (0.32)	ND (0.35)	ND (0.21)
Cyclohexane	10000	10000	6900	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	ND (0.22)	ND (0.38)	ND (0.23)	ND (0.3)	ND (0.32)	ND (0.35)	ND (0.21)
Hexane	10000	10000	5300	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.22)	ND (0.38)	ND (0.23)	ND (0.3)	ND (0.32)	ND (0.35)	ND (0.21)
Toluene	10000	10000	100	ND (0.22)	ND (0.38)	ND (0.23)	ND (0.3)	ND (0.32)	ND (0.35)	ND (0.21)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	ND (0.22)	ND (0.38)	ND (0.23)	0.48 (0.3)	ND (0.32)	ND (0.35)	ND (0.21)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	190000	350	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	11 (0.99)	1.6 (1)	ND (0.19)
Benzo(a)anthracene	130	190000	340	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	41 (4.9)	1.5 (1)	ND (0.19)
Benzo(a)pyrene	91	190000	46	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	37 (4.9)	1.5 (1)	ND (0.19)
Benzo(b)fluoranthene	76	190000	170	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	44 (4.9)	ND (1)	ND (0.19)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	21 (0.99)	2.4 (1)	ND (0.19)
Benzo(k)fluoranthene	76	190000	610	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	40	1.5	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	35 (4.9)	3 (1)	ND (0.19)
Dibenz(a,h)anthracene	22	190000	270	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	190000	3200	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	3.3 (0.99)	ND (1)	ND (0.19)
Indeno(1,2,3-cd)pyrene	76	190000	18000	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	270	100	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	4.7 (0.99)	2.1 (1)	ND (0.19)
Phenanthrene	190000	190000	10000	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	48 (4.9)	7.7 (1)	ND (0.19)
bis(2-Ethylhexyl)phthalate	6500	10000	130	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	10000	4000	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	ND (0.94)	ND (1)	ND (9.4)	ND (9.8)	50 (4.9)	4.4 (1)	ND (0.19)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	NA	NA	NA	NA	NA	NA	NA
Lead	1000	190000	450	670 (2.25)	88.8 (1.23)	94.9 (1.11)	865 (2.36)	74.6 (1)	273 (1.21)	320 (1.13)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	190000	49000	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	190000	12000	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-140	N-140	N-140	N-141	N-141	N-142	N-142
Sample ID	Contact with	Contact with	Aquifer	AOI-8-N-140-0-2	AOI-8-N-140-0-2~JB52159	AOI-8-N-140-14.5-15	AOI-8-N-141-0-2	AOI-8-N-141-10-10.5	AOI-8-N-142-0-2	AOI-8-N-142-26-26.5
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	0.0 - 2.0	14.5 - 15.0	0.0 - 2.0	10.0 - 10.5	0.0 - 2.0	26.0 - 26.5
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	11/5/2013	11/13/2013	11/6/2013	11/4/2013	11/7/2013	11/7/2013	11/13/2013
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	NA	ND (0.0012)	0.00063 J (0.001)	ND (0.0016)	ND (0.099)	ND (0.00093)	0.121 (0.059)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	NA	ND (0.0061)	0.0093 (0.0051)	ND (0.0078)	0.121 J (0.5)	ND (0.0047)	0.578 (0.29)
tert-Butylbenzene	10000	10000	1800	NA	ND (0.0061)	0.0016 J (0.0051)	ND (0.0078)	ND (0.5)	ND (0.0047)	0.101 J (0.29)
Cumene	10000	10000	2500	NA	ND (0.0061)	0.0017 J (0.0051)	ND (0.0078)	0.0312 J (0.5)	ND (0.0047)	1.04 (0.29)
Cyclohexane	10000	10000	6900	NA	ND (0.0061)	ND (0.0051)	ND (0.0078)	ND (0.5)	ND (0.0047)	0.441 (0.29)
Ethyl Benzene	880	1000	70	NA	ND (0.0012)	0.00052 J (0.001)	ND (0.0016)	ND (0.099)	ND (0.00093)	1.21 (0.059)
Hexane	10000	10000	5300	NA	ND (0.0061)	ND (0.0051)	ND (0.0078)	ND (0.5)	ND (0.0047)	1.82 (0.29)
Methyl tert-butyl ether	8500	9800	2	NA	ND (0.0012)	ND (0.001)	ND (0.0016)	ND (0.099)	ND (0.00093)	ND (0.059)
Toluene	10000	10000	100	NA	ND (0.0012)	ND (0.001)	ND (0.0016)	ND (0.099)	ND (0.00093)	0.342 (0.059)
1,2,4-Trimethylbenzene	4700	5400	300	NA	ND (0.0061)	0.00021 J (0.0051)	ND (0.0078)	ND (0.5)	ND (0.0047)	3.67 (0.29)
1,3,5-Trimethylbenzene	4700	5400	93	NA	ND (0.0061)	ND (0.0051)	ND (0.0078)	ND (0.5)	ND (0.0047)	8.36 (0.29)
Xylenes (total)	7900	9100	1000	NA	ND (0.0012)	0.00022 J (0.001)	ND (0.0016)	ND (0.099)	ND (0.00093)	6.12 (0.059)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.297 (0.037)	NA	0.0912 (0.035)	0.0264 J (0.036)	0.124 (0.034)	ND (0.034)	ND (0.033)
Anthracene	190000	190000	350	1 (0.037)	NA	0.0472 (0.035)	0.101 (0.036)	0.155 (0.034)	0.0665 (0.034)	0.0502 (0.033)
Benzo(a)anthracene	130	190000	340	2.65 (0.037)	NA	0.021 J (0.035)	0.286 (0.036)	0.0539 (0.034)	0.301 (0.034)	0.0241 J (0.033)
Benzo(a)pyrene	91	190000	46	2.45 (0.037)	NA	ND (0.035)	0.417 (0.036)	0.0197 J (0.034)	0.305 (0.034)	ND (0.033)
Benzo(b)fluoranthene	76	190000	170	2.8 (0.037)	NA	ND (0.035)	0.463 (0.036)	ND (0.034)	0.348 (0.034)	ND (0.033)
Benzo(g,h,i)perylene	190000	190000	180	1.46 (0.037)	NA	ND (0.035)	0.38 (0.036)	ND (0.034)	0.217 (0.034)	ND (0.033)
Benzo(k)fluoranthene	76	190000	610	0.987 (0.037)	NA	ND (0.035)	0.166 (0.036)	ND (0.034)	0.12 (0.034)	ND (0.033)
1,1-Biphenyl	34	40	1.5	0.0275 J (0.073)	NA	ND (0.071)	ND (0.072)	ND (0.067)	ND (0.067)	ND (0.066)
Chrysene	760	190000	230	2.69 (0.037)	NA	0.0479 (0.035)	0.351 (0.036)	0.093 (0.034)	0.326 (0.034)	0.0254 J (0.033)
Dibenz(a,h)anthracene	22	190000	270	0.38 (0.037)	NA	ND (0.035)	0.106 (0.036)	ND (0.034)	0.064 (0.034)	ND (0.033)
Fluoranthene	130000	190000	3200	5.41 (0.15)	NA	0.0174 J (0.035)	0.393 (0.036)	0.0439 (0.034)	0.519 (0.034)	0.0349 (0.033)
Fluorene	130000	190000	3800	0.266 (0.037)	NA	0.176 (0.035)	0.0274 J (0.036)	0.338 (0.034)	ND (0.034)	ND (0.033)
Indeno(1,2,3-cd)pyrene	76	190000	18000	1.5 (0.037)	NA	ND (0.035)	0.327 (0.036)	ND (0.034)	0.177 (0.034)	ND (0.033)
2-Methylnaphthalene	240	270	100	0.0925 (0.073)	NA	ND (0.071)	0.0419 J (0.072)	ND (0.067)	0.0237 J (0.067)	8.18 (0.66)
Naphthalene	66	77	25	0.0618 (0.037)	NA	ND (0.035)	0.0191 J (0.036)	ND (0.034)	ND (0.034)	3.32 (0.33)
Phenanthrene	190000	190000	10000	4.67 (0.15)	NA	0.385 (0.035)	0.409 (0.036)	0.947 (0.034)	0.186 (0.034)	0.219 (0.033)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.073)	NA	0.16 (0.071)	ND (0.072)	0.114 (0.067)	ND (0.067)	0.213 (0.066)
Di-n-butylphthalate	10000	10000	4000	ND (0.073)	NA	ND (0.071)	ND (0.072)	ND (0.067)	ND (0.067)	ND (0.066)
Pyrene	96000	190000	2200	5.77 (0.15)	NA	0.054 (0.035)	0.448 (0.036)	0.191 (0.034)	0.426 (0.034)	0.0767 (0.033)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	7.9 (4.5)	NA	4.4 J (5.2)	6.5 (4.6)	7.8 (5.5)	4.7 J (5.2)	3 J (4.1)
Lead	1000	190000	450	191 (0.9)	NA	5 (1)	116 (0.91)	5 (1.1)	83.3 (1)	4.2 (0.81)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	19.3 (3.6)	NA	5.2 (4.1)	19 (3.6)	13.3 (4.4)	13 (4.2)	6.1 (3.3)
Vanadium	16000	190000	49000	37.1 (0.9)	NA	15.2 (1)	68.2 (0.91)	15.5 (1.1)	72.5 (1)	11.6 (0.81)
Zinc	190000	190000	12000	119 (1.8)	NA	25.1 (2.1)	142 (1.8)	41.9 (2.2)	169 (2.1)	16.1 (1.6)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-143	N-143	N-144	N-144	N-145	N-145	N-146
Sample ID	Contact with	Contact with	Aquifer	AOI-8-N-143-0-2	AOI-8-N-143-20.5-21	AOI-8-N-144-0-2	AOI-8-N-144-4-6	AOI-8-N-145-0-2	AOI-8-N-145-8-10	AOI-8-N-146-0-2
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	20.5 - 21.0	0.0 - 2.0	4.0 - 6.0	0.0 - 2.0	8.0 - 10.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	11/4/2013	11/6/2013	11/6/2013	11/7/2013	11/6/2013	11/8/2013	11/6/2013
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.0014)	ND (0.11)	0.00038 J (0.0011)	0.00066 J (0.00091)	ND (0.0011)	20.3 (0.17)	ND (0.00098)
2-Butanone	10000	10000	400	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.0069)	ND (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	1.33 (0.84)	ND (0.0049)
tert-Butylbenzene	10000	10000	1800	ND (0.0069)	ND (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	0.745 J (0.84)	ND (0.0049)
Cumene	10000	10000	2500	ND (0.0069)	0.0303 J (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	20 (0.84)	ND (0.0049)
Cyclohexane	10000	10000	6900	ND (0.0069)	ND (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	33.9 (4.5)	ND (0.0049)
Ethyl Benzene	880	1000	70	ND (0.0014)	ND (0.11)	ND (0.0011)	ND (0.00091)	ND (0.0011)	2.3 (0.17)	ND (0.00098)
Hexane	10000	10000	5300	ND (0.0069)	ND (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	56.3 (4.5)	ND (0.0049)
Methyl tert-butyl ether	8500	9800	2	ND (0.0014)	ND (0.11)	ND (0.0011)	ND (0.00091)	ND (0.0011)	ND (0.17)	ND (0.00098)
Toluene	10000	10000	100	ND (0.0014)	ND (0.11)	ND (0.0011)	0.00029 J (0.00091)	ND (0.0011)	6.74 (0.17)	ND (0.00098)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0069)	0.044 J (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	4.31 (0.84)	ND (0.0049)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0069)	ND (0.53)	ND (0.0057)	ND (0.0046)	ND (0.0055)	1.9 (0.84)	ND (0.0049)
Xylenes (total)	7900	9100	1000	ND (0.0014)	ND (0.11)	ND (0.0011)	ND (0.00091)	ND (0.0011)	4.73 (0.17)	ND (0.00098)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.0218 J (0.038)	ND (0.036)	ND (0.16)	0.0197 J (0.035)	ND (0.033)	7.37 (0.2)	ND (0.037)
Anthracene	190000	190000	350	0.205 (0.038)	ND (0.036)	0.142 J (0.16)	0.0537 (0.035)	0.0534 (0.033)	11.5 (0.2)	0.0493 (0.037)
Benzo(a)anthracene	130	190000	340	1.55 (0.038)	0.202 (0.036)	0.539 (0.16)	0.139 (0.035)	0.212 (0.033)	2.94 (0.2)	0.192 (0.037)
Benzo(a)pyrene	91	190000	46	1.87 (0.038)	0.0845 (0.036)	0.679 (0.16)	0.159 (0.035)	0.336 (0.033)	1.69 (0.2)	0.286 (0.037)
Benzo(b)fluoranthene	76	190000	170	1.87 (0.038)	0.0761 (0.036)	0.724 (0.16)	0.184 (0.035)	0.353 (0.033)	1.65 (0.2)	0.33 (0.037)
Benzo(g,h,i)perylene	190000	190000	180	1.85 (0.038)	0.0828 (0.036)	0.59 (0.16)	0.14 (0.035)	0.526 (0.033)	2.25 (0.2)	0.525 (0.037)
Benzo(k)fluoranthene	76	190000	610	0.686 (0.038)	ND (0.036)	0.267 (0.16)	0.0772 (0.035)	0.107 (0.033)	0.35 (0.2)	0.0987 (0.037)
1,1-Biphenyl	34	40	1.5	0.0301 J (0.077)	ND (0.072)	ND (0.32)	ND (0.069)	ND (0.067)	1.54 (0.39)	ND (0.074)
Chrysene	760	190000	230	1.94 (0.038)	0.495 (0.036)	0.591 (0.16)	0.153 (0.035)	0.254 (0.033)	6.1 (0.2)	0.285 (0.037)
Dibenz(a,h)anthracene	22	190000	270	0.48 (0.038)	0.038 (0.036)	0.179 (0.16)	0.0389 (0.035)	0.0697 (0.033)	0.82 (0.2)	0.0946 (0.037)
Fluoranthene	130000	190000	3200	1.74 (0.038)	ND (0.036)	0.804 (0.16)	0.242 (0.035)	0.334 (0.033)	4.05 (0.2)	0.317 (0.037)
Fluorene	130000	190000	3800	ND (0.038)	1.03 (0.036)	ND (0.16)	0.0203 J (0.035)	ND (0.033)	18.7 (0.2)	ND (0.037)
Indeno(1,2,3-cd)pyrene	76	190000	18000	1.2 (0.038)	0.0633 (0.036)	0.418 (0.16)	0.121 (0.035)	0.296 (0.033)	1.09 (0.2)	0.265 (0.037)
2-Methylnaphthalene	240	270	100	0.301 (0.077)	ND (0.072)	0.0921 J (0.32)	ND (0.069)	ND (0.067)	105 (3.9)	ND (0.074)
Naphthalene	66	77	25	0.0767 (0.038)	ND (0.036)	ND (0.16)	0.0149 J (0.035)	ND (0.033)	7.08 (0.2)	ND (0.037)
Phenanthrene	190000	190000	10000	0.91 (0.038)	1.54 (0.036)	0.427 (0.16)	0.164 (0.035)	0.134 (0.033)	41.4 (2)	0.134 (0.037)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.077)	ND (0.072)	ND (0.32)	0.0372 J (0.069)	0.132 (0.067)	ND (0.39)	ND (0.074)
Di-n-butylphthalate	10000	10000	4000	ND (0.077)	ND (0.072)	ND (0.32)	ND (0.069)	0.0404 J (0.067)	ND (0.39)	ND (0.074)
Pyrene	96000	190000	2200	2.71 (0.038)	ND (0.036)	0.829 (0.16)	0.263 (0.035)	0.398 (0.033)	18.3 (2)	0.256 (0.037)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	10.2 (4.6)	5 (4.6)	5.7 (4.9)	71.8 (5.8)	10.1 (5.4)	7.6 (6)	6.8 (4.7)
Lead	1000	190000	450	147 (0.92)	5.9 (0.93)	182 (0.99)	4020 (4.6)	49 (1.1)	379 (1.2)	125 (0.93)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	34.5 (3.7)	9.3 (3.7)	16.3 (3.9)	897 (4.6)	14.8 (4.3)	26.7 (4.8)	47.3 (3.7)
Vanadium	16000	190000	49000	45.7 (0.92)	17.7 (0.93)	56.5 (0.99)	26.3 (5.8)	37.2 (1.1)	22.1 (1.2)	41.4 (0.93)
Zinc	190000	190000	12000	68.4 (1.8)	26.1 (1.9)	220 (2)	3180 (2.3)	109 (2.2)	415 (2.4)	190 (1.9)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-146	N-147D	N-147D	N-148D	N-149D	N-149D	N-150
Sample ID	Contact with	Contact with	Aquifer	AOI-8-N-146-17-18	AOI8-N-147D-0-2-20160714	AOI8-N-147D-6-8-20160714	AOI8-N-148D-0-2-20160712	AOI8-N-149D-0-2-20160715	AOI8-N-149D-6-8-20160715	AOI8-N-150-0-2-20160715
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	17.0 - 18.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	11/7/2013	7/14/2016	7/14/2016	7/12/2016	7/15/2016	7/15/2016	7/15/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.11)	ND (0.201)	ND (0.734)	0.0284 (0.00138)	ND (0.00119)	ND (0.0272)	0.00139 (0.00108)
2-Butanone	10000	10000	400	NA	ND (2.01)	ND (7.34)	0.0306 (0.0138)	0.0138 (0.0119)	ND (0.272)	ND (0.0108)
sec-Butylbenzene	10000	10000	2300	0.395 J (0.57)	0.477 (0.201)	1.82 (0.734)	ND (0.00138)	ND (0.00119)	0.222 (0.0272)	ND (0.00108)
tert-Butylbenzene	10000	10000	1800	0.312 J (0.57)	0.669 (0.201)	2.99 (0.734)	ND (0.00138)	ND (0.00119)	ND (0.0272)	ND (0.00108)
Cumene	10000	10000	2500	0.562 J (0.57)	ND (2.01)	ND (7.34)	ND (0.0138)	ND (0.0119)	ND (0.272)	ND (0.0108)
Cyclohexane	10000	10000	6900	0.622 (0.57)	ND (0.201)	ND (0.734)	0.00171 (0.00138)	ND (0.00119)	ND (0.0272)	ND (0.00108)
Ethyl Benzene	880	1000	70	ND (0.11)	ND (0.201)	ND (0.734)	ND (0.00138)	ND (0.00119)	ND (0.0272)	ND (0.00108)
Hexane	10000	10000	5300	ND (0.57)	ND (2.01)	ND (7.34)	ND (0.0138)	ND (0.0119)	ND,MI,OE (0.272)	ND (0.0108)
Methyl tert-butyl ether	8500	9800	2	ND (0.11)	ND (0.201)	ND (0.734)	ND (0.00138)	ND (0.00119)	ND (0.0272)	ND (0.00108)
Toluene	10000	10000	100	ND (0.11)	ND (1.01)	ND (3.67)	ND (0.00691)	ND (0.00596)	ND (0.136)	ND (0.00542)
1,2,4-Trimethylbenzene	4700	5400	300	0.15 J (0.57)	ND (0.201)	ND (0.734)	ND (0.00138)	ND (0.00119)	ND (0.0272)	ND (0.00108)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.57)	ND (0.201)	ND (0.734)	ND (0.00138)	ND (0.00119)	ND (0.0272)	ND (0.00108)
Xylenes (total)	7900	9100	1000	ND (0.11)	ND (0.603)	ND (2.2)	ND (0.00415)	ND (0.00358)	ND (0.0816)	ND (0.00325)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	0.294 (0.036)	ND (0.195)	1.01 (0.391)	ND (2.28)	0.174 (0.0394)	2.28 (0.386)	0.297 (0.179)
Anthracene	190000	190000	350	0.526 (0.036)	0.249 (0.195)	ND (0.391)	ND (2.28)	0.239 (0.0394)	2.89 (0.386)	0.359 (0.179)
Benzo(a)anthracene	130	190000	340	0.64 (0.036)	ND (0.195)	ND (0.391)	6.77 (2.28)	0.42 (0.0394)	3.92 (0.386)	0.689 (0.179)
Benzo(a)pyrene	91	190000	46	0.487 (0.036)	ND (0.195)	ND (0.391)	9.07 (2.28)	0.385 (0.0394)	3.13 (0.386)	0.67 (0.179)
Benzo(b)fluoranthene	76	190000	170	0.523 (0.036)	ND (0.195)	ND (0.391)	14 (2.28)	0.491 (0.0394)	3.75 (0.386)	0.834 (0.179)
Benzo(g,h,i)perylene	190000	190000	180	0.404 (0.036)	ND (0.195)	ND (0.391)	2.72 (2.28)	0.125 (0.0394)	0.644 (0.386)	0.204 (0.179)
Benzo(k)fluoranthene	76	190000	610	0.108 (0.036)	ND (0.195)	ND (0.391)	5.19 (2.28)	0.178 (0.0394)	1.5 (0.386)	0.266 (0.179)
1,1-Biphenyl	34	40	1.5	ND (0.073)	ND (1.97)	ND (3.94)	ND (23)	ND (0.397)	ND (3.89)	ND (1.8)
Chrysene	760	190000	230	1.09 (0.036)	ND (0.195)	ND (0.391)	7.15 (2.28)	0.362 (0.0394)	3.26 (0.386)	0.641 (0.179)
Dibenz(a,h)anthracene	22	190000	270	0.154 (0.036)	ND (0.195)	ND (0.391)	ND (2.28)	ND (0.0394)	ND (0.386)	ND (0.179)
Fluoranthene	130000	190000	3200	1.04 (0.036)	0.206 (0.195)	ND (0.391)	10.3 (2.28)	0.763 (0.0394)	6.92 (0.386)	1.19 (0.179)
Fluorene	130000	190000	3800	1.05 (0.036)	1.12 (0.195)	1.39 (0.391)	ND (2.28)	0.173 (0.0394)	1.82 (0.386)	0.257 (0.179)
Indeno(1,2,3-cd)pyrene	76	190000	18000	0.245 (0.036)	ND (0.195)	ND (0.391)	3.21 (2.28)	0.138 (0.0394)	0.671 (0.386)	0.226 (0.179)
2-Methylnaphthalene	240	270	100	ND (0.073)	11.4 (0.39)	0.519 (0.391)	ND (2.28)	ND (0.0394)	ND (0.386)	ND (0.179)
Naphthalene	66	77	25	ND (0.036)	ND (0.195)	ND (0.391)	ND (2.28)	0.108 (0.0394)	0.558 (0.386)	ND (0.179)
Phenanthrene	190000	190000	10000	3.21 (0.036)	2.08 (0.195)	3.3 (0.391)	4.74 (2.28)	0.491 (0.0394)	3.83 (0.386)	0.618 (0.179)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (0.073)	ND (1.97)	ND (3.94)	ND (23)	ND (0.397)	ND (3.89)	ND (1.8)
Di-n-butylphthalate	10000	10000	4000	ND (0.073)	ND (1.97)	ND (3.94)	ND (23)	ND (0.397)	ND (3.89)	ND (1.8)
Pyrene	96000	190000	2200	1.21 (0.036)	0.484 (0.195)	0.624 (0.391)	7.04 (2.28)	0.633 (0.0394)	6.68 (0.386)	0.95 (0.179)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	13.3 (5.6)	5.77 (1.18)	4.35 (1.18)	7.42 (1.38)	1.54 (1.19)	8.65 (1.17)	2.9 (1.08)
Lead	1000	190000	450	31.9 (1.1)	170 (0.592)	6.75 (0.592)	547 (0.691)	21.2 (0.596)	107 (0.585)	58.9 (0.542)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	20.2 (4.5)	11.3 (2.37)	7.82 (2.37)	28.9 (2.76)	4.23 (2.39)	25.9 (2.34)	6.24 (2.17)
Vanadium	16000	190000	49000	24.5 (1.1)	21.9 (2.37)	20.2 (2.37)	72.9 (2.76)	6.4 (2.39)	257 (2.34)	11.7 (2.17)
Zinc	190000	190000	12000	75 (2.3)	38.7 (5.92)	24.2 (5.92)	727 (6.91)	31.5 (5.96)	83.8 (5.85)	67.7 (5.42)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-150	N-151	N-151	N-152	N-152	N-153	N-153
Sample ID	Contact with	Contact with	Aquifer	AOI8-N-150-6-8-20160715	AOI8-N-151-0-2-20160718	AOI8-N-151-6-8-20160718	AOI8-N-152-0-2-20160719	AOI8-N-152-6-8-20160719	AOI8-N-153-0-2-20160720	AOI8-N-153-14-15-20160805
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0	0.0 - 2.0	14.0 - 15.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	7/15/2016	7/18/2016	7/18/2016	7/19/2016	7/19/2016	7/20/2016	8/5/2016
Comments	MSCs	MSCs	MSCs							
Volatile Organic Compounds										
Benzene	280	330	0.5	ND (0.0227)	ND (0.00114)	0.0094 MI (0.00126)	ND (0.00115)	ND (0.00116)	0.00324 (0.00128)	ND (0.00107)
2-Butanone	10000	10000	400	ND (0.227)	ND (0.0114)	ND (0.0126)	ND (0.0115)	ND (0.0116)	ND (0.0128)	NA
sec-Butylbenzene	10000	10000	2300	0.172 (0.0227)	ND (0.00114)	0.0135 (0.00126)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
tert-Butylbenzene	10000	10000	1800	ND (0.0227)	ND (0.00114)	ND (0.00126)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
Cumene	10000	10000	2500	ND (0.227)	ND (0.0114)	0.0265 (0.0126)	ND (0.0115)	ND (0.0116)	ND (0.0128)	ND (0.0107)
Cyclohexane	10000	10000	6900	ND (0.0227)	0.147 (0.0259)	1.11 (0.0277)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
Ethyl Benzene	880	1000	70	ND (0.0227)	ND (0.00114)	ND (0.00126)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
Hexane	10000	10000	5300	ND (0.227)	ND (0.0114)	0.0869 MI (0.0126)	ND (0.0115)	ND (0.0116)	0.0348 (0.0128)	ND (0.0107)
Methyl tert-butyl ether	8500	9800	2	ND (0.0227)	ND (0.00114)	ND (0.00126)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
Toluene	10000	10000	100	ND (0.113)	ND (0.0057)	ND (0.0063)	ND (0.00573)	ND (0.00581)	ND (0.00638)	ND (0.00535)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0227)	ND (0.00114)	ND (0.00126)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0227)	ND (0.00114)	ND (0.00126)	ND (0.00115)	ND (0.00116)	ND (0.00128)	ND (0.00107)
Xylenes (total)	7900	9100	1000	ND (0.068)	ND (0.00342)	0.042 (0.00378)	ND (0.00344)	ND (0.00349)	ND (0.00383)	ND (0.00321)
Semivolatile Organic Compounds										
Acenaphthene	190000	190000	4700	37.6 (1.87)	ND (0.752)	ND (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Anthracene	190000	190000	350	44.9 (1.87)	ND (0.752)	ND (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Benzo(a)anthracene	130	190000	340	42.2 (1.87)	ND (0.752)	1.09 (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Benzo(a)pyrene	91	190000	46	41.8 (1.87)	ND (0.752)	ND (2.08)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Benzo(b)fluoranthene	76	190000	170	51.1 (1.87)	1.02 (0.752)	ND (2.08)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Benzo(g,h,i)perylene	190000	190000	180	11.2 (1.87)	ND (0.752)	ND (2.08)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Benzo(k)fluoranthene	76	190000	610	16.3 (1.87)	ND (0.752)	ND (2.08)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
1,1-Biphenyl	34	40	1.5	ND (18.9)	ND (7.59)	ND (8.39)	ND (0.382)	ND (0.387)	ND (2.12)	ND (0.356)
Chrysene	760	190000	230	38.4 (1.87)	ND (0.752)	3.97 (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Dibenz(a,h)anthracene	22	190000	270	ND (1.87)	ND (0.752)	ND (2.08)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Fluoranthene	130000	190000	3200	130 (7.48)	1.17 (0.752)	ND (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Fluorene	130000	190000	3800	30.4 (1.87)	ND (0.752)	0.896 (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Indeno(1,2,3-cd)pyrene	76	190000	18000	10.2 (1.87)	ND (0.752)	ND (2.08)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
2-Methylnaphthalene	240	270	100	19.4 (1.87)	ND (0.752)	ND (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Naphthalene	66	77	25	40.4 (1.87)	ND (0.752)	ND (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Phenanthrene	190000	190000	10000	172 (7.48)	0.862 (0.752)	1.33 (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (18.9)	ND (7.59)	ND (8.39)	ND (0.382)	ND (0.387)	ND (2.12)	ND (0.356)
Di-n-butylphthalate	10000	10000	4000	ND (18.9)	ND (7.59)	ND (8.39)	ND (0.382)	ND (0.387)	ND (2.12)	ND (0.356)
Pyrene	96000	190000	2200	123 (7.48)	1.07 (0.752)	ND (0.831)	ND (0.0378)	ND (0.0383)	ND (0.211)	ND (0.0353)
Metals										
Arsenic	61	190000	29	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	190000	130	8.18 (1.13)	6.28 (1.14)	8 (1.26)	6.31 (1.15)	5.22 (1.16)	5.04 (1.28)	14.4 (1.07)
Lead	1000	190000	450	118 (0.567)	138 MI (0.57)	370 (0.63)	86.4 (0.573)	12.7 (0.581)	108 (0.638)	6.71 (0.535)
Mercury	510	190000	10	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	190000	650	16.7 (2.27)	17.2 (2.28)	17.1 (2.52)	11.2 (2.29)	5.7 (2.32)	8.25 (2.55)	18 (2.14)
Vanadium	16000	190000	49000	22.8 (2.27)	25.3 (2.28)	16.7 (2.52)	26.6 (2.29)	11.1 (2.32)	21.7 (2.55)	29.4 (2.14)
Zinc	190000	190000	12000	126 (5.67)	223 MI (5.7)	259 (6.3)	57.5 (5.73)	26.9 (5.81)	59.6 (6.38)	43.9 (5.35)

Notes:

1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:

ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E1
Summary of Historical Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res Direct	Non-Res Direct	Non-Res Used	N-154	N-154	N-155	N-155
Sample ID	Contact with	Contact with	Aquifer	AOI8-N-154-0-2-20160711	AOI8-N-154-10-12-20160808	AOI8-N-155-0-2-20160805	AOI8-N-155-14-16-20160906
Collection Depth (ft bgs)	Surface Soil	Subsurface Soil	(TDS ≤ 2500)	0.0 - 2.0	10.0 - 12.0	0.0 - 2.0	14.0 - 16.0
Sample Date	(0-2 ft)	(2-15 ft)	Soil-to-GW	7/11/2016	8/8/2016	8/5/2016	9/6/2016
Comments	MSCs	MSCs	MSCs				
Volatile Organic Compounds							
Benzene	280	330	0.5	ND (0.0298)	ND (0.00126)	0.00741 (0.00141)	ND (0.0011)
2-Butanone	10000	10000	400	ND (0.298)	NA	NA	NA
sec-Butylbenzene	10000	10000	2300	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
tert-Butylbenzene	10000	10000	1800	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
Cumene	10000	10000	2500	ND (0.298)	ND (0.0126)	ND (0.0141)	ND (0.011)
Cyclohexane	10000	10000	6900	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
Ethyl Benzene	880	1000	70	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
Hexane	10000	10000	5300	ND (0.298)	ND (0.0126)	ND (0.0141)	ND (0.011)
Methyl tert-butyl ether	8500	9800	2	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
Toluene	10000	10000	100	ND (0.149)	ND (0.00629)	ND (0.00707)	ND (0.00548)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0298)	ND (0.00126)	ND (0.00141)	ND (0.0011)
Xylenes (total)	7900	9100	1000	ND (0.0893)	ND (0.00377)	ND (0.00424)	ND (0.00329)
Semivolatile Organic Compounds							
Acenaphthene	190000	190000	4700	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Anthracene	190000	190000	350	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Benzo(a)anthracene	130	190000	340	ND (2.43)	26.9 (20.7)	0.448 (0.445)	ND (0.0361)
Benzo(a)pyrene	91	190000	46	3.55 (2.43)	22.3 (20.7)	ND (0.445)	ND (0.0361)
Benzo(b)fluoranthene	76	190000	170	2.85 (2.43)	32 (20.7)	0.465 (0.445)	ND (0.0361)
Benzo(g,h,i)perylene	190000	190000	180	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Benzo(k)fluoranthene	76	190000	610	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
1,1-Biphenyl	34	40	1.5	ND (24.5)	ND (209)	ND (4.49)	ND (0.365)
Chrysene	760	190000	230	4.16 (2.43)	26.3 (20.7)	ND (0.445)	ND (0.0361)
Dibenz(a,h)anthracene	22	190000	270	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Fluoranthene	130000	190000	3200	ND,OE (2.43)	64 (20.7)	0.743 (0.445)	ND (0.0361)
Fluorene	130000	190000	3800	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Indeno(1,2,3-cd)pyrene	76	190000	18000	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
2-Methylnaphthalene	240	270	100	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Naphthalene	66	77	25	ND (2.43)	ND (20.7)	ND (0.445)	ND (0.0361)
Phenanthrene	190000	190000	10000	ND (2.43)	56.4 (20.7)	0.56 (0.445)	ND (0.0361)
bis(2-Ethylhexyl)phthalate	6500	10000	130	ND (24.5)	ND (209)	ND (4.49)	ND (0.365)
Di-n-butylphthalate	10000	10000	4000	ND (24.5)	ND (209)	ND (4.49)	ND (0.365)
Pyrene	96000	190000	2200	ND (2.43)	51.7 (20.7)	0.653 (0.445)	ND,OE (0.0361)
Metals							
Arsenic	61	190000	29	NA	NA	NA	NA
Chromium (total)	180	140000	190	NA	NA	NA	NA
Cobalt	960	190000	130	ND (7.35)	8.65 (1.26)	8.56 (1.35)	8.17 (1.1)
Lead	1000	190000	450	5890 (3.67)	327 (0.629)	375 (0.674)	6.61 (0.548)
Mercury	510	190000	10	NA	NA	NA	NA
Nickel	64000	190000	650	ND (14.7)	35.4 (2.51)	14.1 (2.69)	9.37 (2.19)
Vanadium	16000	190000	49000	24.1 (14.7)	47 (2.51)	26.1 (2.69)	20.1 (2.19)
Zinc	190000	190000	12000	2220 (36.7)	12200 (314)	338 (6.74)	27.2 (5.48)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 AP, N, OE, and + are unknown qualifiers.
4 Gray-shaded surface soil concentrations exceed the Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs.
5 No concentrations in subsurface soil exceed the Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	HW-4-150'	HW-4-300'	HW-4-450'	N-2	N-2	N-2	N-2	N-2	N-2	N-2	N-2	N-2
Field Sample ID	Used Aquifer	HW-4-150'-03122020	HW-4-300'-03122020	HW-4-450'-03172020	N-2_040413	N-2~JB68336	N-2_20150519	N-2-20160317	N-2-20160523	N-2-20160822-WG	N-2-20160907-WG	N-2-20161014-WG
Sample Date	(TDS ≤ 2500)	3/12/2020	3/12/2020	3/17/2020	4/4/2013	6/2/2014	5/19/2015	3/17/2016	5/23/2016	8/22/2016	9/7/2016	10/14/2016
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.0475 (0.001)	0.106 (0.001)	0.181 (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.001)	0.00146 (0.001)
Cumene	3.5	0.0322 (0.001)	0.0191 (0.001)	0.0794 (0.005)	0.0123 (0.002)	0.0018 (0.001)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	0.00119 (0.001)	ND (0.001)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	0.00115 (0.001)	NA	0.00104 (0.001)	ND (0.001)	ND (0.001)
1,2-Dibromoethane	0.00005	ND (0.00004)	ND (0.00004)	ND (0.00004)	ND (0.00002)	ND (0.00002)	ND (0.000029)	ND (0.00001)	ND (0.000029)	ND (0.00001)	ND (0.00001)	ND (0.00001)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Ethyl Benzene	0.7	0.039 (0.001)	0.0438 (0.001)	0.206 (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Hexane	5.8	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.0161 (0.001)	0.0432 (0.001)	0.117 (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	0.006 (0.001)	0.0244 (0.001)	0.139 (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.001)	ND (0.001)
1,3,5-Trimethylbenzene	0.53	0.0456 (0.001)	0.0453 (0.001)	0.319 (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.001)	ND (0.001)
Xylenes (total)	10	0.0631 (0.003)	0.148 (0.003)	0.631 (0.015)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND (0.001)	ND (0.003)	ND (0.003)	ND (0.003)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	0.00115 (0.001)	NA	0.00154 (0.0001)	0.00182 (0.00005)	0.000974 (0.00005)
Anthracene	0.066	NA	NA	NA	NA	0.000498 (0.0001)	0.0003 J (0.0005)	ND (0.001)	0.0002 J (0.0005)	0.000492 (0.0001)	0.001 (0.00005)	0.000502 (0.00005)
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	0.000807 (0.0001)	0.0006 (0.0005)	ND (0.001)	0.0004 J (0.0005)	0.000601 (0.0001)	0.000308 (0.00005)	0.000128 (0.00005)
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	0.000959 (0.0001)	0.0008 (0.0005)	ND (0.001)	0.0005 J (0.0005)	0.000803 (0.0001)	0.000225 (0.00005)	0.0000703 (0.00005)
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	0.00134 (0.0001)	0.0008 (0.0005)	ND (0.001)	0.0005 J (0.0005)	0.000913 (0.0001)	0.000274 (0.00005)	0.0000811 (0.00005)
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	0.00143 (0.0001)	0.0009 (0.0005)	ND (0.001)	0.0004 J (0.0005)	0.00095 (0.0001)	0.000162 (0.00005)	ND (0.00005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	0.000308 (0.0001)	0.000084 (0.00005)	ND (0.00005)
Chrysene	0.0019	NA	NA	NA	NA	0.000766 (0.0001)	0.0007 (0.0005)	ND (0.001)	0.0004 J (0.0005)	0.000485 (0.0001)	0.000263 (0.00005)	0.000102 (0.00005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	ND (0.0001)	ND (0.00005)	ND (0.00005)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND,OE (0.01)
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	0.00202 (0.0001)	0.00153 (0.00005)	0.00107 (0.00005)
Fluorene	1.9	NA	NA	NA	NA	0.000268 (0.0001)	0.0002 J (0.0005)	ND (0.001)	0.0006 (0.0005)	0.000504 (0.0001)	0.00142 (0.00005)	0.000828 (0.00005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	0.000654 (0.0001)	0.000129 (0.00005)	ND (0.00005)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	ND (0.0005)	ND (0.00025)	ND (0.00025)
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND,OE (0.01)
Naphthalene	0.1	NA	NA	NA	NA	0.000117 (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)	ND (0.0005)	0.000277 (0.00025)	0.000252 (0.00025)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	ND,OE (0.01)	NA	ND (0.01)	ND,OE (0.01)	ND (0.01)
Phenanthrene	1.1	NA	NA	NA	NA	0.000394 (0.0001)	0.0002 J (0.0005)	ND (0.001)	0.0001 J (0.0005)	0.000377 (0.0001)	0.000482 (0.00005)	0.000171 (0.00005)
Phenol	2	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND,OE (0.01)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	ND (0.003)	NA	ND (0.003)	ND (0.003)	ND (0.003)
Pyrene	0.13	NA	NA	NA	NA	0.00127 (0.0001)	0.001 (0.0005)	ND (0.001)	0.001 (0.0005)	0.00138 (0.0001)	0.0012 (0.00005)	0.000669 (0.00005)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	ND (0.002)	ND (0.002)	0.00246 (0.002)
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	NA	NA	NA	0.00039 J (0.001)	0.0041 (0.003)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)
Nickel	--	NA	NA	NA	NA	NA	NA	0.0065 (0.002)	NA	0.00738 B (0.002)	0.00752 (0.002)	0.014 (0.002)
Zinc	--	NA	NA	NA	NA	NA	NA	ND (0.025)	NA	ND (0.025)	ND (0.025)	0.0334 (0.025)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-2	N-2	N-2	N-2	N-98	N-98	N-98	N-98	N-98	N-98	N-98
Field Sample ID	Used Aquifer	N-2-20170523	N-2_20180629	N-2_20190626	N-2_20191025	N-98_07/14/08	N-98_09-20-2011	N-98_040513	N-98~JB68586	N-98_20150520	N-98-20160318	N-98-20160524
Sample Date	(TDS ≤ 2500)	5/23/2017	6/29/2018	6/26/2019	10/25/2019	7/14/2008	9/20/2011	4/5/2013	6/4/2014	5/20/2015	3/18/2016	5/24/2016
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.004 (0.001)	ND (0.001)	ND (0.001)	0.006 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Cumene	3.5	0.0009 J (0.002)	ND (0.001)	0.004 J (0.005)	0.003 J (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.00001)	ND (0.000028)	ND (0.000028)	ND (0.00003)	ND (0.00005)	ND (0.00002)	ND (0.00002)	ND (0.000029)	ND (0.00001)	ND (0.000029)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.001)	0.0002 J (0.001)	0.002 (0.001)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)
Xylenes (total)	10	ND (0.001)	ND (0.003)	ND (0.005)	ND (0.003)	ND (0.001)	ND (0.006)	ND (0.001)	ND (0.001)	0.0007 J (0.001)	ND (0.003)	ND (0.001)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Anthracene	0.066	0.003 (0.0005)	0.000218 (0.00005)	0.0003 J (0.0005)	0.002 J (0.005)	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Benzo(a)anthracene	0.0039	0.009 (0.0005)	ND (0.00005)	ND (0.0005)	0.005 J (0.005)	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Benzo(a)pyrene	0.0002	0.01 (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.005)	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Benzo(b)fluoranthene	0.0012	0.011 (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.005)	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Benzo(g,h,i)perylene	0.00026	0.006 (0.0005)	ND (0.00005)	ND (0.0005)	0.005 J (0.005)	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Chrysene	0.0019	0.009 (0.0005)	ND (0.00005)	ND (0.0005)	0.005 J (0.005)	ND (0.005)	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Fluorene	1.9	0.002 (0.0005)	0.000526 (0.00005)	0.001 (0.0005)	0.002 J (0.005)	ND (0.005)	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA
Naphthalene	0.1	0.0003 J (0.0005)	ND (0.00025)	0.0004 J (0.0005)	ND (0.005)	ND (0.005)	ND (0.008)	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA
Phenanthrene	1.1	0.003 (0.0005)	0.000115 (0.00005)	0.0004 J (0.0005)	0.004 J (0.005)	ND (0.005)	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.003)	NA
Pyrene	0.13	0.015 (0.0005)	0.000509 (0.00005)	0.0008 (0.0005)	0.009 (0.005)	ND (0.005)	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.001)	ND (0.0005)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00412 (0.002)	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.00018 J (0.001)	ND (0.002)	ND (0.003)	0.0026 (0.0005)	ND (0.001)	ND (0.00048)	ND (0.003)	ND (0.003)	0.00032 J (0.001)	ND (0.002)	ND (0.001)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-98	N-98	N-98	N-98	N-98	N-98	N-98	N-98	N-98	N-137	N-137
Field Sample ID	Used Aquifer	N-98-20160823-WG	N-98-20161014-WG	N-98-20170524	N-98_20180629	N-98_20190625	N-98_20191023	N-98_20210414	N-98_20220401	N-98_20230515	MW-13_09-21-2011	MW-13_02-13-2013
Sample Date	(TDS ≤ 2500)	8/23/2016	10/14/2016	5/24/2017	6/29/2018	6/25/2019	10/23/2019	4/14/2021	4/1/2022	5/15/2023	9/21/2011	2/13/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0039 (0.001)	0.00058 (0.0005)	ND (0.0005)	0.47	0.16
sec-Butylbenzene	9.7	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	0.00046 J (0.005)	ND (0.001)	ND (0.001)	0.062	0.075
Cyclohexane	53	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00001)	ND (0.00001)	ND (0.000029)	ND (0.00001)	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.00002)	ND (0.00002)	ND (0.00005)	ND (0.000029)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.24	0.1
Hexane	5.8	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	ND (0.05)	ND (0.01)	ND (0.01)	NA	NA
Toluene	1	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.00033 J (0.001)	ND (0.001)	ND (0.001)	0.34	0.15
1,2,4-Trimethylbenzene	0.53	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	1.1	0.31
1,3,5-Trimethylbenzene	0.53	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	0.00096 J (0.005)	ND (0.002)	ND (0.002)	0.39	0.87
Xylenes (total)	10	ND (0.003)	ND (0.003)	ND (0.001)	ND (0.003)	ND (0.005)	ND (0.003)	ND (0.006)	ND (0.001)	ND (0.001)	2.9	1.3
Semivolatile Organic Compounds												
Acenaphthene	3.8	ND (0.00005)	ND (0.00005)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0000534 (0.00005)	0.0000594 (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	0.0000415 JB (0.00008)	ND (0.000083)	NA	NA
Benzo(a)anthracene	0.0039	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00004)	ND (0.000042)	NA	0.003
Benzo(a)pyrene	0.0002	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00004)	ND (0.000042)	NA	0.002
Benzo(b)fluoranthene	0.0012	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00004)	ND (0.000042)	NA	0.002
Benzo(g,h,i)perylene	0.00026	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00008)	ND (0.000083)	NA	0.001
Benzo(k)fluoranthene	0.00055	ND (0.00005)	ND (0.00005)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00008)	ND (0.000083)	NA	0.004
Dibenz(a,h)anthracene	0.0006	ND (0.00005)	ND (0.00005)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	ND (0.01)	ND,OE (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	ND (0.00005)	ND (0.00005)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00008)	ND (0.000083)	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.00005)	ND (0.00005)	NA	NA	NA	NA	NA	NA	NA	NA	0.001
2-Methylnaphthalene	0.026	ND (0.00025)	ND (0.00025)	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	ND (0.01)	ND,OE (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.00025)	ND (0.00025)	ND (0.0005)	ND (0.00025)	ND (0.0005)	ND (0.0005)	ND (0.00051)	0.0000679 JB (0.00008)	0.0000727 J (0.000083)	1	0.98
4-Nitrophenol	0.06	ND (0.01)	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND (0.00008)	ND (0.000083)	NA	NA
Phenol	2	ND (0.01)	ND,OE (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	ND (0.003)	ND (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0000869 (0.00005)	0.0000881 (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00051)	0.0000403 J (0.00008)	ND (0.000083)	NA	0.01
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	200 (0.5)	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	0.00458 (0.002)	0.00286 (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	9 (0.2)	NA	NA	NA	NA
Lead	--	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.003)	ND (0.0005)	ND (0.00052)	ND (0.001)	ND (0.001)	ND (0.00048)	0.0069
Nickel	--	ND (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	ND (0.025)	ND (0.025)	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-137	N-137	N-137	N-137	N-137	N-137	N-137	N-137	N-137	N-137	N-137
Field Sample ID	Used Aquifer	MW-13_04-04-2013	MW-13_05-14-2013	MW-13_06-26-2013	MW-13_08-06-2013	MW-13_09-18-2013	MW-13_11-05-2013	MW-13_12-20-2013	MW-13_04-16-2014	MW-13_06-24-2014	MW-13_09-16-2014	MW-13_12-05-2014
Sample Date	(TDS ≤ 2500)	4/4/2013	5/14/2013	6/26/2013	8/6/2013	9/18/2013	11/5/2013	12/20/2013	4/16/2014	6/24/2014	9/16/2014	12/5/2014
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.32	0.31	0.21	0.23	0.41	0.48	0.22	0.26	0.28	0.28	0.28
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.096	0.15	0.074	0.086	0.12	0.19	0.1	0.091	0.07	0.061	0.055
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000028)	ND (0.00001)	ND (0.0000097)	ND (0.0000098)	0.000017 J	ND (0.0000097)	ND (0.0000096)	ND	ND	0.00001 J
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.005)	ND (0.005)	ND	ND	ND
Ethyl Benzene	0.7	0.14	0.23	0.18	0.17	0.25	0.35	0.19	0.13	0.15	0.11	0.15
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.005)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.005)	ND (0.005)	ND	ND	ND
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.15	0.22	0.2	0.17	0.19	0.22	0.19	0.14	0.23	0.19	0.22
1,2,4-Trimethylbenzene	0.53	0.27	0.45	0.4	0.36	0.53	0.75	0.44	0.22	0.29	0.25	0.24
1,3,5-Trimethylbenzene	0.53	0.87	1.2	0.58	0.8	1	1.8	0.68	0.79	0.3	0.23	0.25
Xylenes (total)	10	1.3	1.7	1.6	1.3	1.6	2.1	1.4	0.89	1.6	1.2	1.4
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.001	0.006	0.006	0.001	0.002	0.002	0.002	0.004 J	0.006 J	0.006	0.008
Benzo(a)pyrene	0.0002	0.001	0.004 J	0.004 J	0.0009	0.001	0.001	0.001	0.003 J	0.004 J	0.004	0.005
Benzo(b)fluoranthene	0.0012	0.001	0.003 J	0.003 J	0.0009	0.001	0.001	0.002	0.003 J	0.004 J	0.004	0.005
Benzo(g,h,i)perylene	0.00026	0.0004 J	0.002 J	0.002 J	0.0005 J	0.0005 J	0.0009	0.0007	0.002 J	0.002 J	0.002	0.003 J
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.001	0.007	0.007	0.002	0.002	0.003	0.003	0.005	0.007 J	0.008	0.011
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	0.0003 J	0.001 J	0.001 J	0.0004 J	0.0004 J	0.0007	0.0005	0.001 J	ND	0.001	0.002 J
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.72	1.2	0.74	0.93	1.2	2.1	0.97	1.3	0.46	0.33	0.64
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.004	0.018	0.017	0.004	0.006	0.007	0.007	0.012	0.014	0.019	0.025
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)	ND (0.000085)	0.00011 J	0.00011 J	0.00000021 J	ND	ND
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-137	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138
Field Sample ID	Used Aquifer	N-137-20160322	MW-14_09-21-2011	MW-14_02-13-2013	MW-14 Dup_02-13-2013	MW-14_04-04-2013	MW-14_05-14-2013	MW-14 Dup_05-14-2013	MW-14_06-26-2013	MW-14 Dup_06-26-2013	MW-14_08-06-2013	MW-14_09-18-2013
Sample Date	(TDS ≤ 2500)	3/22/2016	9/21/2011	2/13/2013	2/13/2013	4/4/2013	5/14/2013	5/14/2013	6/26/2013	6/26/2013	8/6/2013	9/18/2013
Comments	MSCs				Field Duplicate			Field Duplicate		Field Duplicate		
Volatile Organic Compounds												
Benzene	0.005	0.144 SL (0.02)	1.7	1.5	1.4	1.2	1.3	1.4	0.82	0.92	0.8	1.1
sec-Butylbenzene	9.7	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.0478 SL (0.02)	0.15	0.11	0.088	0.14	0.098	0.073	0.078	0.084	0.2	0.071
Cyclohexane	53	0.0236 SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND,SL (0.00001)	ND (0.00005)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.00001)	ND (0.00001)	ND (0.0000097)	ND (0.0000099)
1,2-Dichloroethane	0.005	ND,SL (0.02)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.005)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.005)
Ethyl Benzene	0.7	0.124 SL (0.02)	0.93	0.35	0.34	0.5	0.37	0.3	0.26	0.28	0.57	0.32
Hexane	5.8	0.148 SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND,SL (0.02)	ND (0.02)	0.012	0.016	0.011	0.011	0.01	ND (0.01)	ND (0.01)	0.013 J	0.007 J
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND,SL (0.1)	0.44	0.22	0.24	0.26	0.27	0.25	0.18	0.2	0.23	0.23
1,2,4-Trimethylbenzene	0.53	ND,SL (0.02)	0.21	0.12	0.079	0.11	0.057	0.046	0.048	0.048	0.22	0.089
1,3,5-Trimethylbenzene	0.53	0.137 SL (0.02)	0.76	0.59	0.42	0.64	0.44	0.31	0.38	0.42	1.1	0.34
Xylenes (total)	10	0.159 SL (0.06)	1.8	0.8	0.75	1	0.82	0.67	0.58	0.65	1.4	0.78
Semivolatile Organic Compounds												
Acenaphthene	3.8	0.0218 SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	ND,SL (0.02)	NA	0.0009	0.0005 J	0.001 J	0.0007	0.0005 J	0.002	0.001	0.006	0.001
Benzo(a)pyrene	0.0002	ND,SL (0.02)	NA	0.0004 J	0.0002 J	ND (0.006)	0.0003 J	0.0003 J	0.001	0.001	0.003	0.0008
Benzo(b)fluoranthene	0.0012	ND,SL (0.02)	NA	0.0004 J	0.0002 J	ND (0.006)	0.0002 J	0.0002 J	0.001	0.0005 J	0.003	0.0007
Benzo(g,h,i)perylene	0.00026	ND,SL (0.02)	NA	0.0003 J	0.0001 J	ND (0.006)	0.0002 J	0.0002 J	0.0005 J	0.0004 J	0.002	0.0003 J
Benzo(k)fluoranthene	0.00055	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND,SL (0.02)	NA	0.001	0.0005 J	0.001 J	0.0005 J	0.0004 J	0.002	0.001	0.007	0.002
Dibenz(a,h)anthracene	0.0006	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	ND,SL (0.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND,SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND,SL (0.02)	NA	0.0002 J	ND (0.0001)	ND (0.006)	ND (0.0005)	ND (0.0005)	0.0003 J	0.0002 J	0.001	0.0002 J
2-Methylnaphthalene	0.026	1.44 SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	ND,SL (0.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.701 SL (0.02)	1.9	1.2	0.89	1.1	0.7	0.54	0.65	0.66	1.4	0.65
4-Nitrophenol	0.06	ND,SL (0.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	0.0319 SL (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	ND,SL (0.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	ND,SL (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND,SL (0.02)	NA	0.003	0.002	0.005 J	0.002	0.002	0.007	0.004	0.023	0.005
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	ND,SL (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND,SL (0.002)	ND (0.00048)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)	ND (0.000085)
Nickel	--	ND,SL (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	ND,SL (0.025)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138	N-138
Field Sample ID	Used Aquifer	MW-14 Dup_09-18-2013	MW-14_11-05-2013	MW-14 Dup_11-05-2013	MW-14_12-20-2013	MW-14 Dup_12-20-2013	MW-14_04-16-2014	MW-14 Dup_04-16-2014	MW-14_06-24-2014	MW-14 Dup_06-24-2014	MW-14_09-16-2014	MW-14 Dup_09-16-2014
Sample Date	(TDS ≤ 2500)	9/18/2013	11/5/2013	11/5/2013	12/20/2013	12/20/2013	4/16/2014	4/16/2014	6/24/2014	6/24/2014	9/16/2014	9/16/2014
Comments	MSCs	Field Duplicate		Field Duplicate		Field Duplicate		Field Duplicate		Field Duplicate		Field Duplicate
Volatile Organic Compounds												
Benzene	0.005	1	0.96	0.89	0.86	0.93	0.76	0.74	0.81	0.78	0.6	0.67
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.1	0.091	0.079	0.078	0.1	0.095	0.087	0.062	0.11	0.036 J	0.038 J
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000099)	ND (0.0000096)	ND (0.0000096)	ND (0.0000097)	ND (0.0000098)	ND (0.0000095)	ND (0.0000096)	ND	ND	ND	ND
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND
Ethyl Benzene	0.7	0.26	0.39	0.35	0.29	0.34	0.3	0.28	0.22	0.31	0.13	0.16
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.009	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.01)	0.004	0.004	0.006	ND	ND	ND
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.32	0.22	0.21	0.19	0.2	0.2	0.18	0.17	0.18	0.13	0.14
1,2,4-Trimethylbenzene	0.53	0.12	0.14	0.12	0.085	0.11	0.11	0.11	0.069	0.13	0.021 J	0.038 J
1,3,5-Trimethylbenzene	0.53	0.23	0.47	0.42	0.35	0.48	0.46	0.38	0.33	0.63	0.13	0.16
Xylenes (total)	10	0.61	0.93	0.86	0.7	0.81	0.77	0.71	0.58	0.82	0.32	0.4
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	ND (0.001)	0.01	0.007	0.001	0.0003 J	0.008	0.015	0.005 J	0.003 J	0.003	0.004
Benzo(a)pyrene	0.0002	ND (0.001)	0.006	0.004 J	0.0007	0.0002 J	0.004 J	0.009	0.004 J	0.002 J	0.002	0.002
Benzo(b)fluoranthene	0.0012	ND (0.001)	0.005 J	0.003 J	0.0009	0.0002 J	0.004 J	0.008	0.003 J	0.002 J	0.002	0.002
Benzo(g,h,i)perylene	0.00026	ND (0.001)	0.003 J	0.002 J	0.0005	ND (0.0001)	0.003 J	0.005 J	ND	ND	0.001	0.001
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.002 J	0.013	0.009	0.002	0.0004 J	0.01	0.018	0.006 J	0.004 J	0.004	0.006
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.001)	0.003 J	0.002 J	0.0005 J	ND (0.0001)	0.001 J	0.004 J	ND	ND	0.0008	0.0009 J
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.55	0.7	0.73	0.72	0.88	0.77	0.71	0.61	0.87	0.33	0.38
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.005 J	0.036	0.024	0.005	0.001	0.03	0.052	0.018	0.011	0.012	0.016
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.000085)	ND (0.000085)	0.00011 J	0.00044 J	0.00026 J	0.000088 J	0.00011 J	ND	ND	ND	ND
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-138	N-138	N-138	N-138	N-138	N-139	N-139	N-139	N-139	N-139	N-139
Field Sample ID	Used Aquifer	MW-14_12-05-2014	MW-14 Dup_12-05-2014	N-138-20160322	N-138-20160829-WG	N-138_20180706	MW-15_09-21-2011	MW-15_02-13-2013	MW-15 DUP_04-04-2013	MW-15_04-04-2013	MW-15_05-14-2013	MW-15_06-26-2013
Sample Date	(TDS ≤ 2500)	12/5/2014	12/5/2014	3/22/2016	8/29/2016	7/6/2018	9/21/2011	2/13/2013	4/4/2013	4/4/2013	5/14/2013	6/26/2013
Comments	MSCs		Field Duplicate						Field Duplicate			
Volatile Organic Compounds												
Benzene	0.005	0.5	0.32	0.236 SL (0.01)	0.385 SL (0.01)	0.353 SL (0.01)	0.3	0.13	0.16	0.16	0.17	0.17
sec-Butylbenzene	9.7	NA	NA	ND,SL (0.01)	ND,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	ND,SL (0.01)	ND,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.044	0.11	0.0208 SL (0.01)	0.0159 SL (0.01)	0.0504 SL (0.01)	0.07	0.058	0.058	0.055	0.055	0.057
Cyclohexane	53	NA	NA	0.0145 SL (0.01)	0.0171 SL (0.01)	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND	ND	ND,SL (0.00001)	ND,SL (0.00001)	ND,SL (0.00001)	ND (0.00005)	0.000033	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.0000096)
1,2-Dichloroethane	0.005	ND	ND	ND,SL (0.01)	ND,SL (0.01)	ND,SL (0.01)	ND (0.001)	ND (0.02)	ND (0.001)	ND (0.001)	ND (0.02)	ND (0.003)
Ethyl Benzene	0.7	0.16	0.37	0.0508 SL (0.01)	0.0636 SL (0.01)	0.109 SL (0.01)	0.38	0.18	0.21	0.2	0.19	0.21
Hexane	5.8	NA	NA	ND,SL (0.01)	0.0691 SL (0.01)	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.005	0.005 J	ND,SL (0.01)	ND,SL (0.01)	ND,SL (0.01)	ND (0.002)	ND (0.02)	0.006	0.006	ND (0.02)	0.006
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.1	0.13	ND,SL (0.05)	0.0818 SL (0.05)	0.126 SL (0.01)	0.18	0.088	0.1	0.1	0.099	0.11
1,2,4-Trimethylbenzene	0.53	0.037	0.15	ND,SL (0.01)	ND,SL (0.01)	0.0465 SL (0.01)	0.034	0.036 J	0.026	0.024	0.037 J	0.035
1,3,5-Trimethylbenzene	0.53	0.19	0.68	0.0659 SL (0.01)	0.0499 SL (0.01)	0.196 SL (0.01)	0.17	0.17	0.12	0.11	0.17	0.15
Xylenes (total)	10	0.36	0.93	0.12 SL (0.03)	0.136 SL (0.03)	0.401 SL (0.03)	0.51	0.41	0.45	0.44	0.4	0.42
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	0.00103 SL (0.001)	0.000677 SL (0.00005)	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	ND,SL (0.001)	0.000166 SL (0.00005)	0.000925 SL (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.003 J	0.004 J	ND,SL (0.001)	0.0000659 SL (0.00005)	0.000295 SL (0.00005)	NA	0.002	0.001	ND (0.005)	0.006	0.006
Benzo(a)pyrene	0.0002	0.002 J	0.002 J	ND,SL (0.001)	ND,SL (0.00005)	0.000149 SL (0.00005)	NA	0.001	0.0004 J	ND (0.005)	0.004	0.003 J
Benzo(b)fluoranthene	0.0012	0.002 J	0.002 J	ND,SL (0.001)	ND,SL (0.00005)	0.000183 SL (0.00005)	NA	0.001	0.0004 J	ND (0.005)	0.003	0.002 J
Benzo(g,h,i)perylene	0.00026	0.001 J	0.001 J	ND,SL (0.001)	ND,SL (0.00005)	0.0000969 SL (0.00005)	NA	0.0008	0.0002 J	ND (0.005)	0.002 J	0.002 J
Benzo(k)fluoranthene	0.00055	NA	NA	ND,SL (0.001)	ND,SL (0.00005)	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.004 J	0.005 J	ND,SL (0.001)	0.0000955 SL (0.00005)	0.000329 SL (0.00005)	NA	0.003	0.001	ND (0.005)	0.008	0.008
Dibenz(a,h)anthracene	0.0006	NA	NA	ND,SL (0.001)	ND,SL (0.00005)	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	ND,SL (0.01)	ND,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	ND,SL (0.001)	0.000339 SL (0.00005)	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	ND,SL (0.001)	0.000339 SL (0.00005)	0.00219 SL (0.0005)	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND	ND	ND,SL (0.001)	ND,SL (0.00005)	NA	NA	0.0006	0.0001 J	ND (0.005)	0.001 J	ND (0.001)
2-Methylnaphthalene	0.026	NA	NA	0.0728 SL (0.001)	0.0632 SL (0.00025)	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	ND,SL (0.01)	ND,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.41	0.92	0.0938 SL (0.001)	0.13 SL (0.005)	0.0167 SL (0.00025)	1.2	0.54	0.44	0.43	0.48	0.39
4-Nitrophenol	0.06	NA	NA	ND,SL (0.01)	ND,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	ND,SL (0.001)	0.000633 SL (0.00005)	0.00384 SL (0.00005)	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	ND,SL (0.01)	ND,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	ND,SL (0.003)	ND,SL (0.003)	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.013	0.015	ND,SL (0.001)	0.000697 SL (0.00005)	0.00142 SL (0.00005)	NA	0.009	0.003	0.002 J	0.024	0.021
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	ND,SL (0.002)	ND,SL (0.002)	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND	ND	ND,SL (0.002)	ND,SL (0.002)	ND,SL (0.002)	ND (0.00048)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)
Nickel	--	NA	NA	ND,SL (0.002)	ND,SL (0.002)	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	ND,SL (0.025)	ND,SL (0.025)	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-139	N-139	N-139	N-139	N-139	N-139	N-139	N-139	N-139	N-139	N-140
Field Sample ID	Used Aquifer	MW-15_08-06-2013	MW-15 DUP_08-06-2013	MW-15_09-18-2013	MW-15_11-05-2013	MW-15_12-20-2013	MW-15_04-16-2014	MW-15_06-24-2014	MW-15_09-16-2014	MW-15_12-05-2014	N-139-20160322	N-140-20160318
Sample Date	(TDS ≤ 2500)	8/6/2013	8/6/2013	9/18/2013	11/5/2013	12/20/2013	4/16/2014	6/24/2014	9/16/2014	12/5/2014	3/22/2016	3/18/2016
Comments	MSCs		Field Duplicate									
Volatile Organic Compounds												
Benzene	0.005	0.21	0.21	0.24	0.3	0.24	0.28	0.18	0.19	0.27	0.133 SL (0.02)	ND (0.001)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.02)	0.00189 (0.001)
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.02)	0.00168 (0.001)
Cumene	3.5	0.13	0.12	0.095	0.19	0.15	0.088	0.044	0.047	0.077	0.0445 SL (0.02)	ND (0.001)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0203 SL (0.02)	ND (0.001)
1,2-Dibromoethane	0.00005	ND (0.0000095)	ND (0.0000097)	ND (0.0000099)	ND (0.0000096)	ND (0.0000097)	ND (0.0000095)	ND	ND	0.000023 J	ND,SL (0.00001)	ND (0.00001)
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.005)	ND	ND	ND	ND,SL (0.02)	ND (0.001)
Ethyl Benzene	0.7	0.38	0.35	0.33	0.5	0.45	0.3	0.21	0.21	0.25	0.128 SL (0.02)	ND (0.001)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.122 SL (0.02)	ND (0.001)
Methyl tert-butyl ether	0.02	0.009 J	0.009 J	0.006 J	ND (0.005)	ND (0.01)	ND (0.005)	ND	ND	0.005 J	ND,SL (0.02)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.13	0.13	0.13	0.17	0.14	0.12	0.081	0.071	0.082	ND,SL (0.1)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	0.062	0.06	0.042	0.099	0.073	0.041	0.019 J	0.018 J	0.045	ND,SL (0.02)	ND (0.001)
1,3,5-Trimethylbenzene	0.53	0.35	0.32	0.25	0.62	0.41	0.34	0.12	0.11	0.3	0.119 SL (0.02)	ND (0.001)
Xylenes (total)	10	0.58	0.55	0.46	0.74	0.67	0.47	0.21	0.25	0.34	0.159 SL (0.06)	ND (0.003)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00238 SL (0.001)	0.00867 (0.001)
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.001)	ND (0.001)
Benzo(a)anthracene	0.0039	0.0007	0.001	0.002 J	0.029	0.003 J	0.012	ND	ND	0.002	ND,SL (0.001)	ND (0.001)
Benzo(a)pyrene	0.0002	0.0004 J	0.0006	ND (0.001)	0.016	0.002 J	0.007	ND	ND	0.001	ND,SL (0.001)	ND (0.001)
Benzo(b)fluoranthene	0.0012	0.0005 J	0.0006	ND (0.001)	0.013	0.002 J	0.007	ND	ND	0.0009	ND,SL (0.001)	ND (0.001)
Benzo(g,h,i)perylene	0.00026	0.0003 J	0.0004 J	ND (0.001)	0.01	ND (0.0001)	0.004 J	ND	ND	0.0005	ND,SL (0.001)	ND (0.001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.001)	ND (0.001)
Chrysene	0.0019	0.001	0.001	0.002 J	0.037	0.004 J	0.015	ND	0.0001 J	0.002	ND,SL (0.001)	ND (0.001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.001)	ND (0.001)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.01)	ND (0.01)
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.001)	ND (0.001)
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0022 SL (0.001)	0.0094 (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	0.0002 J	0.0002 J	ND (0.001)	0.007	ND (0.0001)	0.003 J	ND	ND	0.0004 J	ND,SL (0.001)	ND (0.001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.203 SL (0.001)	ND (0.001)
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.01)	ND (0.01)
Naphthalene	0.1	0.82	0.81	0.73	1.1	1.2	0.96	0.53	0.46	0.72	0.224 SL (0.001)	ND (0.001)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.01)	ND (0.01)
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00379 SL (0.001)	0.00433 (0.001)
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.01)	ND (0.01)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.003)	ND (0.003)
Pyrene	0.13	0.003	0.004	0.007	0.1	0.011	0.046	0.0003 J	0.0005 J	0.007	0.00154 SL (0.001)	ND (0.001)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.002)	ND (0.002)
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.000085)	ND (0.000085)	ND (0.000085)	0.00017 J (0.0005)	ND (0.000085)	ND (0.000085)	0.00000022 J	ND	ND	ND,SL (0.002)	ND (0.002)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.002)	ND (0.002)
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.025)	ND (0.025)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-140	N-141	N-142	N-142	N-142	N-143	N-143	N-143	N-143	N-144	N-144
Field Sample ID	Used Aquifer	N-140-20160318-DUP	N-141	N-142	N-142-20160321	N-142_20180705	N-143-20160318	N-143-20160825-WG	N-143-20161017-WG	N-143-20161017-WG-DUP	N-144	N-144-20160321
Sample Date	(TDS ≤ 2500)	3/18/2016	6/4/2014	6/4/2014	3/21/2016	7/5/2018	3/18/2016	8/25/2016	10/17/2016	10/17/2016	6/4/2014	3/21/2016
Comments	MSCs	Field Duplicate								Field Duplicate		
Volatile Organic Compounds												
Benzene	0.005	ND (0.001)	ND (0.0005)	0.863 (0.005)	0.889 (0.2)	0.124 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.0005)	0.00147 (0.001)
sec-Butylbenzene	9.7	0.00187 (0.001)	NA	NA	0.272 (0.2)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)
tert-Butylbenzene	9.7	0.00164 (0.001)	NA	NA	ND (0.2)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)
Cumene	3.5	ND (0.001)	ND (0.001)	0.0782 (0.001)	0.462 (0.2)	0.0221 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0034 (0.001)	0.00116 (0.001)
Cyclohexane	53	ND (0.001)	NA	NA	0.343 (0.2)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	0.00267 (0.001)
1,2-Dibromoethane	0.00005	ND (0.00001)	ND (0.00002)	ND (0.00002)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00002)	ND (0.00001)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.2)	0.00191 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	0.163 (0.001)	0.288 (0.2)	0.0127 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0013 (0.001)	0.00102 (0.001)
Hexane	5.8	ND (0.001)	NA	NA	ND (0.2)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	0.0022 (0.001)	ND (0.2)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.005)	ND (0.001)	0.2 (0.01)	ND (1)	0.0403 (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	ND (0.001)	ND (0.002)	0.107 (0.002)	0.673 (0.2)	0.017 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.00063 J (0.002)	ND (0.001)
1,3,5-Trimethylbenzene	0.53	ND (0.001)	ND (0.002)	0.302 (0.02)	1.88 (0.2)	0.0781 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0035 (0.002)	0.00112 (0.001)
Xylenes (total)	10	ND (0.003)	ND (0.001)	0.475 (0.01)	1.93 (0.6)	0.06 (0.003)	ND (0.003)	ND (0.003)	ND (0.003)	ND (0.003)	0.0014 (0.001)	ND (0.003)
Semivolatile Organic Compounds												
Acenaphthene	3.8	0.00773 (0.001)	NA	NA	0.0262 (0.001)	NA	ND (0.001)	ND (0.00005)	0.0000511 (0.00005)	0.0000945 (0.00005)	NA	ND (0.001)
Anthracene	0.066	ND (0.001)	ND (0.0001)	0.000393 (0.0001)	0.00977 (0.001)	0.00114 (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Benzo(a)anthracene	0.0039	ND (0.001)	ND (0.0001)	0.000273 (0.0001)	0.00366 (0.001)	ND (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Benzo(a)pyrene	0.0002	ND (0.001)	ND (0.0001)	0.000158 (0.0001)	0.00219 (0.001)	ND (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Benzo(b)fluoranthene	0.0012	ND (0.001)	ND (0.0001)	ND (0.0001)	0.00185 (0.001)	ND (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Benzo(g,h,i)perylene	0.00026	ND (0.001)	ND (0.0001)	ND (0.0001)	0.00171 (0.001)	ND (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Benzo(k)fluoranthene	0.00055	ND (0.001)	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	NA	ND (0.001)
Chrysene	0.0019	ND (0.001)	ND (0.0001)	0.000306 (0.0001)	0.00384 (0.001)	ND (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Dibenz(a,h)anthracene	0.0006	ND (0.001)	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	NA	ND (0.001)
2,4-Dimethylphenol	1.9	ND (0.01)	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	NA	ND (0.01)
Fluoranthene	0.26	ND (0.001)	NA	NA	0.0073 (0.001)	NA	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	NA	ND (0.001)
Fluorene	1.9	0.00768 (0.001)	ND (0.0001)	0.00137 (0.0001)	0.0295 (0.001)	0.00135 (0.000525)	ND (0.001)	ND (0.00005)	0.0000991 (0.00005)	0.000421 (0.00005)	ND (0.0001)	ND (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.001)	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	NA	ND (0.001)
2-Methylnaphthalene	0.026	ND (0.001)	NA	NA	0.691 (0.005)	NA	ND (0.001)	ND (0.00025)	ND (0.00025)	ND (0.00025)	NA	ND (0.001)
3&4-Methylphenol	0.49	ND (0.01)	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	NA	ND (0.01)
Naphthalene	0.1	ND (0.001)	ND (0.0001)	0.184 (0.005)	0.549 (0.005)	0.0206 (0.00263)	ND (0.001)	ND (0.00025)	ND (0.00025)	ND (0.00025)	ND (0.0001)	ND (0.001)
4-Nitrophenol	0.06	ND (0.01)	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	NA	ND (0.01)
Phenanthrene	1.1	0.00379 (0.001)	ND (0.0001)	0.00141 (0.0001)	0.0584 (0.001)	0.00181 (0.000525)	ND (0.001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Phenol	2	ND (0.01)	NA	NA	ND (0.01)	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	NA	ND (0.01)
bis(2-Ethylhexyl)phthalate	0.006	ND (0.003)	NA	NA	0.119 (0.003)	NA	ND (0.003)	0.00301 B (0.003)	ND (0.003)	ND (0.003)	NA	ND (0.003)
Pyrene	0.13	ND (0.001)	ND (0.0001)	0.00136 (0.0001)	0.0201 (0.001)	0.00146 (0.000525)	ND (0.001)	0.000148 (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0001)	ND (0.001)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	ND (0.002)	NA	NA	ND (0.002)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	ND (0.002)
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.002)	0.0022 J (0.003)	0.003 (0.003)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0024 J (0.003)	ND (0.002)
Nickel	--	ND (0.002)	NA	NA	ND (0.002)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	ND (0.002)
Zinc	--	ND (0.025)	NA	NA	ND (0.025)	NA	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.025)	NA	ND (0.025)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-144	N-145	N-146	N-153	N-153	N-160	N-161	N-161	N-161	N-161	N-161	N-162
Field Sample ID	Used Aquifer	N-144-20160321-DUP	N-145-20160321	N-146-20160322	N-153-20160824-WG	N-153-20161019-WG	N-160-20200218-WG	N161_20210415_410-36329-1	N-161_SL_20220422_43617	N-161_SL_20230511	N-161_SL_20240508	N-162-20200218-WG
Sample Date	(TDS ≤ 2500)	3/21/2016	3/21/2016	3/22/2016	8/24/2016	10/19/2016	2/18/2020	4/15/2021	4/22/2022	5/11/2023	5/8/2024	2/18/2020
Comments	MSCs	Field Duplicate										
Volatile Organic Compounds												
Benzene	0.005	0.00175 (0.001)	0.127 (0.01)	ND,SL (0.001)	ND,MI (0.025)	ND (0.01)	0.0538 (0.001)	0.64 (0.005)	0.538 SL (0.0025)	0.403 SL (0.002)	0.321 SL (0.0025)	ND (0.001)
sec-Butylbenzene	9.7	ND (0.001)	ND (0.01)	ND,SL (0.001)	0.223 J+ (0.025)	0.0771 (0.01)	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	ND (0.001)	ND (0.01)	ND,SL (0.001)	0.0927 J+ (0.025)	0.0376 (0.01)	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.00128 (0.001)	0.026 (0.01)	ND,SL (0.001)	0.8 (0.025)	0.501 (0.01)	0.00056 J (0.001)	0.047 (0.025)	0.0299 SL (0.002)	0.0343 SL (0.001)	0.0329 SL (0.001)	ND (0.001)
Cyclohexane	53	0.00255 (0.001)	0.0397 (0.01)	ND,SL (0.001)	0.0278 J+ (0.025)	0.0155 (0.01)	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00001)	ND (0.00001)	ND,SL (0.00001)	ND (0.00001)	ND (0.00001)	0.000032 J (0.000041)	0.000044 (0.000029)	ND,SL (0.00002)	ND,SL (0.000021)	ND,SL (0.00002)	ND (0.00004)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.01)	ND,SL (0.001)	ND,MI (0.025)	ND (0.01)	ND (0.001)	ND (0.005)	ND,SL (0.002)	ND,SL (0.001)	ND,SL (0.001)	ND (0.001)
Ethyl Benzene	0.7	0.00131 (0.001)	0.0101 (0.01)	ND,SL (0.001)	ND,MI (0.025)	ND (0.01)	0.0044 (0.001)	0.36 (0.005)	0.159 SL (0.002)	0.122 SL (0.001)	0.133 SL (0.001)	ND (0.001)
Hexane	5.8	ND (0.001)	0.047 (0.01)	ND,SL (0.001)	0.0429 (0.025)	0.0198 (0.01)	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.01)	ND,SL (0.001)	ND,MI (0.025)	ND (0.01)	ND (0.001)	ND (0.005)	ND,SL (0.002)	0.00067 J,SL (0.001)	0.0008 J,SL (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	ND (0.25)	ND,SL (0.02)	0.0269 SL (0.01)	0.025 SL (0.01)	NA
Toluene	1	ND (0.005)	ND (0.05)	ND,SL (0.005)	ND,MI (0.125)	ND (0.05)	0.0031 (0.001)	0.24 (0.005)	0.178 SL (0.002)	0.195 SL (0.001)	0.173 SL (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.001)	0.0477 (0.01)	ND,SL (0.001)	ND,MI (0.025)	ND (0.01)	ND (0.001)	0.13 (0.025)	0.052 SL (0.004)	0.0808 SL (0.002)	0.0913 SL (0.002)	ND (0.001)
1,3,5-Trimethylbenzene	0.53	0.00115 (0.001)	0.0375 (0.01)	ND,SL (0.001)	ND,MI (0.025)	ND (0.01)	ND (0.001)	0.3 (0.025)	0.139 SL (0.004)	0.198 SL (0.008)	0.226 SL (0.01)	ND (0.001)
Xylenes (total)	10	0.00398 (0.003)	0.115 (0.03)	ND,SL (0.003)	ND,MI (0.075)	ND (0.03)	0.0036 (0.003)	0.77 (0.03)	0.375 SL (0.002)	0.428 SL (0.001)	0.412 SL (0.001)	ND (0.003)
Semivolatile Organic Compounds												
Acenaphthene	3.8	ND (0.001)	0.00428 (0.001)	0.00272 SL (0.001)	0.0111 (0.00005)	0.02 (0.00025)	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.001)	0.0012 (0.001)	ND,SL (0.001)	0.00697 (0.00005)	0.0188 (0.00025)	NA	ND (0.00052)	ND,SL (0.000069)	ND,SL (0.000083)	0.0354 SL (0.0008)	NA
Benzo(a)anthracene	0.0039	ND (0.001)	ND (0.001)	0.00162 SL (0.001)	0.00172 (0.00005)	0.00335 (0.00025)	NA	ND (0.00052)	ND,SL (0.000034)	0.0000612 SL (0.000042)	0.0593 SL (0.004)	NA
Benzo(a)pyrene	0.0002	ND (0.001)	ND (0.001)	ND,SL (0.001)	0.000973 (0.00005)	0.00192 (0.00025)	NA	ND (0.00052)	ND,SL (0.000034)	0.0000324 J,SL (0.000042)	0.0184 SL (0.0004)	NA
Benzo(b)fluoranthene	0.0012	ND (0.001)	ND (0.001)	0.00162 SL (0.001)	0.000636 (0.00005)	0.0014 (0.00025)	NA	ND (0.00052)	ND,SL (0.000034)	0.0000424 SL (0.000042)	0.0225 SL (0.0004)	NA
Benzo(g,h,i)perylene	0.00026	ND (0.001)	ND (0.001)	ND,SL (0.001)	0.000426 J+ (0.00005)	0.0011 (0.00025)	NA	ND (0.00052)	ND,SL (0.000069)	ND,SL (0.000083)	0.0125 SL (0.0008)	NA
Benzo(k)fluoranthene	0.00055	ND (0.001)	ND (0.001)	ND,SL (0.001)	0.000152 (0.00005)	0.000271 (0.00025)	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.001)	ND (0.001)	0.00276 SL (0.001)	0.00211 (0.00005)	0.00299 (0.00025)	NA	ND (0.00052)	ND,SL (0.000069)	0.000058 J,SL (0.000083)	0.0621 SL (0.008)	NA
Dibenz(a,h)anthracene	0.0006	ND (0.001)	ND (0.001)	ND,SL (0.001)	0.000227 J (0.00005)	ND (0.00025)	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	ND (0.01)	ND (0.01)	ND,SL (0.01)	ND (0.01)	ND (0.05)	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	ND (0.001)	0.00196 (0.001)	0.00314 SL (0.001)	0.00213 J (0.00005)	0.00532 (0.00025)	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.001)	0.00417 (0.001)	0.00559 SL (0.001)	0.0165 (0.00005)	0.0287 (0.00025)	NA	0.00054 (0.00052)	0.000113 SL (0.000069)	0.000134 B,SL (0.000083)	0.166 SL (0.008)	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.001)	ND (0.001)	ND,SL (0.001)	0.000235 J (0.00005)	0.00055 (0.00025)	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	ND (0.001)	0.106 (0.001)	ND,SL (0.001)	0.00591 (0.00025)	0.015 (0.00625)	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	ND (0.01)	0.0211 (0.01)	ND,SL (0.01)	ND (0.01)	ND (0.05)	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.001)	0.0168 (0.001)	ND,SL (0.001)	0.00818 (0.00025)	0.0202 (0.00625)	NA	0.31 (0.0026)	0.0313 SL (0.00069)	ND,SL (0.000083)	6.58 SL (0.4)	NA
4-Nitrophenol	0.06	ND (0.01)	ND (0.01)	ND,SL (0.01)	0.0444 (0.01)	ND (0.05)	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	ND (0.001)	0.00564 (0.001)	0.011 SL (0.001)	0.0341 (0.00005)	0.0596 (0.00025)	NA	0.0003 J (0.00052)	ND,SL (0.000069)	ND,SL (0.000083)	0.288 SL (0.008)	NA
Phenol	2	ND (0.01)	ND (0.01)	ND,SL (0.01)	ND (0.01)	ND (0.05)	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	ND (0.003)	0.00374 (0.003)	ND,SL (0.003)	ND (0.003)	ND (0.015)	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.001)	0.00312 (0.001)	0.00575 SL (0.001)	0.0113 (0.00005)	0.0236 (0.00025)	NA	ND (0.00052)	0.0000348 J,SL (0.000069)	0.000122 SL (0.000083)	0.127 SL (0.008)	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	64 (0.5)	84.5 SL (5)	65.1 SL (5)	48.2 SL (5)	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	ND (0.002)	ND (0.002)	ND,SL (0.002)	ND (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	13 (0.2)	10.5 SL (0.1)	8.88 SL (0.1)	6.23 SL (0.1)	NA
Lead	--	ND (0.002)	ND (0.002)	ND,SL (0.002)	ND (0.002)	ND (0.002)	NA	ND (0.00052)	ND,SL (0.001)	ND,SL (0.001)	0.0012 SL (0.001)	NA
Nickel	--	ND (0.002)	ND (0.002)	0.00428 SL (0.002)	0.00283 B (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA
Zinc	--	ND (0.025)	ND (0.025)	ND,SL (0.025)	ND (0.025)	ND (0.025)	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-163	N-163	N-163	N-163	N-163	N-163	N-163	N-165	N-165	N-165	N-165
Field Sample ID	Used Aquifer	N-163-20200221-WG	N-163_20200910	N-163_20201215	N-163_20210415_410-36329-1	N-163	N-163_20220414_43215b	N-163_20230512	N-165_20220217	N-165_20220418	N-165_20230512	N-165
Sample Date	(TDS ≤ 2500)	2/21/2020	9/10/2020	12/15/2020	4/15/2021	7/19/2021	4/14/2022	5/12/2023	2/17/2022	4/18/2022	5/12/2023	3/20/2024
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.398 (0.05)	0.34 (0.005)	0.78 (0.005)	0.077 (0.001)	NA	0.149 (0.0005)	0.0514 (0.0005)	0.208 (0.0025)	0.0672 (0.0005)	2.73 (0.01)	1.81 (0.01)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.0635 (0.001)	0.056 (0.025)	0.07 (0.025)	0.027 (0.005)	NA	0.0338 (0.001)	0.0188 (0.001)	0.152 (0.001)	0.071 (0.001)	0.103 (0.02)	0.128 (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00004)	ND (0.000029)	ND (0.000028)	ND (0.000029)	NA	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.02)	ND (0.005)
Ethyl Benzene	0.7	0.0574 (0.001)	0.049 (0.005)	0.25 (0.005)	0.0082 (0.001)	NA	0.002 (0.001)	0.00073 J (0.001)	0.306 (0.005)	0.0119 (0.001)	0.0981 (0.02)	0.118 (0.005)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.02)	ND (0.005)
tert Butyl alcohol	--	ND (0.005)	ND (0.25)	ND (0.25)	ND (0.05)	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.2)	NA
Toluene	1	0.0049 (0.001)	ND (0.005)	0.01 (0.005)	0.002 (0.001)	NA	0.0026 (0.001)	0.0011 (0.001)	0.0054 (0.001)	0.0012 (0.001)	0.0142 J (0.02)	0.0121 (0.005)
1,2,4-Trimethylbenzene	0.53	0.0099 (0.001)	0.0055 J (0.025)	0.015 J (0.025)	0.0017 J (0.005)	NA	ND (0.002)	ND (0.002)	0.239 (0.01)	0.135 (0.002)	0.11 (0.04)	0.125 (0.01)
1,3,5-Trimethylbenzene	0.53	0.0214 (0.001)	0.011 J (0.025)	0.033 (0.025)	0.0043 J (0.005)	NA	0.0014 J (0.002)	ND (0.002)	0.0849 (0.002)	0.0588 (0.002)	0.0557 (0.04)	0.0648 (0.01)
Xylenes (total)	10	0.0205 (0.003)	0.02 J (0.03)	0.076 (0.03)	0.0063 (0.006)	NA	0.0057 (0.001)	0.0026 (0.001)	0.226 (0.001)	0.0892 (0.001)	0.111 (0.02)	0.112 (0.005)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	0.00042 J (0.00051)	0.00042 J,B (0.0005)	0.00018 J (0.00051)	NA	0.000176 (0.00008)	0.000219 (0.00008)	0.000657 B (0.000087)	0.000691 (0.00008)	0.000404 (0.000083)	0.000542 (0.00008)
Benzo(a)anthracene	0.0039	NA	ND (0.00051)	ND (0.0005)	ND (0.00051)	NA	0.0000309 J (0.00004)	0.0000255 BJ (0.00004)	0.000138 B (0.000043)	0.000149 (0.00004)	0.0000409 BJ (0.000042)	0.000165 (0.00004)
Benzo(a)pyrene	0.0002	NA	ND (0.00051)	ND (0.0005)	ND (0.00051)	NA	ND (0.00004)	ND (0.00004)	0.0000809 B (0.000043)	0.0000673 (0.00004)	ND (0.000042)	0.0000746 (0.00004)
Benzo(b)fluoranthene	0.0012	NA	ND (0.00051)	ND (0.0005)	ND (0.00051)	NA	ND (0.00004)	ND (0.00004)	0.000101 B (0.000043)	0.0000739 (0.00004)	0.0000339 BJ (0.000042)	0.0000829 (0.00004)
Benzo(g,h,i)perylene	0.00026	NA	ND (0.00051)	ND (0.0005)	ND (0.00051)	NA	ND (0.00008)	0.0000751 BJ (0.00008)	0.0000663 J,B (0.000087)	0.0000532 J (0.00008)	ND (0.000083)	0.0000971 (0.00008)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	ND (0.00051)	ND (0.0005)	ND (0.00051)	NA	ND (0.00008)	ND (0.00008)	0.000141 (0.000087)	0.00012 (0.00008)	ND (0.000083)	0.000113 (0.00008)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	0.0018 (0.00051)	0.0023 (0.0005)	0.00086 (0.00051)	NA	0.000588 (0.00008)	0.000558 (0.00008)	0.00249 B (0.000087)	0.00179 (0.00008)	0.00135 (0.000083)	0.00187 (0.00008)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	0.01 (0.00051)	0.065 (0.0005)	0.0025 (0.00051)	NA	0.000202 (0.00008)	0.000193 (0.00008)	ND (0.000087)	0.00196 (0.00008)	0.0341 (0.00083)	0.03 (0.0016)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	0.0019 (0.00051)	0.002 B (0.0005)	0.00062 (0.00051)	NA	0.000524 (0.00008)	0.000737 B (0.00008)	0.00295 B (0.000087)	0.00288 (0.00008)	0.00158 B (0.000083)	0.00259 (0.00008)
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	0.00027 J (0.00051)	0.00026 J,B (0.0005)	0.00021 J (0.00051)	NA	0.000179 (0.00008)	0.000182 (0.00008)	0.000611 (0.000087)	0.000711 (0.00008)	0.000203 (0.000083)	0.000527 (0.00008)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	0.0000024 (0.0000017)	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	0.0000031 (0.0000017)	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	0.000014 (0.0000017)	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	0.000012 (0.0000017)	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	0.0000062 (0.0000017)	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	56 (0.5)	NA	NA	NA	106 (5)	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	32 (0.2)	NA	NA	NA	7.24 (0.1)	NA	NA	NA
Lead	--	NA	ND (0.00052)	ND (0.00052)	ND (0.00052)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	N-166	N-166	N-166	N-169	N-169	N-169	N-169	N-169	OUTFALL A	OUTFALL A	OUTFALL B
Field Sample ID	Used Aquifer	N-166_20220223	N-166_20220418_43429	N-166_20230512	N-169_20220217	N-169_20220421_43617	DUP-8_20220421	N-169_20230515	N-169	OUTFALL A_410-51936-1	OUTFALL A_410-64617-1	OUTFALL B_410-64617-1
Sample Date	(TDS ≤ 2500)	2/23/2022	4/18/2022	5/12/2023	2/17/2022	4/21/2022	4/21/2022	5/15/2023	3/20/2024	8/19/2021	11/23/2021	11/23/2021
Comments	MSCs						Field Duplicate					
Volatile Organic Compounds												
Benzene	0.005	0.913 (0.005)	0.899 (0.0025)	0.582 (0.002)	0.0468 (0.0005)	0.0424 (0.0005)	0.0405 (0.0005)	0.0462 (0.0005)	0.0167 (0.0005)	ND (0.001)	ND (0.001)	ND (0.005)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.208 (0.0025)	0.142 (0.005)	0.101 (0.004)	0.138 (0.001)	0.104 (0.001)	0.1 (0.001)	0.115 (0.001)	0.105 (0.001)	NA	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000021)	ND (0.000021)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.000021)	NA	NA	NA
1,2-Dichloroethane	0.005	ND (0.0025)	ND (0.005)	ND (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA
Ethyl Benzene	0.7	0.0084 (0.0025)	0.0052 (0.005)	0.0029 J (0.004)	0.0476 (0.001)	0.0543 (0.001)	0.0515 (0.001)	0.0386 (0.001)	0.0187 (0.001)	NA	NA	NA
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.0025)	ND (0.005)	ND (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA
tert Butyl alcohol	--	ND (0.025)	ND (0.05)	ND (0.04)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	NA	NA	NA	NA
Toluene	1	0.0284 (0.0025)	0.0333 (0.005)	0.0257 (0.004)	0.0239 (0.001)	0.0234 (0.001)	0.0229 (0.001)	0.0157 (0.001)	0.0113 (0.001)	ND (0.001)	ND (0.001)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	0.0057 (0.005)	ND (0.01)	ND (0.008)	0.0016 J (0.002)	0.0016 J (0.002)	0.0015 J (0.002)	0.0022 (0.002)	0.0018 J (0.002)	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	0.0111 (0.005)	ND (0.01)	ND (0.008)	0.0053 (0.002)	0.003 (0.002)	0.0027 (0.002)	0.0074 (0.002)	0.0059 (0.002)	NA	NA	NA
Xylenes (total)	10	0.0251 (0.0025)	0.0254 (0.005)	0.0186 (0.004)	0.0455 (0.001)	0.0477 (0.001)	0.0464 (0.001)	0.0379 (0.001)	0.0252 (0.001)	NA	NA	NA
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0026 (0.000074)	0.00114 (0.00008)	0.00077 (0.00008)	0.000393 B (0.000083)	0.000106 (0.000069)	0.000149 (0.000069)	0.0158 (0.00082)	0.000479 (0.00008)	NA	NA	NA
Benzo(a)anthracene	0.0039	0.00144 (0.000037)	0.000357 (0.00004)	0.000133 B (0.00004)	0.0000634 B (0.000042)	0.0000213 J (0.000034)	0.0000229 J (0.000034)	0.00387 (0.000041)	0.000166 (0.00004)	NA	NA	NA
Benzo(a)pyrene	0.0002	0.000791 (0.000037)	0.000182 (0.00004)	0.0000718 B (0.00004)	0.0000402 J,B (0.000042)	ND (0.000034)	ND (0.000034)	0.00258 (0.000041)	0.0000846 (0.00004)	NA	NA	NA
Benzo(b)fluoranthene	0.0012	0.00105 (0.000037)	0.000218 (0.00004)	0.000106 B (0.00004)	0.0000476 B (0.000042)	ND (0.000034)	ND (0.000034)	0.00263 (0.000041)	0.0000909 (0.00004)	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	0.000566 (0.000074)	0.000124 (0.00008)	0.0000533 BJ (0.00008)	0.0000445 J,B (0.000083)	ND (0.000069)	ND (0.000069)	0.00187 (0.000082)	0.0000909 (0.00008)	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.00127 (0.000074)	0.000254 (0.00008)	0.000125 B (0.00008)	0.0000618 J (0.000083)	ND (0.000069)	ND (0.000069)	0.00402 (0.00082)	0.000127 (0.00008)	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00646 (0.00037)	0.00237 (0.00008)	0.00217 (0.00008)	0.0015 B (0.000083)	0.00049 (0.000069)	0.000684 (0.000069)	0.0295 (0.00082)	0.00112 (0.00008)	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.0137 E (0.000074)	0.00792 (0.0008)	0.00964 (0.0008)	0.0126 E (0.000083)	0.00316 (0.000069)	0.0115 (0.00069)	0.162 (0.0082)	0.00532 (0.0004)	NA	NA	NA
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	0.0136 (0.00037)	0.00448 (0.0008)	0.00294 B (0.00008)	0.00172 B (0.000083)	0.000132 (0.000069)	0.000531 (0.000069)	0.0581 B (0.0082)	0.00156 (0.00008)	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.00369 (0.000074)	0.00103 (0.00008)	0.000609 (0.00008)	0.000243 (0.000083)	0.0000908 (0.000069)	0.0000899 (0.000069)	0.0183 (0.00082)	0.000585 (0.00008)	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	76.9 (5)	NA	NA	50.5 (5)	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	0.015 (0.015)	ND (0.015)	0.02 (0.015)
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	76.8 (0.1)	NA	NA	34.7 (0.1)	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.0019 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1
Field Sample ID	Used Aquifer	MW-1_05-26-2011	MW-1_06-21-2011	MW-1_09-20-2011	MW-1_08-16-2012	MW-1_11-15-2012	MW-1_02-13-2013	MW-1_04-04-2013	MW-1_05-13-2013	MW-1_06-27-2013	MW-1_08-06-2013	MW-1_09-19-2013
Sample Date	(TDS ≤ 2500)	5/26/2011	6/21/2011	9/20/2011	8/16/2012	11/15/2012	2/13/2013	4/4/2013	5/13/2013	6/27/2013	8/6/2013	9/19/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	0.0008 J	ND (0.001)	ND (0.001)	0.0006 J	ND (0.0005)	ND (0.0005)	ND (0.0005)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	ND (0.002)	ND (0.002)	ND (0.002)	0.002	0.003	0.001 J	0.0007 J	ND (0.002)	ND (0.0005)	ND (0.0005)	0.0007 J
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000097)	ND (0.0000095)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.0000099)	ND (0.0000096)	ND (0.0000097)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Ethyl Benzene	0.7	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	0.0007 J	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	0.0006 J	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.0005)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	0.002 J	ND (0.002)	0.0007 J	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Xylenes (total)	10	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.0005)	0.002	0.0007 J	0.0008 J	0.001	ND (0.0005)	ND (0.0005)	ND (0.0005)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	ND (0.008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.008)	ND (0.008)	ND (0.008)	0.001	0.003 J	ND (0.004)	ND (0.004)	ND (0.004)	ND (0.001)	ND (0.001)	ND (0.001)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.00048)	ND (0.00048)	ND (0.00048)	ND (0.00000034)	ND (0.000047)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

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NA - Not Analyzed
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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-1	V-MW-2	V-MW-2	V-MW-2	V-MW-2
Field Sample ID	Used Aquifer	MW-1_11-06-2013	MW-1_12-20-2013	MW-1_04-17-2014	MW-1_06-25-2014	MW-1_09-15-2014	MW-1_12-04-2014	V-MW-1-20160315	MW-2_05-26-2011	MW-2_09-21-2011	MW-2_02-13-2013	MW-2_04-04-2013
Sample Date	(TDS ≤ 2500)	11/6/2013	12/20/2013	4/17/2014	6/25/2014	9/15/2014	12/4/2014	3/15/2016	5/26/2011	9/21/2011	2/13/2013	4/4/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	ND (0.0005)	0.0008 J	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.001)	1.3	0.94	1	0.97
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Cumene	3.5	0.003	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.001)	0.055	0.056	0.11	0.12
Cyclohexane	53	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000097)	ND (0.0000097)	ND (0.0000096)	ND (0.0000096)	ND	ND	ND (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.000029)	ND (0.000029)
1,2-Dichloroethane	0.005	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.001)	ND (0.02)	ND (0.002)	ND (0.01)	ND (0.005)
Ethyl Benzene	0.7	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.001)	0.27	0.19	0.28	0.31
Hexane	5.8	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.001)	ND (0.04)	0.032	0.019	0.018
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.005)	0.21	0.17	0.2	0.18
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND (0.001)	ND (0.04)	0.016	0.023	0.02
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	0.0005 J	ND (0.001)	0.15	0.14	0.23	0.2
Xylenes (total)	10	ND (0.0005)	0.001	ND (0.0005)	ND (0.0005)	ND	0.0005 J	ND (0.003)	0.5	0.44	0.61	0.6
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.01	0.001 J
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.005 J	ND (0.005)
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.005 J	ND (0.005)
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.004 J	ND (0.005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.01	0.001 J
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.004 J	ND (0.005)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.16)	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
Naphthalene	0.1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND	0.001 J	ND (0.001)	0.91	0.66	0.93	0.8
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	ND (0.003)	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	0.04	0.004 J
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	0.003 (0.002)	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.00013 J	0.00012 J	ND (0.000085)	ND (0.000085)	ND	ND	ND (0.002)	ND (0.00048)	ND (0.00048)	0.031	ND (0.001)
Nickel	--	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	ND (0.025)	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2
Field Sample ID	Used Aquifer	MW-2_05-14-2013	MW-2_06-28-2013	MW-2_08-07-2013	MW-2_09-18-2013	MW-2_11-05-2013	MW-2_12-20-2013	MW-2_04-17-2014	MW-2_06-24-2014	MW-2_09-15-2014	MW-2_12-04-2014	V-MW-2-20160317
Sample Date	(TDS ≤ 2500)	5/14/2013	6/28/2013	8/7/2013	9/18/2013	11/5/2013	12/20/2013	4/17/2014	6/24/2014	9/15/2014	12/4/2014	3/17/2016
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.99	0.96	0.92	0.98	0.97	0.98	0.99	0.86	0.63	0.96	0.0726 (0.001)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0022 (0.001)
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00159 (0.001)
Cumene	3.5	0.14	0.079	0.097	0.17	0.092	0.18	0.15	0.073	0.18	0.067	0.0146 (0.001)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0135 (0.001)
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.00001)	ND (0.0000094)	ND (0.0000098)	ND (0.0000094)	ND (0.0000098)	ND (0.0000096)	ND	ND	ND	ND (0.00001)
1,2-Dichloroethane	0.005	ND (0.01)	ND (0.003)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.005)	ND	ND	ND	ND (0.001)
Ethyl Benzene	0.7	0.31	0.22	0.23	0.3	0.21	0.32	0.29	0.16	0.24	0.17	0.0554 (0.001)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0716 (0.001)
Methyl tert-butyl ether	0.02	0.019	0.015	0.015 J	0.02	0.021	0.027	0.027	0.032	0.023	0.016	0.00357 (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.21	0.18	0.16	0.18	0.16	0.18	0.19	0.16	0.14	0.19	0.0978 (0.005)
1,2,4-Trimethylbenzene	0.53	0.022	0.011	0.011 J	0.018 J	0.01 J	0.02 J	0.018 J	0.01 J	0.015 J	0.009 J	0.00146 (0.001)
1,3,5-Trimethylbenzene	0.53	0.24	0.11	0.13	0.21	0.12	0.21	0.2	0.11	0.17	0.097	0.0195 (0.001)
Xylenes (total)	10	0.62	0.44	0.45	0.61	0.41	0.64	0.59	0.38	0.45	0.42	0.118 (0.003)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(a)anthracene	0.0039	0.023	0.002 J	0.009 J	0.007	0.006	0.013	0.013	ND	0.006	0.001	ND (0.001)
Benzo(a)pyrene	0.0002	0.007	0.001 J	0.006 J	0.003 J	0.004 J	0.007	0.007	ND	0.003	0.0004 J	ND (0.001)
Benzo(b)fluoranthene	0.0012	0.011	0.001 J	0.006 J	0.004 J	0.003 J	0.007	0.007	ND	0.003	0.0004 J	ND (0.001)
Benzo(g,h,i)perylene	0.00026	0.002 J	ND (0.001)	0.004 J	0.002 J	0.002 J	0.003 J	0.004 J	ND	0.002	0.0002 J	ND (0.001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Chrysene	0.0019	0.019	0.003 J	0.009 J	0.009	0.008	0.017	0.015	ND	0.007	0.0009	ND (0.001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	0.002 J	ND (0.001)	0.003 J	0.002 J	0.002 J	0.003 J	0.002 J	ND	0.001	0.0002 J	ND (0.001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0242 (0.001)
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0789 (0.01)
Naphthalene	0.1	0.79	0.59	0.68	0.96	0.54	1	0.9	0.62	0.59	0.57	0.106 (0.001)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,OE (0.01)
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0119 (0.01)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.003)
Pyrene	0.13	0.12	0.009	0.037	0.028	0.023	0.055	0.048	0.002 J	0.024	0.003	ND (0.001)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00205 (0.002)
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)	0.0002 J	0.000089 J	0.000089 J	ND	ND	ND	ND (0.002)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-2	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3
Field Sample ID	Used Aquifer	V-MW-2_20190709	V-MW-2_20191113	DUP-6_20191113	MW-2_20210414_410-36129-1	V-MW-2_20220408	V-MW-2_20240422	MW-3_05-26-2011	MW-3_06-21-2011	MW-3_09-20-2011	MW-3_08-16-2012	MW-3_11-15-2012
Sample Date	(TDS ≤ 2500)	7/9/2019	11/13/2019	11/13/2019	4/14/2021	4/8/2022	4/22/2024	5/26/2011	6/21/2011	9/20/2011	8/16/2012	11/15/2012
Comments	MSCs			Field Duplicate								
Volatile Organic Compounds												
Benzene	0.005	0.21 (0.005)	0.24 (0.005)	0.24 (0.005)	0.036 (0.001)	0.0089 (0.0005)	0.0587 (0.0005)	0.025	0.072	0.038	0.044	0.024
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.044 (0.005)	0.035 (0.025)	0.035 (0.025)	0.016 (0.005)	0.0102 (0.001)	0.0182 (0.001)	0.04	0.15	0.05	0.15	0.037
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000028)	ND (0.000028)	0.000027 J (0.000029)	ND (0.00002)	ND (0.00002)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000096)	ND (0.0000096)
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.025)	ND (0.025)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.02)	ND (0.005)	ND (0.001)	0.017	ND (0.003)
Ethyl Benzene	0.7	0.076 (0.001)	0.069 (0.005)	0.069 (0.005)	0.012 (0.001)	0.0094 (0.001)	0.0273 (0.001)	0.18	0.36	0.22	0.24	0.14
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.003 (0.001)	ND (0.005)	ND (0.005)	0.0013 (0.001)	ND (0.001)	0.003 (0.001)	ND (0.04)	ND (0.01)	0.0064	0.016	ND (0.003)
tert Butyl alcohol	--	NA	NA	NA	ND (0.05)	ND (0.01)	0.0099 J (0.01)	NA	NA	NA	NA	NA
Toluene	1	0.094 (0.001)	0.092 (0.005)	0.091 (0.005)	0.022 (0.001)	0.0081 (0.001)	0.0488 (0.001)	0.17	0.27	0.23	0.14	0.14
1,2,4-Trimethylbenzene	0.53	0.003 J (0.005)	0.003 J (0.025)	0.003 J (0.025)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.04)	ND (0.01)	0.0057	0.015	0.005 J
1,3,5-Trimethylbenzene	0.53	0.033 (0.005)	0.027 (0.025)	0.028 (0.025)	0.0071 (0.005)	0.0084 (0.002)	0.0102 (0.002)	ND (0.04)	0.08	0.024	0.093	0.02
Xylenes (total)	10	0.22 (0.005)	0.2 (0.015)	0.2 (0.015)	0.044 (0.006)	0.0404 (0.001)	0.101 (0.001)	0.32	0.6	0.37	0.44	0.28
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0004 J (0.0005)	0.0003 J (0.0005)	0.0002 J (0.0005)	0.00036 J (0.00051)	0.000102 (0.000071)	0.000071 J (0.00008)	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.0007 (0.0005)	0.0003 J (0.0005)	0.0003 J (0.0005)	0.00043 J (0.00051)	0.000165 (0.000036)	0.0000255 J (0.00004)	NA	NA	NA	0.0005	ND (0.0001)
Benzo(a)pyrene	0.0002	0.001 (0.0005)	0.0005 (0.0005)	ND (0.0005)	0.00071 (0.00051)	0.000175 (0.000036)	ND (0.00004)	NA	NA	NA	0.0003	ND (0.0001)
Benzo(b)fluoranthene	0.0012	0.002 (0.0005)	0.0009 (0.0005)	0.0006 (0.0005)	0.0011 (0.00051)	0.000331 (0.000036)	0.0000261 J (0.00004)	NA	NA	NA	0.0004	ND (0.0001)
Benzo(g,h,i)perylene	0.00026	0.002 (0.0005)	0.0006 (0.0005)	0.0003 J (0.0005)	0.00062 (0.00051)	0.000158 (0.000071)	ND (0.00008)	NA	NA	NA	0.0002	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.002 (0.0005)	ND (0.0005)	0.0007 (0.0005)	0.00085 (0.00051)	0.00029 (0.000071)	ND (0.00008)	NA	NA	NA	0.00063	ND (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.001 (0.0005)	0.001 (0.0005)	0.0008 (0.0005)	0.0013 (0.00051)	0.000165 (0.000071)	0.000346 (0.00008)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0001	ND (0.0001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	ND (0.16)	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.071 (0.0005)	0.078 (0.0005)	0.078 (0.0005)	0.015 (0.00051)	ND (0.000071)	0.00633 (0.0004)	0.33	0.61	0.53	0.56	0.26
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	0.002 (0.0005)	0.002 (0.0005)	0.001 (0.0005)	0.001 (0.00051)	0.000131 (0.000071)	0.00021 (0.00008)	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.002 (0.0005)	0.0009 (0.0005)	0.0007 (0.0005)	0.0015 (0.00051)	0.000609 (0.000071)	0.000165 (0.00008)	NA	NA	NA	0.0025	0.0003 J
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	84 (0.5)	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	12 (0.2)	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.003)	0.00014 J (0.0005)	0.00016 J (0.0005)	0.00015 J (0.00052)	ND (0.001)	ND (0.001)	ND (0.00048)	ND (0.00048)	0.0046	0.000000049	ND (0.000047)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3	V-MW-3
Field Sample ID	Used Aquifer	MW-3_02-13-2013	MW-3_04-04-2013	MW-3_05-14-2013	MW-3_06-28-2013	MW-3_08-07-2013	MW-3_09-18-2013	MW-3_11-05-2013	MW-3_12-20-2013	MW-3_04-17-2014	MW-3_06-25-2014	MW-3_09-15-2014
Sample Date	(TDS ≤ 2500)	2/13/2013	4/4/2013	5/14/2013	6/28/2013	8/7/2013	9/18/2013	11/5/2013	12/20/2013	4/17/2014	6/25/2014	9/15/2014
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.022	0.026	0.026	0.026	0.024	0.031	0.023	0.026	0.028	0.023	0.023
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.037	0.054	0.086	0.09	0.11	0.11	0.095	0.11	0.17	0.038	0.035 J
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.00001)	ND (0.0000096)	ND (0.00001)	ND (0.0000096)	ND (0.0000097)	ND (0.0000094)	ND	ND
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.003)	ND (0.005)	ND	ND
Ethyl Benzene	0.7	0.13	0.13	0.17	0.16	0.19	0.14	0.18	0.17	0.14	0.13	0.12
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.005)	0.002	ND (0.005)	ND (0.005)	0.006 J	ND (0.005)	ND (0.005)	0.003 J	ND (0.005)	0.006	ND
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.12	0.12	0.14	0.12	0.12	0.11	0.14	0.14	0.12	0.12	0.12
1,2,4-Trimethylbenzene	0.53	0.008 J	0.005	0.008 J	0.007 J	0.009 J	0.006 J	0.007 J	0.006 J	0.008 J	0.004 J	ND
1,3,5-Trimethylbenzene	0.53	0.018	0.026	0.041	0.037	0.044	0.038	0.039	0.033	0.044	0.016	0.014 J
Xylenes (total)	10	0.26	0.25	0.32	0.29	0.34	0.23	0.28	0.29	0.26	0.25	0.22
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	ND (0.0005)	ND (0.005)	0.0007	0.0005 J	0.0006	0.003 J	0.004 J	0.008	0.005	0.0002 J	0.0002 J
Benzo(a)pyrene	0.0002	ND (0.0005)	ND (0.005)	0.0003 J	0.0002 J	0.0003 J	0.001 J	0.002 J	0.003 J	0.003	ND	0.0001 J
Benzo(b)fluoranthene	0.0012	ND (0.0005)	ND (0.005)	0.0003 J	0.0003 J	0.0003 J	0.001 J	0.002 J	0.005 J	0.003	0.0001 J	0.0002 J
Benzo(g,h,i)perylene	0.00026	ND (0.0005)	ND (0.005)	0.0002 J	0.0001 J	0.0002 J	ND (0.001)	0.001 J	0.002 J	0.002 J	ND	ND
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0005)	ND (0.005)	0.0007	0.0006	0.0007	0.004 J	0.004 J	0.008	0.005	0.0002 J	0.0003 J
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.0005)	ND (0.005)	0.0002 J	ND (0.0001)	0.0001 J	ND (0.001)	0.001 J	0.002 J	0.0009 J	ND	ND
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.22	0.16	0.27	0.27	0.33	0.23	0.33	0.32	0.27	0.26	0.19
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0002 J	0.002 J	0.003	0.002	0.003	0.013	0.014	0.03	0.027	0.0009	0.001
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)	0.00018 J	0.00011 J	0.00016 J	0.00015 J	ND	0.000000085 J
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-3	V-MW-3	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4
Field Sample ID	Used Aquifer	MW-3_12-04-2014	V-MW-3-20160316	MW-4_05-26-2011	MW-4_06-21-2011	MW-4_09-20-2011	MW-4_08-15-2012	MW-4_11-14-2012	MW-4_02-12-2013	MW-4_04-03-2013	MW-4_05-13-2013	MW-4_06-26-2013
Sample Date	(TDS ≤ 2500)	12/4/2014	3/16/2016	5/26/2011	6/21/2011	9/20/2011	8/15/2012	11/14/2012	2/12/2013	4/3/2013	5/13/2013	6/26/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.024	0.0231 (0.02)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)
sec-Butylbenzene	9.7	NA	ND (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	ND (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.03	0.0356 (0.02)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)
Cyclohexane	53	NA	0.0578 (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND	ND (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000097)	ND (0.0000096)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.0000097)
1,2-Dichloroethane	0.005	ND	ND (0.02)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)
Ethyl Benzene	0.7	0.11	0.101 (0.02)	ND (0.002)	ND (0.002)	ND (0.002)	0.0009	0.0006 J	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)
Hexane	5.8	NA	0.147 (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND	ND (0.02)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.097	0.112 (0.1)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)
1,2,4-Trimethylbenzene	0.53	0.004 J	ND (0.02)	ND (0.002)	ND (0.002)	ND (0.002)	0.0006	0.0006 J	ND (0.002)	0.0006 J	ND (0.002)	ND (0.0005)
1,3,5-Trimethylbenzene	0.53	0.012	ND (0.02)	ND (0.002)	ND (0.002)	ND (0.002)	0.093	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)
Xylenes (total)	10	0.2	0.251 (0.06)	ND (0.006)	ND (0.006)	ND (0.006)	0.44	0.002	ND (0.001)	0.002	ND (0.001)	ND (0.0005)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.0002 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	ND	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	ND	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.0003 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	0.0215 (0.001)	ND (0.008)	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.19	0.033 (0.001)	ND (0.008)	ND (0.008)	ND (0.008)	ND (0.001)	ND (0.001)	ND (0.004)	ND (0.004)	ND (0.004)	ND (0.001)
4-Nitrophenol	0.06	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	ND (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.003	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND	ND (0.002)	ND (0.00048)	ND (0.00048)	ND (0.00048)	0.00084	ND (0.000047)	ND (0.001)	0.000088 J	ND (0.001)	ND (0.000085)
Nickel	--	NA	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	ND (0.025)	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-4	V-MW-5	V-MW-5
Field Sample ID	Used Aquifer	MW-4_08-06-2013	MW-4_09-19-2013	MW-4_11-06-2013	MW-4_12-20-2013	MW-4_04-16-2014	MW-4_06-25-2014	MW-4_09-15-2014	MW-4_12-04-2014	V-MW-4-20160315	MW-5_05-26-2011	MW-5_09-21-2011
Sample Date	(TDS ≤ 2500)	8/6/2013	9/19/2013	11/6/2013	12/20/2013	4/16/2014	6/25/2014	9/15/2014	12/4/2014	3/15/2016	5/26/2011	9/21/2011
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	0.74	0.22
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Cumene	3.5	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	0.031	0.059
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000096)	ND (0.0000096)	ND (0.0000097)	ND (0.0000097)	ND (0.0000094)	ND	ND	ND	ND (0.00001)	ND (0.00005)	ND (0.00005)
1,2-Dichloroethane	0.005	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.005)	ND (0.002)
Ethyl Benzene	0.7	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	0.16	0.24
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Methyl tert-butyl ether	0.02	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.01)	ND (0.004)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.005)	0.2	0.08
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	0.014	0.018
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	ND	ND (0.001)	0.21	0.19
Xylenes (total)	10	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND	ND	0.0005 J	ND (0.003)	0.71	0.26
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.04)	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA
Naphthalene	0.1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND	ND	ND	ND (0.001)	0.45	0.26
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.003)	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.000085)	0.0003 J	0.00012 J	0.0002 J	0.00044 J	ND	ND	ND	ND (0.002)	ND (0.00048)	ND (0.00048)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	0.00421 (0.002)	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0341 (0.025)	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5
Field Sample ID	Used Aquifer	MW-5_08-16-2012	MW-5 Dup_08-16-2012	MW-5_11-15-2012	MW-5 Dup_11-15-2012	MW-5_02-13-2013	MW-5_04-04-2013	MW-5_05-13-2013	MW-5_06-27-2013	MW-5_08-07-2013	MW-5_09-18-2013	MW-5_11-05-2013
Sample Date	(TDS ≤ 2500)	8/16/2012	8/16/2012	11/15/2012	11/15/2012	2/13/2013	4/4/2013	5/13/2013	6/27/2013	8/7/2013	9/18/2013	11/5/2013
Comments	MSCs		Field Duplicate		Field Duplicate							
Volatile Organic Compounds												
Benzene	0.005	0.93	0.96	1	0.65	0.38	0.32	0.29	0.34	0.29	0.44	0.23
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.081	0.12	0.036	0.029	0.021	0.016	0.016 J	0.014	0.044	0.069	0.048
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000015)	ND (0.000015)	ND (0.0000096)	ND (0.0000096)	ND (0.000029)	ND (0.000029)	ND (0.00003)	ND (0.0000098)	ND (0.0000095)	ND (0.00001)	ND (0.0000094)
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.005)	ND (0.01)	ND (0.003)	ND (0.005)	ND (0.0005)	ND (0.005)
Ethyl Benzene	0.7	0.21	0.27	0.099	0.081	0.059	0.048	0.051	0.051	0.081	0.17	0.11
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.01	0.009	ND (0.0005)	ND (0.0005)	ND (0.01)	ND (0.005)	ND (0.01)	ND (0.003)	0.006 J	0.002	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.24	0.28	0.2	0.16	0.089	0.071	0.072	0.082	0.071	0.11	0.073
1,2,4-Trimethylbenzene	0.53	0.034	0.056	0.006 J	0.005 J	ND (0.02)	0.003 J	ND (0.02)	0.003 J	0.011 J	0.012	0.011 J
1,3,5-Trimethylbenzene	0.53	0.42	0.62	0.21	0.17	0.13	0.1	0.11	0.089	0.27	0.55	0.27
Xylenes (total)	10	0.72	0.94	0.54	0.44	0.24	0.14	0.15	0.18	0.24	0.3	0.22
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.0006	0.0004	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0001)	0.0003 J	0.009	0.012
Benzo(a)pyrene	0.0002	0.0003	0.0002	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0001)	0.0002 J	0.005 J	0.007
Benzo(b)fluoranthene	0.0012	0.0003	0.0002	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0001)	0.0001 J	0.004 J	0.006
Benzo(g,h,i)perylene	0.00026	0.0002	0.0002	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0001)	0.0002 J	0.002 J	0.004 J
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.0007	0.0005	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0001)	0.0002 J	0.009	0.016
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	0.0001	0.0001	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0001)	0.0001 J	ND (0.001)	0.003 J
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.42	0.54	0.29	0.24	0.18	0.15	0.17	0.14	0.24	0.48	0.28
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0026	0.002	0.0002 J	0.0002 J	0.0001 J	ND (0.0005)	0.0001 J	ND (0.0001)	0.001	0.041	0.049
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.00000034)	ND (0.00000034)	ND (0.000047)	ND (0.000047)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)	0.000092 J
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-5	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6
Field Sample ID	Used Aquifer	MW-5_12-20-2013	MW-5_04-17-2014	MW-5_06-24-2014	MW-5_09-15-2014	MW-5_12-04-2014	V-MW-5-20160316	MW-6_05-26-2011	MW-6_06-21-2011	MW-6_09-20-2011	MW-6_11-15-2012	MW-6_02-13-2013
Sample Date	(TDS ≤ 2500)	12/20/2013	4/17/2014	6/24/2014	9/15/2014	12/4/2014	3/16/2016	5/26/2011	6/21/2011	9/20/2011	11/15/2012	2/13/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.23	0.31	0.15	0.33	0.43	0.386 SL (0.02)	0.77	0.76	0.69	0.65	0.63
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	ND,SL (0.02)	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	ND,SL (0.02)	NA	NA	NA	NA	NA
Cumene	3.5	0.099	0.071	0.07	0.079	0.027	0.029 SL (0.02)	0.04	0.084	0.048	0.038	0.055
Cyclohexane	53	NA	NA	NA	NA	NA	0.051 SL (0.02)	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00001)	ND (0.000095)	ND	ND	ND	ND,SL (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000096)	0.000018 J
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.005)	ND	ND	ND	ND,SL (0.02)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.01)
Ethyl Benzene	0.7	0.17	0.15	0.14	0.13	0.064	0.0773 SL (0.02)	0.28	0.33	0.25	0.19	0.19
Hexane	5.8	NA	NA	NA	NA	NA	0.183 SL (0.02)	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.005)	ND (0.005)	ND	0.006 J	0.007	ND,SL (0.02)	0.017	ND (0.01)	0.052	0.013	0.02
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.083	0.096	0.055	0.1	0.14	0.165 SL (0.1)	0.21	0.2	0.19	0.21	0.18
1,2,4-Trimethylbenzene	0.53	0.023	0.021	0.037	0.022	0.004 J	ND,SL (0.02)	0.016	0.036	0.017	0.011 J	0.022
1,3,5-Trimethylbenzene	0.53	0.58	0.42	0.47	0.48	0.18	0.167 SL (0.02)	0.35	0.75	0.39	0.34	0.64
Xylenes (total)	10	0.35	0.3	0.25	0.28	0.27	0.409 SL (0.06)	1.2	1.4	0.85	0.86	1
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	0.00181 SL (0.001)	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	ND,SL (0.001)	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.039 J	0.007	ND	0.0005 J	ND	ND,SL (0.001)	NA	NA	NA	0.001	0.018
Benzo(a)pyrene	0.0002	0.024 J	0.004 J	ND	0.0003 J	ND	ND,SL (0.001)	NA	NA	NA	0.0003 J	0.006
Benzo(b)fluoranthene	0.0012	0.023 J	0.004 J	ND	0.0002 J	ND	ND,SL (0.001)	NA	NA	NA	0.0006	0.007
Benzo(g,h,i)perylene	0.00026	ND (0.01)	0.003 J	ND	0.0002 J	ND	ND,SL (0.001)	NA	NA	NA	0.0001 J	0.002 J
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	ND,SL (0.001)	NA	NA	NA	NA	NA
Chrysene	0.0019	0.052	0.008	ND	0.0007	ND	ND,SL (0.001)	NA	NA	NA	0.0009	0.016
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	ND,SL (0.001)	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	ND,SL (0.01)	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	ND,SL (0.001)	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	ND,SL (0.001)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.01)	0.001 J	ND	0.0001 J	ND	ND,SL (0.001)	NA	NA	NA	0.0002 J	0.002 J
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	0.0131 SL (0.001)	ND (0.04)	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	ND,SL (0.01)	NA	NA	NA	NA	NA
Naphthalene	0.1	0.59	0.52	0.37	0.37	0.18	0.0491 SL (0.001)	1.4	1.5	1.1	0.96	1.3
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	ND,OE,SL (0.01)	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	ND,SL (0.001)	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	ND,SL (0.01)	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	ND,SL (0.003)	NA	NA	NA	NA	NA
Pyrene	0.13	0.15	0.029	0.006 J	0.002	0.002 J	ND,SL (0.001)	NA	NA	NA	0.007	0.091
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	0.0058 SL (0.002)	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.00011 J	0.00011 J	0.00000009 J	ND	ND	ND,SL (0.002)	ND (0.00048)	0.0013	ND (0.00048)	ND (0.000047)	ND (0.001)
Nickel	--	NA	NA	NA	NA	NA	0.00203 SL (0.002)	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	ND,SL (0.025)	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6
Field Sample ID	Used Aquifer	MW-6_04-04-2013	MW-6_05-14-2013	MW-6 Dup_05-14-2013	MW-6_06-27-2013	MW-6 Dup_06-27-2013	MW-6_08-07-2013	MW-6 Dup_08-07-2013	MW-6_09-18-2013	MW-6 Dup_09-18-2013	MW-6_11-05-2013	MW-6 Dup_11-05-2013
Sample Date	(TDS ≤ 2500)	4/4/2013	5/14/2013	5/14/2013	6/27/2013	6/27/2013	8/7/2013	8/7/2013	9/18/2013	9/18/2013	11/5/2013	11/5/2013
Comments	MSCs			Field Duplicate		Field Duplicate		Field Duplicate		Field Duplicate		Field Duplicate
Volatile Organic Compounds												
Benzene	0.005	0.53	0.57	0.57	0.51	0.55	0.53	0.56	0.61	0.58	0.6	0.59
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.049	0.047	0.066	0.065	0.078	0.043	0.048	0.089	0.086	0.064	0.073
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000029)	ND (0.000028)	ND (0.00001)	ND (0.0000099)	ND (0.0000096)	ND (0.0000096)	ND (0.0000099)	ND (0.0000098)	0.000015 J	ND (0.0000096)
1,2-Dichloroethane	0.005	ND (0.02)	ND (0.01)	ND (0.01)	ND (0.003)	ND (0.003)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Ethyl Benzene	0.7	0.17	0.21	0.24	0.22	0.25	0.19	0.21	0.25	0.24	0.2	0.21
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.015 J	0.009 J	0.01 J	0.009	0.008	0.01 J	0.007 J	0.025	0.026	0.023	0.021
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.17	0.21	0.21	0.18	0.2	0.21	0.22	0.2	0.18	0.18	0.18
1,2,4-Trimethylbenzene	0.53	0.016 J	0.016 J	0.018 J	0.022	0.028	0.013 J	0.013 J	0.034	0.033	0.023	0.025
1,3,5-Trimethylbenzene	0.53	0.5	0.41	0.57	0.54	0.68	0.36	0.44	0.82	0.77	0.56	0.64
Xylenes (total)	10	0.84	0.9	1	0.96	1	0.84	0.93	1.2	1.1	0.9	0.94
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.005	0.003 J	0.02	0.041	0.025	0.0007	0.0008	0.01	0.011	0.022	0.034
Benzo(a)pyrene	0.0002	0.002 J	0.001 J	0.007	0.012	0.008	0.0003 J	0.0003 J	0.003 J	0.004 J	0.007	0.01
Benzo(b)fluoranthene	0.0012	0.003 J	0.001 J	0.009	0.016	0.013	0.0003 J	0.0004 J	0.005 J	0.005	0.009	0.014
Benzo(g,h,i)perylene	0.00026	ND (0.005)	ND (0.006)	0.002 J	0.004 J	0.002	0.0001 J	ND (0.0001)	ND (0.001)	ND (0.001)	0.002 J	0.004 J
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.005 J	0.003 J	0.018	0.034	0.021	0.0006	0.0007	0.009	0.009	0.019	0.029
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.005)	ND (0.006)	0.002 J	0.003 J	0.002	ND (0.0001)	ND (0.0001)	ND (0.001)	ND (0.001)	0.002 J	0.004 J
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	1.2	1	1.1	1.9	1.1	1.1	1.2	1.7	1.5	1.3	1.4
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.031	0.011	0.11	0.19	0.12	0.004	0.004	0.058	0.062	0.11	0.17
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)	ND (0.000085)	ND (0.000085)	ND (0.000085)	ND (0.000085)	0.00019 J
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6	V-MW-6
Field Sample ID	Used Aquifer	MW-6_12-20-2013	MW-6 Dup_12-20-2013	MW-6 Dup_04-17-2014	MW-6_04-17-2014	MW-6 Dup_06-24-2014	MW-6_06-24-2014	MW-6 Dup_09-15-2014	MW-6_09-15-2014	MW-6 Dup_12-04-2014	MW-6_12-04-2014	V-MW-6-20160316
Sample Date	(TDS ≤ 2500)	12/20/2013	12/20/2013	4/17/2014	4/17/2014	6/24/2014	6/24/2014	9/15/2014	9/15/2014	12/4/2014	12/4/2014	3/16/2016
Comments	MSCs		Field Duplicate	Field Duplicate		Field Duplicate		Field Duplicate		Field Duplicate		
Volatile Organic Compounds												
Benzene	0.005	0.54	0.59	0.57	0.56	0.49	0.49	0.49	0.53	0.5	0.53	0.455 (0.01)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Cumene	3.5	0.062	0.066	0.075	0.053	0.062	0.058	0.039	0.04	0.041	0.036	0.0317 (0.01)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0521 (0.01)
1,2-Dibromoethane	0.00005	ND (0.0000099)	ND (0.00001)	0.000011 J	0.00002 J	0.000028 J	0.000023 J	ND	ND	ND	ND	ND (0.00001)
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.005)	ND (0.003)	ND (0.003)	ND	ND	ND	ND	ND	ND	ND (0.01)
Ethyl Benzene	0.7	0.18	0.19	0.2	0.16	0.2	0.19	0.14	0.15	0.17	0.17	0.136 (0.01)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.386 (0.01)
Methyl tert-butyl ether	0.02	0.017	0.022	0.047	0.048	0.039	0.038	0.039	0.039	0.021	0.019	0.0157 (0.01)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.17	0.18	0.18	0.16	0.14	0.14	0.16	0.18	0.21	0.21	0.182 (0.05)
1,2,4-Trimethylbenzene	0.53	0.02 J	0.022	0.027	0.02	0.041	0.037	0.022	0.019 J	0.005 J	0.008 J	0.0113 (0.01)
1,3,5-Trimethylbenzene	0.53	0.5	0.54	0.7	0.49	0.55	0.51	0.44	0.41	0.32	0.33	0.313 (0.01)
Xylenes (total)	10	0.85	0.89	0.92	0.75	0.67	0.66	0.65	0.69	0.73	0.76	0.698 (0.03)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0069 (0.001)
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(a)anthracene	0.0039	0.3	0.2	0.062	0.059	0.038	0.062	0.004	0.007	0.0007	0.0008	ND (0.001)
Benzo(a)pyrene	0.0002	0.089	0.058	0.019	0.017	0.013	0.019	0.001	0.002	0.0002 J	0.0003 J	ND (0.001)
Benzo(b)fluoranthene	0.0012	0.13	0.09	0.027	0.025	0.019	0.029	0.002	0.003	0.0003 J	0.0003 J	ND (0.001)
Benzo(g,h,i)perylene	0.00026	0.024	0.017	0.005	0.005	0.004 J	0.005 J	0.0004 J	0.0007	ND	ND	ND (0.001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Chrysene	0.0019	0.23	0.16	0.049	0.048	0.034	0.051	0.003	0.006	0.0006	0.0007	ND (0.001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0109 (0.01)
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00221 (0.001)
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00316 (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	0.027	0.019	0.006	0.005	0.004 J	0.006 J	0.0004 J	0.0006	ND	ND	ND (0.001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0137 (0.001)
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Naphthalene	0.1	1.7	1.8	1.4	1.4	1.8	1.6	1.3	1.2	0.92	0.98	0.113 (0.001)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00193 (0.001)
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.003)
Pyrene	0.13	1.2	0.84	0.27	0.25	0.21	0.32	0.022	0.039	0.004	0.004	0.00155 (0.001)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.000091 J	0.0002 J	0.000086 J	0.00011 J	ND	ND	ND	ND	ND	ND	ND (0.002)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7
Field Sample ID	Used Aquifer	MW-7_05-26-2011	MW-7_06-21-2011	MW-7_09-21-2011	MW-7_08-16-2012	MW-7_11-15-2012	MW-7_02-13-2013	MW-7_04-04-2013	MW-7 DUP_04-04-2013	MW-7_05-14-2013	MW-7_06-28-2013	MW-7_08-06-2013
Sample Date	(TDS ≤ 2500)	5/26/2011	6/21/2011	9/21/2011	8/16/2012	11/15/2012	2/13/2013	4/4/2013	4/4/2013	5/14/2013	6/28/2013	8/6/2013
Comments	MSCs								Field Duplicate			
Volatile Organic Compounds												
Benzene	0.005	0.37	0.88	0.48	0.14	0.11	0.084	0.08	0.082	0.18	0.2	0.25
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.044	0.12	0.067	0.061	0.025	0.013	0.01	0.009	0.045	0.058	0.13
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000096)	ND (0.0000096)	ND (0.0000029)	ND (0.000029)	ND (0.00003)	ND (0.000029)	ND (0.0000095)	ND (0.0000095)
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.005)	ND (0.003)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.01)
Ethyl Benzene	0.7	0.27	0.53	0.26	0.19	0.068	0.071	0.056	0.056	0.12	0.13	0.23
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.01)	ND (0.01)	0.0051	ND (0.005)	ND (0.003)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.01)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.15	0.29	0.16	0.11	0.077	0.054	0.046	0.046	0.11	0.099	0.15
1,2,4-Trimethylbenzene	0.53	0.01	0.021	0.016	0.009	ND (0.003)	0.002 J	0.001 J	0.001 J	0.006 J	0.007 J	ND (0.01)
1,3,5-Trimethylbenzene	0.53	0.074	0.21	0.089	0.11	0.022	0.019	0.015	0.015	0.054	0.078	0.18
Xylenes (total)	10	0.38	0.82	0.4	0.21	0.13	0.095	0.076	0.075	0.25	0.27	0.49
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	ND (0.04)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.68	1.1	0.62	0.47	0.18	0.14	0.1	0.1	0.38	0.5	0.85
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.00048)	ND (0.00048)	ND (0.00048)	ND (0.00000034)	0.000065 J	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.000085)	ND (0.000085)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-7	V-MW-7	V-MW-7	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-8
Field Sample ID	Used Aquifer	MW-7_09-18-2013	MW-7_11-05-2013	MW-7_12-20-2013	MW-8_05-26-2011	MW-8_06-21-2011	MW-8_09-20-2011	MW-8_08-16-2012	MW-8_11-15-2012	MW-8_02-13-2013	MW-8_04-04-2013	MW-8_05-13-2013
Sample Date	(TDS ≤ 2500)	9/18/2013	11/5/2013	12/20/2013	5/26/2011	6/21/2011	9/20/2011	8/16/2012	11/15/2012	2/13/2013	4/4/2013	5/13/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.27	0.23	0.17	0.16	0.16	0.12	0.026	0.017	0.01	0.02	0.031
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.11	0.11	0.06	0.039	0.052	0.033	0.046	0.021	0.019	0.018	0.011 J
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000099)	ND (0.0000094)	ND (0.0000097)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000096)	ND (0.0000096)	ND (0.000029)	ND (0.000029)	ND (0.000029)
1,2-Dichloroethane	0.005	ND (0.0005)	ND (0.005)	ND (0.005)	0.0046	ND (0.005)	ND (0.001)	ND (0.003)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.01)
Ethyl Benzene	0.7	0.17	0.21	0.11	0.053	0.088	0.035	0.022	0.007	0.005	0.006	ND (0.01)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.003	ND (0.005)	ND (0.005)	0.0059	ND (0.01)	0.0084	0.004	0.002	ND (0.005)	0.004 J	ND (0.01)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.15	0.14	0.11	0.016	0.023	0.018	0.009	0.006	0.006	0.008	0.008 J
1,2,4-Trimethylbenzene	0.53	0.014	0.013 J	0.007 J	ND (0.002)	ND (0.01)	0.0031	ND (0.003)	ND (0.001)	ND (0.01)	ND (0.01)	ND (0.02)
1,3,5-Trimethylbenzene	0.53	0.11	0.14	0.081	0.024	0.055	0.027	0.062	0.011	0.007 J	0.008 J	0.012 J
Xylenes (total)	10	0.42	0.38	0.27	0.057	0.12	0.053	0.027	0.011	0.008	0.006	0.012
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	0.0002	ND (0.0001)	ND (0.0005)	ND (0.0005)	0.0002 J
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	ND (0.00008)	ND (0.0001)	ND (0.0005)	ND (0.0005)	0.0001 J
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	0.0001	ND (0.0001)	ND (0.0005)	ND (0.0005)	0.0003 J
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	ND (0.00008)	ND (0.0001)	ND (0.0005)	ND (0.0005)	0.0001 J
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	0.0002	ND (0.0001)	ND (0.0005)	ND (0.0005)	0.0003 J
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	ND (0.00008)	ND (0.0001)	ND (0.0005)	ND (0.0005)	ND (0.0005)
2-Methylnaphthalene	0.026	NA	NA	NA	ND (0.008)	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.53	0.56	0.48	0.1	0.22	0.1	0.081	0.021	0.014 J	0.013 J	ND (0.04)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	0.001	0.0003 J	0.0002 J	0.0002 J	0.0007
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.000085)	0.00016 J	0.000092 J	ND (0.00048)	ND (0.00048)	ND (0.00048)	ND (0.00035)	0.00015 J	ND (0.001)	0.000077 J	ND (0.001)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-7	V-MW-8
Field Sample ID	Used Aquifer	MW-8_06-27-2013	MW-8_08-07-2013	MW-8_09-19-2013	MW-8_11-06-2013	MW-8_12-20-2013	MW-7_04-17-2014	MW-7_06-24-2014	MW-7_09-15-2014	MW-7_12-04-2014	V-MW-7-20160317	MW-8_04-17-2014
Sample Date	(TDS ≤ 2500)	6/27/2013	8/7/2013	9/19/2013	11/6/2013	12/20/2013	4/17/2014	6/24/2014	9/15/2014	12/4/2014	3/17/2016	4/17/2014
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.029	0.034	0.035	0.039	0.019	0.14	0.15	0.1	0.082	0.822 (0.025)	0.013
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)	NA
Cumene	3.5	0.014	0.018	0.022	0.021	0.018	0.056	0.032	0.019 J	0.012	0.0422 (0.025)	0.019
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 (0.025)	NA
1,2-Dibromoethane	0.00005	ND (0.0000098)	ND (0.0000096)	ND (0.0000098)	ND (0.0000096)	ND (0.0000097)	0.00003	0.000021 J	ND	ND	ND (0.00001)	ND (0.0000095)
1,2-Dichloroethane	0.005	0.002	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.003)	ND (0.003)	ND	ND	ND	ND (0.025)	ND (0.0005)
Ethyl Benzene	0.7	0.004	0.006	0.008	0.007	0.009	0.11	0.096	0.034	0.048	0.159 (0.025)	0.009
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)	NA
Methyl tert-butyl ether	0.02	0.003	0.006	0.011	0.002	ND (0.003)	0.003 J	0.008 J	ND	0.003	ND (0.025)	0.002
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.008	0.009	0.013	0.016	0.015	0.099	0.1	0.057	0.057	0.217 (0.125)	0.006
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.003)	0.007 J	ND	ND	0.002	ND (0.025)	ND (0.0005)
1,3,5-Trimethylbenzene	0.53	0.008	0.009	0.014	0.01	0.011	0.078	0.041	0.057	0.034	0.0811 (0.025)	0.008
Xylenes (total)	10	0.009	0.01	0.012	0.01	0.011	0.21	0.16	0.11	0.081	0.41 (0.075)	0.012
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Benzo(a)anthracene	0.0039	0.0003 J	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	NA	NA	NA	NA	ND (0.001)	ND (0.0001)
Benzo(a)pyrene	0.0002	0.0002 J	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.0001 J	NA	NA	NA	NA	ND (0.001)	ND (0.0001)
Benzo(b)fluoranthene	0.0012	0.0006	0.0002 J	0.0001 J	ND (0.0001)	0.0003 J	NA	NA	NA	NA	ND (0.001)	0.0002 J
Benzo(g,h,i)perylene	0.00026	0.0002 J	0.0001 J	ND (0.0001)	ND (0.0001)	0.0001 J	NA	NA	NA	NA	ND (0.001)	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Chrysene	0.0019	0.0007	0.0002 J	0.0001 J	ND (0.0001)	0.0002 J	NA	NA	NA	NA	ND (0.001)	0.0002 J
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Indeno(1,2,3-cd)pyrene	0.0023	0.0002 J	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	NA	NA	NA	NA	ND (0.001)	ND (0.0001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.17 (0.001)	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA
Naphthalene	0.1	0.004	0.012	0.02	0.014	0.017 J	0.4	0.27	0.19	0.14	0.366 (0.005)	0.012
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,OE (0.01)	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0148 (0.01)	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.003)	NA
Pyrene	0.13	0.001	0.0004 J	0.0003 J	0.0002 J	0.0005	NA	NA	NA	NA	ND (0.001)	0.0004 J
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.000085)	ND (0.000085)	0.00098 J	0.00015 J	0.00015 J	0.000086 J	ND	ND	ND	ND (0.002)	ND (0.000085)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-8	V-MW-8	V-MW-8	V-MW-8	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9
Field Sample ID	Used Aquifer	MW-8_06-25-2014	MW-8_09-15-2014	MW-8_12-04-2014	V-MW-8-20160315	MW-9_05-26-2011	MW-9_06-21-2011	MW-9_09-20-2011	MW-9_08-16-2012	MW-9_11-14-2012	MW-9_02-12-2013	MW-9_04-03-2013
Sample Date	(TDS ≤ 2500)	6/25/2014	9/15/2014	12/4/2014	3/15/2016	5/26/2011	6/21/2011	9/20/2011	8/16/2012	11/14/2012	2/12/2013	4/3/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.012	0.004 J	0.011	0.00571 (0.001)	0.056	0.046	0.0084	0.028	0.016	0.014	0.014
sec-Butylbenzene	9.7	NA	NA	NA	0.00499 (0.001)	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	0.0019 (0.001)	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.016	0.012	0.021	0.0112 (0.001)	0.05	0.051	0.032	0.04	0.041	0.036	0.031
Cyclohexane	53	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND	ND	ND	ND (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0000096)	ND (0.0000095)	ND (0.000029)	ND (0.000029)
1,2-Dichloroethane	0.005	ND	ND	ND	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.005)
Ethyl Benzene	0.7	0.009	0.005 J	0.008	0.00359 (0.001)	0.0088	ND (0.01)	0.0033	0.007	0.007	0.008	0.007
Hexane	5.8	NA	NA	NA	0.00625 (0.001)	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	0.0005 J	ND	ND	ND (0.001)	ND (0.002)	ND (0.01)	ND (0.002)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.005	ND	0.005	ND (0.005)	0.015	0.015	0.0024	0.011	0.007	0.007	0.008
1,2,4-Trimethylbenzene	0.53	0.0005 J	ND	0.0008 J	ND (0.001)	0.0028	ND (0.01)	ND (0.002)	0.002	0.002 J	0.005	ND (0.01)
1,3,5-Trimethylbenzene	0.53	0.009	0.003 J	0.006	0.00246 (0.001)	0.03	0.02	0.0072	0.01	0.011	0.009	0.011
Xylenes (total)	10	0.01	0.006	0.015	0.00418 (0.003)	0.06	0.062	0.011	0.049	0.032	0.027	0.043
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	0.00185 (0.001)	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	ND	0.0002 J	0.0002 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	ND	0.0002 J	0.0002 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	ND	0.0004 J	0.0003 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND	0.0002 J	0.0002 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND	0.0003 J	0.0003 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND	0.0002 J	0.0001 J	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	ND (0.001)	ND (0.008)	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.015	ND	0.008	0.00253 (0.001)	0.099	0.076	0.0091	0.018	0.01	0.009	0.026
4-Nitrophenol	0.06	NA	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	ND (0.003)	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND	0.0006	0.0006	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	ND (0.002)	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND	ND	ND	ND (0.002)	ND (0.00048)	ND (0.00048)	ND (0.00048)	ND (0.00034)	ND (0.000047)	ND (0.001)	ND (0.001)
Nickel	--	NA	NA	NA	ND (0.002)	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	ND (0.025)	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9	V-MW-9
Field Sample ID	Used Aquifer	MW-9_05-13-2013	MW-9_06-27-2013	MW-9_08-06-2013	MW-9_09-19-2013	MW-9_11-06-2013	MW-9_12-20-2013	MW-9_04-17-2014	MW-9_06-25-2014	MW-9_09-15-2014	MW-9_12-04-2014	V-MW-9-20160316
Sample Date	(TDS ≤ 2500)	5/13/2013	6/27/2013	8/6/2013	9/19/2013	11/6/2013	12/20/2013	4/17/2014	6/25/2014	9/15/2014	12/4/2014	3/16/2016
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.011	0.007	0.006	0.018	0.019	0.007	0.016	0.019	0.023	0.019	0.00621 (0.001)
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00362 (0.001)
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00215 (0.001)
Cumene	3.5	0.025	0.025	0.028	0.042	0.032	0.026	0.028	0.031	0.033	0.03	0.0176 (0.001)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.0000098)	ND (0.0000096)	ND (0.0000097)	ND (0.0000096)	ND (0.0000098)	ND (0.0000096)	ND	ND	ND	ND (0.00001)
1,2-Dichloroethane	0.005	ND (0.005)	ND (0.003)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.003)	ND (0.0005)	ND	ND	ND	ND (0.001)
Ethyl Benzene	0.7	0.007	0.004 J	0.003	0.006	0.005	0.005	0.003	0.003	0.004	0.004	0.0016 (0.001)
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00792 (0.001)
Methyl tert-butyl ether	0.02	ND (0.005)	ND (0.003)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.003)	ND (0.0005)	ND	ND	ND	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.007	0.004 J	0.002	0.006	0.008	0.004 J	0.004	0.005	0.007	0.007	ND (0.005)
1,2,4-Trimethylbenzene	0.53	ND (0.01)	ND (0.003)	0.0009 J	0.001 J	ND (0.0005)	ND (0.003)	0.0008 J	0.0008 J	0.001 J	0.001 J	ND (0.001)
1,3,5-Trimethylbenzene	0.53	0.01 J	0.006 J	0.004	0.008	0.005	0.006 J	0.003	0.003	0.002	0.003	0.00159 (0.001)
Xylenes (total)	10	0.037	0.015	0.008	0.021	0.014	0.021	0.017	0.014	0.016	0.014	0.00892 (0.003)
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00351 (0.001)
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Naphthalene	0.1	0.016 J	ND (0.005)	0.002 J	0.005	0.007	0.006 J	0.004	0.004	0.005	0.006	ND (0.001)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.003)
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.001)	ND (0.000085)	ND (0.000085)	ND (0.000085)	0.000092 J	0.0001 J	ND (0.000085)	ND	ND	ND	ND (0.002)
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-9	V-MW-9	V-MW-9	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10
Field Sample ID	Used Aquifer	V-MW-9_20210415	V-MW-9_20220408_42842	V-MW-9_20230517	MW-10_09-21-2011	MW-10_08-16-2012	MW-10_11-14-2012	MW-10_02-12-2013	MW-10_04-03-2013	MW-10_05-13-2013	MW-10_06-27-2013	MW-10_08-06-2013
Sample Date	(TDS ≤ 2500)	4/15/2021	4/8/2022	5/17/2023	9/21/2011	8/16/2012	11/14/2012	2/12/2013	4/3/2013	5/13/2013	6/27/2013	8/6/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.013 (0.001)	0.0037 (0.0005)	0.0096 (0.0005)	0.53	0.53	0.55	0.54	0.5	0.56	0.47	0.45
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.025 (0.005)	0.0113 (0.001)	0.0149 (0.001)	0.061	0.043	0.032	0.034	0.032	0.034	0.029	0.029
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.00002)	ND (0.000021)	ND (0.00005)	ND (0.0000096)	ND (0.0000096)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.00001)	ND (0.0000097)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.003)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.01)	ND (0.003)	ND (0.005)
Ethyl Benzene	0.7	0.0017 (0.001)	ND (0.001)	0.0011 (0.001)	0.15	0.11	0.11	0.11	0.099	0.12	0.085	0.076
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.004)	ND (0.003)	ND (0.005)	ND (0.005)	ND (0.01)	ND (0.01)	ND (0.003)	ND (0.005)
tert Butyl alcohol	--	ND (0.05)	ND (0.01)	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.0049 (0.001)	0.0015 (0.001)	0.0035 (0.001)	0.21	0.21	0.22	0.21	0.2	0.23	0.16	0.14
1,2,4-Trimethylbenzene	0.53	ND (0.005)	ND (0.002)	ND (0.002)	0.065	0.046	0.034	0.034	0.033	0.036	0.03	0.031
1,3,5-Trimethylbenzene	0.53	ND (0.005)	ND (0.002)	ND (0.002)	0.37	0.3	0.2	0.21	0.19	0.21	0.17	0.17
Xylenes (total)	10	0.02 (0.006)	0.0041 (0.001)	0.0124 (0.001)	0.88	0.75	0.66	0.71	0.61	0.71	0.57	0.51
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.00052)	0.000242 (0.00008)	0.0000849 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	ND (0.00052)	0.0000566 (0.00004)	0.000093 (0.00004)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	ND (0.00052)	0.0000339 J (0.00004)	0.000133 (0.00004)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	ND (0.00052)	0.0000367 J (0.00004)	0.000357 (0.00004)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.00052)	ND (0.00008)	0.000222 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.00052)	0.000041 J (0.00008)	0.000166 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00016 J (0.00052)	0.000318 (0.00008)	0.000208 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.00052)	0.00238 B (0.00008)	ND (0.00008)	0.38	0.22	0.21	0.19	0.19	0.21	0.14	0.15
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	ND (0.00052)	0.000357 (0.00008)	0.000245 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.00052)	0.000156 (0.00008)	0.000222 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	130 (0.5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	18 (0.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.00052)	ND (0.001)	ND (0.001)	ND (0.00048)	0.0002	0.00069 J	0.0017	0.001	0.0019	0.00032 J	0.0002 J
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-10	V-MW-11	V-MW-11
Field Sample ID	Used Aquifer	MW-10_09-19-2013	MW-10_11-06-2013	MW-10_12-20-2013	MW-10_04-10-2014	MW-10_06-25-2014	MW-10_09-15-2014	MW-10_12-04-2014	V-MW-10-20160316	V-MW-10_20240514	MW-11_09-21-2011	MW-11_08-15-2012
Sample Date	(TDS ≤ 2500)	9/19/2013	11/6/2013	12/20/2013	4/10/2014	6/25/2014	9/15/2014	12/4/2014	3/16/2016	5/14/2024	9/21/2011	8/15/2012
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.51	0.48	0.49	0.4	0.47	0.45	0.4	0.453 (0.05)	0.304 (0.0025)	0.022	0.009
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	ND (0.05)	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	ND (0.05)	NA	NA	NA
Cumene	3.5	0.031	0.028	0.031	0.026	0.027	0.029	0.031	ND (0.05)	0.0382 (0.001)	0.044	0.039
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	0.0581 (0.05)	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000097)	ND (0.0000095)	0.000015 J	0.000012 J	0.000015 J	ND	ND	ND (0.00001)	ND (0.000021)	ND (0.00005)	ND (0.0000097)
1,2-Dichloroethane	0.005	ND (0.003)	ND (0.005)	ND (0.003)	ND (0.005)	ND	ND	ND	ND (0.05)	ND (0.001)	ND (0.001)	ND (0.005)
Ethyl Benzene	0.7	0.094	0.083	0.09	0.071	0.081	0.082	0.085	0.0985 (0.05)	0.075 (0.001)	0.025	0.018
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	0.216 (0.05)	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.003)	ND (0.005)	ND (0.003)	ND (0.005)	ND	ND	ND	ND (0.05)	ND (0.001)	ND (0.002)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0098 J (0.01)	NA	NA
Toluene	1	0.18	0.17	0.18	0.13	0.16	0.15	0.15	ND (0.25)	0.0485 (0.001)	0.0076	0.008
1,2,4-Trimethylbenzene	0.53	0.032	0.028	0.031	0.028	0.028	0.027	0.031	ND (0.05)	0.0186 (0.002)	0.011	0.012
1,3,5-Trimethylbenzene	0.53	0.2	0.17	0.19	0.17	0.17	0.16	0.2	0.211 (0.05)	0.119 (0.002)	0.068	0.04
Xylenes (total)	10	0.63	0.57	0.63	0.48	0.54	0.56	0.56	0.667 (0.15)	0.14 (0.001)	0.11	0.071
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	0.0000411 JB (0.00008)	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.00004)	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.00004)	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.00004)	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.00008)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.00008)	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	0.000156 B (0.00008)	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	0.012 (0.001)	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA
Naphthalene	0.1	0.2	0.17	0.17	0.18	0.19	0.17	0.18	0.0253 (0.001)	0.0167 (0.0016)	ND (0.008)	ND (0.01)
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	0.000212 B (0.00008)	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	ND (0.003)	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	0.0000456 JB (0.00008)	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.0013	0.00086 J	0.0019	0.00058 J	0.00000029 J	0.00000012 J	0.00000046 J	ND (0.002)	ND (0.001)	ND (0.00048)	0.0003
Nickel	--	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	ND (0.025)	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11	V-MW-11
Field Sample ID	Used Aquifer	MW-11_11-14-2012	MW-11_02-12-2013	MW-11_04-03-2013	MW-11_05-13-2013	MW-11_06-26-2013	MW-11_08-06-2013	MW-11_09-19-2013	MW-11_11-06-2013	MW-11_12-20-2013	MW-11_04-17-2014	MW-11_06-25-2014
Sample Date	(TDS ≤ 2500)	11/14/2012	2/12/2013	4/3/2013	5/13/2013	6/26/2013	8/6/2013	9/19/2013	11/6/2013	12/20/2013	4/17/2014	6/25/2014
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.005	0.006	0.005	0.004 J	0.004 J	0.005	0.007	0.006	0.005	0.01	0.01
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.02	0.02	0.02	0.017	0.011	0.014	0.014	0.015	0.014	0.012	0.015
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000096)	ND (0.000029)	ND (0.000029)	ND (0.00003)	ND (0.00001)	ND (0.0000097)	ND (0.0000098)	0.000011 J	ND (0.0000096)	ND (0.0000095)	ND
1,2-Dichloroethane	0.005	ND (0.0005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.003)	ND (0.003)	ND (0.0005)	ND (0.003)	ND (0.003)	ND (0.001)	ND
Ethyl Benzene	0.7	0.006	0.006	0.006	0.003 J	0.003 J	0.004 J	0.005	0.006	0.004 J	0.004	0.005
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.0005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.003)	ND (0.003)	ND (0.0005)	ND (0.003)	ND (0.003)	ND (0.001)	ND
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.003	0.004 J	0.003	ND (0.005)	ND (0.003)	0.003 J	0.004	0.004 J	0.003 J	0.004	0.005
1,2,4-Trimethylbenzene	0.53	0.004	0.004 J	0.004	0.003 J	0.003 J	ND (0.003)	0.004	0.003 J	ND (0.003)	0.003 J	0.003
1,3,5-Trimethylbenzene	0.53	0.009	0.011	0.01	0.006 J	0.005 J	0.006 J	0.009	0.008 J	0.006 J	0.009	0.01
Xylenes (total)	10	0.029	0.028	0.025	0.017	0.016	0.019	0.028	0.026	0.019	0.028	0.032
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.001)	ND (0.02)	ND (0.004)	ND (0.02)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.002)	ND
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.0011	0.00087 J	0.00031 J	0.00093 J	ND (0.000085)	ND (0.000085)	0.00013 J	0.00083 J	0.0008 J	0.00018 J	0.00000016 J
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-11	V-MW-11	V-MW-11	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-12
Field Sample ID	Used Aquifer	MW-11_09-15-2014	MW-11_12-04-2014	V-MW-11-20160315	MW-12_09-20-2011	MW-12_08-16-2012	MW-12_11-14-2012	MW-12_02-12-2013	MW-12_04-03-2013	MW-12_05-13-2013	MW-12_06-27-2013	MW-12_08-06-2013
Sample Date	(TDS ≤ 2500)	9/15/2014	12/4/2014	3/15/2016	9/20/2011	8/16/2012	11/14/2012	2/12/2013	4/3/2013	5/13/2013	6/27/2013	8/6/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.008	0.009	0.00691 (0.001)	ND (0.001)	0.015	0.001	ND (0.001)	0.003	0.0008 J	0.0007 J	0.0006 J
sec-Butylbenzene	9.7	NA	NA	0.00273 (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	0.00185 (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.015	0.021	0.0183 (0.001)	ND (0.002)	0.004	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.0005)
Cyclohexane	53	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND	ND	ND (0.00001)	ND (0.00005)	ND (0.0000096)	ND (0.0000093)	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.0000098)	ND (0.0000096)
1,2-Dichloroethane	0.005	ND	ND	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)
Ethyl Benzene	0.7	0.005	0.007	0.00336 (0.001)	ND (0.002)	0.005	ND (0.0005)	ND (0.001)	0.001	ND (0.001)	ND (0.0005)	ND (0.0005)
Hexane	5.8	NA	NA	0.0156 (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND	ND	ND (0.001)	ND (0.002)	0.0006	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.0005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.004 J	0.005	0.00528 (0.005)	ND (0.002)	0.007	0.0006 J	ND (0.001)	0.002	ND (0.001)	ND (0.0005)	ND (0.0005)
1,2,4-Trimethylbenzene	0.53	0.003 J	0.005	0.00312 (0.001)	ND (0.002)	0.005	ND (0.0005)	ND (0.002)	0.0005 J	ND (0.002)	ND (0.0005)	ND (0.0005)
1,3,5-Trimethylbenzene	0.53	0.009 J	0.013	0.00717 (0.001)	ND (0.002)	0.012	0.0006 J	ND (0.002)	0.002 J	0.0008 J	ND (0.0005)	ND (0.0005)
Xylenes (total)	10	0.029	0.042	0.0309 (0.003)	ND (0.006)	0.035	0.002	ND (0.001)	0.006	0.001	0.0006 J	0.0007 J
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	0.00407 (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND	0.002 J	ND (0.001)	ND (0.008)	0.008	ND (0.001)	ND (0.004)	0.001 J	ND (0.004)	ND (0.001)	ND (0.001)
4-Nitrophenol	0.06	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	ND (0.003)	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.00000046 J	0.00000075 J	ND (0.002)	ND (0.00048)	ND (0.00034)	ND (0.000047)	ND (0.001)	0.000078 J	ND (0.001)	ND (0.000085)	ND (0.000085)
Nickel	--	NA	NA	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	ND (0.025)	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-12	V-MW-12	V-MW-12	V-MW-16	V-MW-16	V-MW-16	V-MW-16	V-MW-16	V-MW-16	V-MW-16	V-MW-16
Field Sample ID	Used Aquifer	MW-12_09-19-2013	MW-12_11-06-2013	MW-12_12-20-2013	MW-16_08-15-2012	MW-16_11-14-2012	MW-16_02-12-2013	MW-16_04-03-2013	MW-16_05-13-2013	MW-16_06-26-2013	MW-16_08-06-2013	MW-16_09-19-2013
Sample Date	(TDS ≤ 2500)	9/19/2013	11/6/2013	12/20/2013	8/15/2012	11/14/2012	2/12/2013	4/3/2013	5/13/2013	6/26/2013	8/6/2013	9/19/2013
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.001 J	0.001 J	0.001	0.015	0.011	0.011	0.014	0.014	0.012	0.011	0.005
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.007	0.009 J	0.008 J	0.007 J	0.008	0.006 J	0.006 J	0.002
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000097)	ND (0.0000096)	ND (0.0000096)	ND (0.0000096)	ND (0.0000096)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.0000098)	ND (0.0000096)	ND (0.0000098)
1,2-Dichloroethane	0.005	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.003)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.003)	ND (0.003)	ND (0.0005)
Ethyl Benzene	0.7	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.2	0.21	0.21	0.19	0.16	0.18	0.15	0.062
Hexane	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND (0.003)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.003)	ND (0.003)	ND (0.0005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.0005)	ND (0.0005)	0.0005 J	0.13	0.067	0.044	0.043	0.04	0.031	0.028	0.012
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.31	0.36	0.37	0.3	0.3	0.29	0.27	0.095
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	0.0007 J	ND (0.0005)	0.098	0.12	0.11	0.1	0.12	0.092	0.086	0.032
Xylenes (total)	10	0.0008 J	0.002	0.001	1.1	1.2	1.3	1.1	0.98	1	0.83	0.33
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.001)	ND (0.001)	ND (0.001)	0.12	0.16	0.14	0.13	0.14	0.11	0.11	0.043
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	ND (0.000085)	0.00021 J	0.00014 J	0.0037	0.0045	0.0053	0.0057	0.0057	0.005	0.0051	0.0026
Nickel	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-16	V-MW-16	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-12	V-MW-16	V-MW-16	V-MW-16	V-MW-16
Field Sample ID	Used Aquifer	MW-16_11-06-2013	MW-16_12-20-2013	MW-12_04-16-2014	MW-12_06-25-2014	MW-12_09-15-2014	MW-12_12-04-2014	V-MW-12-20160315	MW-16_04-17-2014	MW-16_06-25-2014	MW-16_09-15-2014	MW-16_12-04-2014
Sample Date	(TDS ≤ 2500)	11/6/2013	12/20/2013	4/16/2014	6/25/2014	9/15/2014	12/4/2014	3/15/2016	4/17/2014	6/25/2014	9/15/2014	12/4/2014
Comments	MSCs											
Volatile Organic Compounds												
Benzene	0.005	0.02	0.025	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.0005)	ND	ND	0.029
sec-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
tert-Butylbenzene	9.7	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Cumene	3.5	0.007 J	0.008 J	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.0005)	ND	ND	0.009 J
Cyclohexane	53	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000096)	ND (0.0000096)	ND (0.0000096)	ND	ND	ND	ND (0.00001)	ND (0.0000094)	ND	ND	ND
1,2-Dichloroethane	0.005	ND (0.003)	ND (0.003)	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.0005)	ND	ND	ND
Ethyl Benzene	0.7	0.18	0.18	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.0005)	ND	ND	0.28
Hexane	5.8	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.003)	ND (0.003)	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.0005)	ND	ND	ND
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.05	0.052	ND (0.0005)	ND	ND	ND	ND (0.005)	ND (0.0005)	ND	ND	0.16
1,2,4-Trimethylbenzene	0.53	0.29	0.27	ND (0.0005)	ND	ND	ND	ND (0.001)	0.0006 J	ND	ND	0.44
1,3,5-Trimethylbenzene	0.53	0.097	0.099	ND (0.0005)	ND	ND	ND	ND (0.001)	ND (0.0005)	ND	ND	0.13
Xylenes (total)	10	0.94	0.97	ND (0.0005)	ND	ND	ND	ND (0.003)	0.002	ND	ND	1.6
Semivolatile Organic Compounds												
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
3&4-Methylphenol	0.49	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
Naphthalene	0.1	0.13	0.13	ND (0.001)	ND	ND	ND	ND (0.001)	ND (0.001)	ND	ND	0.17
4-Nitrophenol	0.06	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Phenol	2	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	ND (0.003)	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances												
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Calcium	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	--	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	NA	NA	NA
Iron	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	--	0.0026	0.0032	0.00011 J	ND	ND	ND	ND (0.002)	0.0021	0.00000048 J	0.00000026 J	0.00000053 J
Nickel	--	NA	NA	NA	NA	NA	NA	ND (0.002)	NA	NA	NA	NA
Zinc	--	NA	NA	NA	NA	NA	NA	ND (0.025)	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table E2
Summary of Historical Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	Non-Res GW	V-MW-16	V-MW-16	V-MW-16
Field Sample ID	Used Aquifer	V-MW-16-20160316	V-MW-16_20210415	V-MW-16_20220408
Sample Date	(TDS ≤ 2500)	3/16/2016	4/15/2021	4/8/2022
Comments	MSCs			
Volatile Organic Compounds				
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.0005)
sec-Butylbenzene	9.7	ND (0.001)	NA	NA
tert-Butylbenzene	9.7	ND (0.001)	NA	NA
Cumene	3.5	ND (0.001)	ND (0.005)	ND (0.001)
Cyclohexane	53	ND (0.001)	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00001)	ND (0.000029)	ND (0.00002)
1,2-Dichloroethane	0.005	ND (0.001)	ND (0.001)	ND (0.001)
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	ND (0.001)
Hexane	5.8	ND (0.001)	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	ND (0.05)	ND (0.01)
Toluene	1	ND (0.005)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.001)	ND (0.005)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.001)	ND (0.005)	ND (0.002)
Xylenes (total)	10	ND (0.003)	ND (0.006)	ND (0.001)
Semivolatile Organic Compounds				
Acenaphthene	3.8	ND (0.001)	NA	NA
Anthracene	0.066	ND (0.001)	ND (0.00052)	0.00159 (0.00037)
Benzo(a)anthracene	0.0039	ND (0.001)	ND (0.00052)	0.00345 (0.00019)
Benzo(a)pyrene	0.0002	ND (0.001)	ND (0.00052)	0.00454 (0.00019)
Benzo(b)fluoranthene	0.0012	ND (0.001)	ND (0.00052)	0.00985 (0.00019)
Benzo(g,h,i)perylene	0.00026	ND (0.001)	ND (0.00052)	0.00726 (0.00037)
Benzo(k)fluoranthene	0.00055	ND (0.001)	NA	NA
Chrysene	0.0019	ND (0.001)	ND (0.00052)	0.00717 (0.00037)
Dibenz(a,h)anthracene	0.0006	ND (0.001)	NA	NA
2,4-Dimethylphenol	1.9	ND (0.01)	NA	NA
Fluoranthene	0.26	ND (0.001)	NA	NA
Fluorene	1.9	ND (0.001)	ND (0.00052)	0.000587 (0.00037)
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.001)	NA	NA
2-Methylnaphthalene	0.026	ND (0.001)	NA	NA
3&4-Methylphenol	0.49	ND (0.01)	NA	NA
Naphthalene	0.1	ND (0.001)	ND (0.00052)	0.000247 JB (0.00037)
4-Nitrophenol	0.06	ND (0.01)	NA	NA
Phenanthrene	1.1	ND (0.001)	ND (0.00052)	0.00449 (0.00037)
Phenol	2	ND (0.01)	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	ND (0.003)	NA	NA
Pyrene	0.13	ND (0.001)	ND (0.00052)	0.00864 (0.00037)
Per- and Polyfluoroalkyl Substances				
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA
Metals				
Calcium	--	NA	260 (0.5)	NA
Chromium (total)	0.1	NA	NA	NA
Cobalt	--	0.0705 (0.002)	NA	NA
Iron	--	NA	0.28 (0.2)	NA
Lead	--	ND (0.002)	0.0012 (0.00052)	0.0035 (0.001)
Nickel	--	0.115 (0.002)	NA	NA
Zinc	--	0.738 (0.025)	NA	NA

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Appendix F

Tank Registration Amendment Forms

2630-PM-BECB0514 Rev. 6/2019
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
	Client ID#
51-33620 Facility ID #	Site ID#
	Account #
	Auth ID#
Phila Ref Point Breeze Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Contact Information
- ☐ Changed Facility Information
- ☐ Changed Facility Operator Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Added Tank(s) to Existing Facility*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed Product
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 W. Passyunk Ave				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19141-5299	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P	Sr	
Client Contact Title		**Phone**	**Ext**	
President		610 636-4574		
E-mail Address			**FAX**	
Gbowman@northtar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID#	Facility Name	Facility Kind

Facility Location Line 1 (if different than Site Location)	Facility Location Line 2

Facility Location Last Line - City	State	ZIP+4

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure	Feet	*--or--*	Meters
Horizontal Reference Datum Code	☐ North American Datum of 1927 ☐ North American Datum of 1983 ☐ World Geodetic System of 1984		
Horizontal Collection Method Code			
Reference Point Code			
Altitude	Feet	*--or--*	Meters
Altitude Datum Name	☐ The National Geodetic Vertical Datum of 1929 ☐ The North American Vertical Datum of 1988 (NAVD88)		
Altitude (Vertical) Location Datum Collection Method Code			
Geometric Type Code			
Data Collection Date			

Source Map Scale Number		Inch(es)	=	Feet
	--or--	Centimeter(s)	=	Meters

Flammable & Combustible Liquid Permit # (if applicable)
State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID#	Client Type / Code

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#

Individual Last Name	First Name	MI	Suffix	SSN

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2

Address Last Line – City	State	ZIP+4	Country

Client Contact Last Name	First Name	MI	Suffix

Client Contact Title	Phone	Ext

E-mail Address	FAX

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name			
Employer ID# (EIN) or SSN			
Mailing Address Line 1			
Mailing Address Line 2			
Address Last Line - City		**State**	**ZIP+4**
Previous Facility ID#			

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature	**Title**	**Date**

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
008A	T	R	F	1/1/1957	01/20/2021	449,400	Light Cycle Oill			
A										
A										
A										
A										
A										
A										
A										
A										
A										

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Aboveground Piping Construction & Corrosion Protection (3)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
	008A					
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Gary Bowman

Owner Signature	Title	Date
	President	1/21/21

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☐ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Northstar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
250 E. Adams Avenue				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President				
E-mail Address				
Gbowman@northtar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
008 A	Kristian Satterthwaite		5081	AFR	1557		

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

2630-PM-BECB0514 Rev. 6/2019
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
	Client ID#
51-33620 Facility ID #	Site ID#
	Account #
	Auth ID#
Phila Ref Point Breeze Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Contact Information
- ☐ Changed Facility Information
- ☐ Changed Facility Operator Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Added Tank(s) to Existing Facility*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed Product
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 W. Passyunk Ave				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19141-5299	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P	Sr	
Client Contact Title		**Phone**	**Ext**	
President		610 636-4574		
E-mail Address			**FAX**	
Gbowman@northtar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID#	Facility Name	Facility Kind

Facility Location Line 1 (if different than Site Location)	Facility Location Line 2

Facility Location Last Line - City	State	ZIP+4

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure	Feet	*--or--*	Meters
Horizontal Reference Datum Code	☐ North American Datum of 1927 ☐ North American Datum of 1983 ☐ World Geodetic System of 1984		
Horizontal Collection Method Code			
Reference Point Code			
Altitude	Feet	*--or--*	Meters
Altitude Datum Name	☐ The National Geodetic Vertical Datum of 1929 ☐ The North American Vertical Datum of 1988 (NAVD88)		
Altitude (Vertical) Location Datum Collection Method Code			
Geometric Type Code			
Data Collection Date			

Source Map Scale Number		Inch(es)	=	Feet
	--or--	Centimeter(s)	=	Meters

Flammable & Combustible Liquid Permit # (if applicable)
State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID#	Client Type / Code

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#

Individual Last Name	First Name	MI	Suffix	SSN

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2

Address Last Line – City	State	ZIP+4	Country

Client Contact Last Name	First Name	MI	Suffix

Client Contact Title	Phone	Ext

E-mail Address	FAX

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name			
Employer ID# (EIN) or SSN			
Mailing Address Line 1			
Mailing Address Line 2			
Address Last Line - City		**State**	**ZIP+4**
Previous Facility ID#			

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature	**Title**	**Date**

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
043A	T	R	F	1/1/1954	01/19/2021	2,818,200	Heavy Gas Oill			
A										
A										
A										
A										
A										
A										
A										
A										
A										

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Aboveground Piping Construction & Corrosion Protection (3)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
	043A					
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Gary Bowman

Owner Signature	Title	Date
	President	1/20/21

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☐ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Northstar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
250 E. Adams Avenue				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President				
E-mail Address				
Gbowman@northtar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
043 A	Kristian Satterthwaite		5081	AFR	1557		

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

2630-PM-BECB0514 Rev. 6/2019
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
	Client ID#
51-33620 Facility ID #	Site ID#
	Account #
	Auth ID#
Phila Ref Point Breeze Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 W. Passyunk Ave				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19141-5299	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P	Sr	
Client Contact Title		**Phone**	**Ext**	
President		610 636-4574		
E-mail Address			**FAX**	
Gbowman@northtar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**

Horizontal Accuracy Measure Feet --*or*-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --*or*-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--*or*-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name			
Employer ID# (EIN) or SSN			
Mailing Address Line 1			
Mailing Address Line 2			
Address Last Line - City		**State**	**ZIP+4**
Previous Facility ID#			

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature	**Title**	**Date**

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
044A	T	R	F	1/1/1957	01/27/2021	2,818,200	Vacuum Gas Oil			
A										
A										
A										
A										
A										
A										
A										
A										
A										

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
	044A					
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Gary Bowman

Owner Signature	Title	Date
	President	1/27/2021

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☐ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Northstar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
250 E. Adams Avenue				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President				
E-mail Address				
Gbowman@northtar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
044 A	Kristian Satterthwaite		5081	AFR	1557		

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

2630-PM-BECB0514 Rev. 6/2019
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
	Client ID#
51-33620 Facility ID #	Site ID#
	Account #
	Auth ID#
Phila Ref Point Breeze Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)
298341		☐ Volunteer Fire Co/EMS Org ☐ State Govt ☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC		

Individual Last Name	First Name	MI	Suffix	SSN
Bowman	Gary	P	Sr	

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2
3144 W. Passyunk Ave	

Address Last Line – City	State	ZIP+4	Country
Philadelphia	PA	19141-5299	USA

Client Contact Last Name	First Name	MI	Suffix
Bowman	Gary	P	Sr

Client Contact Title	Phone	Ext
President	610 636-4574	

E-mail Address	FAX
Gbowman@northstar.com	

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID#	Facility Name	Facility Kind

Facility Location Line 1 (if different than Site Location)	Facility Location Line 2

Facility Location Last Line - City	State	ZIP+4

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure	Feet	--*or*--	Meters
Horizontal Reference Datum Code	☐ North American Datum of 1927 ☐ North American Datum of 1983 ☐ World Geodetic System of 1984		
Horizontal Collection Method Code			
Reference Point Code			
Altitude	Feet	--*or*--	Meters
Altitude Datum Name	☐ The National Geodetic Vertical Datum of 1929 ☐ The North American Vertical Datum of 1988 (NAVD88)		
Altitude (Vertical) Location Datum Collection Method Code			
Geometric Type Code			
Data Collection Date			

Source Map Scale Number		Inch(es)	=	Feet
	--*or*--	Centimeter(s)	=	Meters

Flammable & Combustible Liquid Permit # (if applicable)
State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID#	Client Type / Code

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#

Individual Last Name	First Name	MI	Suffix	SSN

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2

Address Last Line – City	State	ZIP+4	Country

Client Contact Last Name	First Name	MI	Suffix

Client Contact Title	Phone	Ext

E-mail Address	FAX

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name			
Employer ID# (EIN) or SSN			
Mailing Address Line 1			
Mailing Address Line 2			
Address Last Line - City		**State**	**ZIP+4**
Previous Facility ID#			

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature	**Title**	**Date**

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
074A	C	R	F	1/1/1953	03/25/2021	2,935,800	Heavy Gas Oil			
A										
A										
A										
A										
A										
A										
A										
A										
A										

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Aboveground Piping Construction & Corrosion Protection (3)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33620 Facility Name Phila Ref Point Breeze

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
	074A					
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐

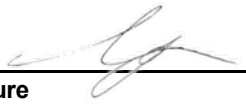
IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Gary Bowman

Owner Signature	Title	Date
	President	4/20/2021

Information & Invoices should be sent to:

- ☐ **Tank Owner Contact**
- ☐ **Site Contact**
- ☒ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Northstar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2			
250 E. Adams Avenue				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President				
E-mail Address				
Gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
074 A	**Kristian Satterthwaite**		**5081**	**AFR**	**1557**		

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

Appendix G

Laboratory Reports

ANALYTICAL REPORT

Lab Number:	L2126144
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/02/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126144-01	PB-666-14-SS01	SOIL	PHILADELPHIA, PA	05/18/21 09:05	05/18/21
L2126144-02	PB-666-12-SS01	SOIL	PHILADELPHIA, PA	05/18/21 09:55	05/18/21
L2126144-03	PB-666-11-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:05	05/18/21
L2126144-04	PB-666-07-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:19	05/18/21
L2126144-05	PB-666-04-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:35	05/18/21
L2126144-06	PB-666-02-SS01	SOIL	PHILADELPHIA, PA	05/18/21 10:50	05/18/21
L2126144-07	PB-666-01-SS01	SOIL	PHILADELPHIA, PA	05/18/21 11:10	05/18/21
L2126144-08	PB-663-11-SS01	SOIL	PHILADELPHIA, PA	05/18/21 11:50	05/18/21
L2126144-09	PB-666-03-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:05	05/18/21
L2126144-10	PB-666-15-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:15	05/18/21
L2126144-11	PB-666-16-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:30	05/18/21
L2126144-12	PB-666-17-SS01	SOIL	PHILADELPHIA, PA	05/18/21 12:45	05/18/21
L2126144-13	PB-666-18-SS01	SOIL	PHILADELPHIA, PA	05/18/21 13:20	05/18/21
L2126144-14	PB-666-19-SS01	SOIL	PHILADELPHIA, PA	05/18/21 13:35	05/18/21
L2126144-15	PB-666-20-SS01	SOIL	PHILADELPHIA, PA	05/18/21 13:50	05/18/21
L2126144-16	PB-666-21-SS01	SOIL	PHILADELPHIA, PA	05/18/21 14:00	05/18/21
L2126144-17	PB-666-22-SS01	SOIL	PHILADELPHIA, PA	05/18/21 14:40	05/18/21
L2126144-18	DUP-01	SOIL	PHILADELPHIA, PA	05/18/21 14:05	05/18/21
L2126144-19	FB-210518-1	WATER	PHILADELPHIA, PA	05/18/21 14:45	05/18/21
L2126144-20	FB-210518-2	WATER	PHILADELPHIA, PA	05/18/21 14:50	05/18/21
L2126144-21	TB-210518	WATER	PHILADELPHIA, PA	05/18/21 00:00	05/18/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L2126144-01: The collection date and time on the chain of custody was 18-MAY-21 09:05; however, the collection date/time on the container label was 18-MAY-21 09:15. At the client's request, the collection date/time is reported as 18-MAY-21 09:05.

L2126144-08: The sample identified as "PB-666-11-SS01" on the chain of custody was identified as "PB-663-11-SS01" on the container label. At the client's request, the sample is reported as "PB-663-11-SS01".

L2126144-21: At the client's request, the Trip Blank was analyzed.

Volatile Organics

L2126144-05: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2126144-16: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (38%) and the surrogate recovery for 4-bromofluorobenzene (159%) were outside the acceptance criteria in the low-level analysis. A second low-level vial was analyzed, but yielded no internal standard recoveries. Since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2126144-21: The pH of the sample was greater than two; however, the sample was analyzed within the method required holding time.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Case Narrative (continued)

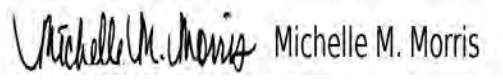
Semivolatile Organics by SIM

L2126144-01D, -02D, -03D, -06D, -08D, -10D, and -11D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

L2126144-03D, -04D, -05D, -07D, -12D, and -17D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2126144-06D and -10D: The sample has elevated detection limits due to the dilution required by the matrix interferences encountered during the concentration of the sample and the analytical dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 06/02/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 17:44
Analyst: MV
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00024	1
Benzene	0.0013		mg/kg	0.00059	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.0023		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00034	1
Ethylbenzene	0.020		mg/kg	0.0012	0.00016	1
p/m-Xylene	0.066		mg/kg	0.0023	0.00066	1
o-Xylene	0.024		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.090		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.0011	J	mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.00048	J	mg/kg	0.0023	0.00023	1
1,2,4-Trimethylbenzene	0.0011	J	mg/kg	0.0023	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 23:36
Analyst: MV
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.24	0.024	1
Benzene	0.45		mg/kg	0.061	0.020	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.031	1
Toluene	2.6		mg/kg	0.12	0.066	1
1,2-Dibromoethane	ND		mg/kg	0.061	0.036	1
Ethylbenzene	2.0		mg/kg	0.12	0.017	1
p/m-Xylene	16.		mg/kg	0.24	0.068	1
o-Xylene	8.1		mg/kg	0.12	0.036	1
Xylenes, Total	24.		mg/kg	0.12	0.036	1
Isopropylbenzene	1.2		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	11.		mg/kg	0.24	0.024	1
1,2,4-Trimethylbenzene	20.		mg/kg	0.24	0.041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03 Date Collected: 05/18/21 10:05
Client ID: PB-666-11-SS01 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 22:46
Analyst: MV
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	3.6		mg/kg	0.058	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.030	1
Toluene	0.095	J	mg/kg	0.12	0.063	1
1,2-Dibromoethane	ND		mg/kg	0.058	0.034	1
Ethylbenzene	0.28		mg/kg	0.12	0.016	1
p/m-Xylene	0.29		mg/kg	0.23	0.065	1
o-Xylene	0.078	J	mg/kg	0.12	0.034	1
Xylenes, Total	0.37	J	mg/kg	0.12	0.034	1
Isopropylbenzene	7.1		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	0.061	J	mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	0.22	J	mg/kg	0.23	0.039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 20:57
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	ND		mg/kg	0.058	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.030	1
Toluene	ND		mg/kg	0.12	0.063	1
1,2-Dibromoethane	ND		mg/kg	0.058	0.034	1
Ethylbenzene	0.041	J	mg/kg	0.12	0.016	1
p/m-Xylene	0.15	J	mg/kg	0.23	0.065	1
o-Xylene	0.62		mg/kg	0.12	0.034	1
Xylenes, Total	0.77	J	mg/kg	0.12	0.034	1
Isopropylbenzene	0.15		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	5.5		mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	6.4		mg/kg	0.23	0.039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 23:11
Analyst: MV
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	0.015	J	mg/kg	0.025	0.0083	1
1,2-Dichloroethane	ND		mg/kg	0.050	0.013	1
Toluene	0.057		mg/kg	0.050	0.027	1
1,2-Dibromoethane	ND		mg/kg	0.025	0.015	1
Ethylbenzene	0.052		mg/kg	0.050	0.0070	1
p/m-Xylene	0.27		mg/kg	0.10	0.028	1
o-Xylene	0.18		mg/kg	0.050	0.014	1
Xylenes, Total	0.45		mg/kg	0.050	0.014	1
Isopropylbenzene	0.024	J	mg/kg	0.050	0.0054	1
1,3,5-Trimethylbenzene	0.61		mg/kg	0.10	0.0096	1
1,2,4-Trimethylbenzene	1.3		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/21/21 23:40
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00025	1
Benzene	0.00023	J	mg/kg	0.00061	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	0.00098	J	mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00061	0.00036	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00069	1
o-Xylene	0.00045	J	mg/kg	0.0012	0.00036	1
Xylenes, Total	0.00045	J	mg/kg	0.0012	0.00036	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.00043	J	mg/kg	0.0024	0.00024	1
1,2,4-Trimethylbenzene	0.00094	J	mg/kg	0.0024	0.00041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/24/21 11:16
Analyst: AJK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	ND		mg/kg	0.00053	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00027	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00053	0.00031	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00059	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 16:45
Analyst: JC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	ND		mg/kg	0.00095	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00028	1
Ethylbenzene	ND		mg/kg	0.00095	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00053	1
o-Xylene	ND		mg/kg	0.00095	0.00028	1
Xylenes, Total	ND		mg/kg	0.00095	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 17:11
Analyst: JC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	0.00063		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	0.0062		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	0.0033		mg/kg	0.0013	0.00018	1
p/m-Xylene	0.019		mg/kg	0.0025	0.00071	1
o-Xylene	0.012		mg/kg	0.0013	0.00037	1
Xylenes, Total	0.031		mg/kg	0.0013	0.00037	1
Isopropylbenzene	0.0011	J	mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.011		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.035		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 17:36
Analyst: JC
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00098	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 18:01
Analyst: JC
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	ND		mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00096	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00096	0.00028	1
Xylenes, Total	ND		mg/kg	0.00096	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 18:26
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00061	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0022	0.00062	1
o-Xylene	ND		mg/kg	0.0011	0.00032	1
Xylenes, Total	ND		mg/kg	0.0011	0.00032	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12
Client ID: PB-666-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 18:51
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0029	0.00082	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	ND		mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 19:16
Analyst: JC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	0.00037	J	mg/kg	0.00077	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00040	1
Toluene	ND		mg/kg	0.0015	0.00084	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00086	1
o-Xylene	ND		mg/kg	0.0015	0.00045	1
Xylenes, Total	ND		mg/kg	0.0015	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 19:41
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00067	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.0013		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00067	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00075	1
o-Xylene	ND		mg/kg	0.0013	0.00039	1
Xylenes, Total	ND		mg/kg	0.0013	0.00039	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15 D2 Date Collected: 05/18/21 13:50
Client ID: PB-666-20-SS01 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/24/21 12:07
Analyst: AJK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.61	0.061	2.5
Benzene	5.8		mg/kg	0.15	0.050	2.5
1,2-Dichloroethane	ND		mg/kg	0.30	0.078	2.5
Toluene	1100	E	mg/kg	0.30	0.16	2.5
1,2-Dibromoethane	ND		mg/kg	0.15	0.089	2.5
Ethylbenzene	1.9		mg/kg	0.30	0.043	2.5
p/m-Xylene	8.1		mg/kg	0.61	0.17	2.5
o-Xylene	4.2		mg/kg	0.30	0.088	2.5
Xylenes, Total	12.		mg/kg	0.30	0.088	2.5
Isopropylbenzene	0.81		mg/kg	0.30	0.033	2.5
1,3,5-Trimethylbenzene	3.5		mg/kg	0.61	0.058	2.5
1,2,4-Trimethylbenzene	6.6		mg/kg	0.61	0.10	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15 D
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/23/21 22:13
Analyst: JC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Toluene	1500		mg/kg	12	6.6	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/20/21 22:21
Analyst: MV
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0049	0.00049	1
Benzene	ND		mg/kg	0.0012	0.00040	1
1,2-Dichloroethane	ND		mg/kg	0.0024	0.00063	1
Toluene	ND		mg/kg	0.0024	0.0013	1
1,2-Dibromoethane	ND		mg/kg	0.0012	0.00071	1
Ethylbenzene	ND		mg/kg	0.0024	0.00034	1
p/m-Xylene	ND		mg/kg	0.0049	0.0014	1
o-Xylene	ND		mg/kg	0.0024	0.00071	1
Xylenes, Total	ND		mg/kg	0.0024	0.00071	1
Isopropylbenzene	ND		mg/kg	0.0024	0.00026	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0049	0.00047	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0049	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**159**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/21/21 23:15
Analyst: NLK
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.35	0.035	1
Benzene	0.067	J	mg/kg	0.088	0.029	1
1,2-Dichloroethane	ND		mg/kg	0.18	0.045	1
Toluene	0.10	J	mg/kg	0.18	0.096	1
1,2-Dibromoethane	ND		mg/kg	0.088	0.052	1
Ethylbenzene	0.048	J	mg/kg	0.18	0.025	1
p/m-Xylene	0.10	J	mg/kg	0.35	0.098	1
o-Xylene	ND		mg/kg	0.18	0.051	1
Xylenes, Total	0.10	J	mg/kg	0.18	0.051	1
Isopropylbenzene	ND		mg/kg	0.18	0.019	1
1,3,5-Trimethylbenzene	0.044	J	mg/kg	0.35	0.034	1
1,2,4-Trimethylbenzene	0.088	J	mg/kg	0.35	0.059	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/24/21 11:41
Analyst: AJK
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0053	0.00053	1
Benzene	ND		mg/kg	0.0013	0.00044	1
1,2-Dichloroethane	ND		mg/kg	0.0026	0.00068	1
Toluene	ND		mg/kg	0.0026	0.0014	1
1,2-Dibromoethane	ND		mg/kg	0.0013	0.00077	1
Ethylbenzene	0.00056	J	mg/kg	0.0026	0.00037	1
p/m-Xylene	ND		mg/kg	0.0053	0.0015	1
o-Xylene	ND		mg/kg	0.0026	0.00077	1
Xylenes, Total	ND		mg/kg	0.0026	0.00077	1
Isopropylbenzene	0.0039		mg/kg	0.0026	0.00029	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0053	0.00051	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0053	0.00088	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/21/21 07:36
Analyst: MKS
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	0.0030		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00072	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19
Client ID: FB-210518-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/21/21 11:44
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19 Date Collected: 05/18/21 14:45
Client ID: FB-210518-1 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 09:18
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20
Client ID: FB-210518-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/21/21 11:50
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20 Date Collected: 05/18/21 14:50
Client ID: FB-210518-2 Date Received: 05/18/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 09:42
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	80		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-21
Client ID: TB-210518
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 00:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/21/21 11:57
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-21
Client ID: TB-210518
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 00:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 10:08
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/21/21 10:42
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/21/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 19-21 Batch: WG1501981-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/20/21 16:03
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,16 Batch: WG1502132-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/20/21 16:03
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02-03,05 Batch: WG1502133-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/21/21 07:11
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 18 Batch: WG1502164-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/21/21 16:08
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 16 Batch: WG1502604-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/21/21 16:08
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1502605-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/23/21 15:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07-14 Batch: WG1502761-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/24/21 10:51
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 15 Batch: WG1502764-10					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/23/21 15:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04,15 Batch: WG1502764-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/24/21 10:51
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,17 Batch: WG1503461-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-21 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 19-21 Batch: WG1501981-2								
1,2-Dibromoethane	93		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,16 Batch: WG1502132-3 WG1502132-4								
Methyl tert butyl ether	112		114		66-130	2		30
Benzene	114		112		70-130	2		30
1,2-Dichloroethane	114		114		70-130	0		30
Toluene	114		111		70-130	3		30
1,2-Dibromoethane	105		106		70-130	1		30
Ethylbenzene	114		111		70-130	3		30
p/m-Xylene	104		102		70-130	2		30
o-Xylene	104		101		70-130	3		30
Isopropylbenzene	118		113		70-130	4		30
1,3,5-Trimethylbenzene	113		110		70-130	3		30
1,2,4-Trimethylbenzene	111		108		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		108		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02-03,05 Batch: WG1502133-3 WG1502133-4								
Methyl tert butyl ether	112		114		66-130	2		30
Benzene	114		112		70-130	2		30
1,2-Dichloroethane	114		114		70-130	0		30
Toluene	114		111		70-130	3		30
1,2-Dibromoethane	105		106		70-130	1		30
Ethylbenzene	114		111		70-130	3		30
p/m-Xylene	104		102		70-130	2		30
o-Xylene	104		101		70-130	3		30
Isopropylbenzene	118		113		70-130	4		30
1,3,5-Trimethylbenzene	113		110		70-130	3		30
1,2,4-Trimethylbenzene	111		108		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		108		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 18 Batch: WG1502164-3 WG1502164-4								
Methyl tert butyl ether	110		109		66-130	1		30
Benzene	105		106		70-130	1		30
1,2-Dichloroethane	107		106		70-130	1		30
Toluene	105		106		70-130	1		30
1,2-Dibromoethane	102		102		70-130	0		30
Ethylbenzene	104		105		70-130	1		30
p/m-Xylene	96		97		70-130	1		30
o-Xylene	96		96		70-130	0		30
Isopropylbenzene	106		108		70-130	2		30
1,3,5-Trimethylbenzene	103		105		70-130	2		30
1,2,4-Trimethylbenzene	102		104		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 16 Batch: WG1502604-3 WG1502604-4								
Methyl tert butyl ether	111		111		66-130	0		30
Benzene	108		107		70-130	1		30
1,2-Dichloroethane	109		109		70-130	0		30
Toluene	110		107		70-130	3		30
1,2-Dibromoethane	105		103		70-130	2		30
Ethylbenzene	107		104		70-130	3		30
p/m-Xylene	99		96		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	109		106		70-130	3		30
1,3,5-Trimethylbenzene	107		105		70-130	2		30
1,2,4-Trimethylbenzene	106		103		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1502605-3 WG1502605-4								
Methyl tert butyl ether	111		111		66-130	0		30
Benzene	108		107		70-130	1		30
1,2-Dichloroethane	109		109		70-130	0		30
Toluene	110		107		70-130	3		30
1,2-Dibromoethane	105		103		70-130	2		30
Ethylbenzene	107		104		70-130	3		30
p/m-Xylene	99		96		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	109		106		70-130	3		30
1,3,5-Trimethylbenzene	107		105		70-130	2		30
1,2,4-Trimethylbenzene	106		103		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07-14 Batch: WG1502761-3 WG1502761-4								
Methyl tert butyl ether	117		115		66-130	2		30
Benzene	112		111		70-130	1		30
1,2-Dichloroethane	113		110		70-130	3		30
Toluene	112		111		70-130	1		30
1,2-Dibromoethane	108		106		70-130	2		30
Ethylbenzene	110		109		70-130	1		30
p/m-Xylene	102		101		70-130	1		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	112		112		70-130	0		30
1,3,5-Trimethylbenzene	109		110		70-130	1		30
1,2,4-Trimethylbenzene	108		107		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	106		105		70-130
4-Bromofluorobenzene	115		115		70-130
Dibromofluoromethane	93		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04,15 Batch: WG1502764-3 WG1502764-4								
Methyl tert butyl ether	117		115		66-130	2		30
Benzene	112		111		70-130	1		30
1,2-Dichloroethane	113		110		70-130	3		30
Toluene	112		111		70-130	1		30
1,2-Dibromoethane	108		106		70-130	2		30
Ethylbenzene	110		109		70-130	1		30
p/m-Xylene	102		101		70-130	1		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	112		112		70-130	0		30
1,3,5-Trimethylbenzene	109		110		70-130	1		30
1,2,4-Trimethylbenzene	108		107		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	106		105		70-130
4-Bromofluorobenzene	114		115		70-130
Dibromofluoromethane	93		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 15 Batch: WG1502764-8 WG1502764-9								
Methyl tert butyl ether	121		116		66-130	4		30
Benzene	108		113		70-130	5		30
1,2-Dichloroethane	113		111		70-130	2		30
Toluene	106		112		70-130	6		30
1,2-Dibromoethane	112		108		70-130	4		30
Ethylbenzene	104		110		70-130	6		30
p/m-Xylene	96		101		70-130	5		30
o-Xylene	97		102		70-130	5		30
Isopropylbenzene	104		112		70-130	7		30
1,3,5-Trimethylbenzene	103		110		70-130	7		30
1,2,4-Trimethylbenzene	102		107		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		100		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	113		114		70-130
Dibromofluoromethane	93		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,17 Batch: WG1503461-3 WG1503461-4								
Methyl tert butyl ether	121		116		66-130	4		30
Benzene	108		113		70-130	5		30
1,2-Dichloroethane	113		111		70-130	2		30
Toluene	106		112		70-130	6		30
1,2-Dibromoethane	112		108		70-130	4		30
Ethylbenzene	104		110		70-130	6		30
p/m-Xylene	96		101		70-130	5		30
o-Xylene	97		102		70-130	5		30
Isopropylbenzene	104		112		70-130	7		30
1,3,5-Trimethylbenzene	103		110		70-130	7		30
1,2,4-Trimethylbenzene	102		107		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		100		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	113		114		70-130
Dibromofluoromethane	93		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-21 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01 D
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 17:58
Analyst: DV
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.4		mg/kg	0.42	0.075	50
Fluorene	3.1		mg/kg	0.42	0.050	50
Phenanthrene	30.		mg/kg	0.42	0.036	50
Anthracene	7.9		mg/kg	0.42	0.033	50
Pyrene	28.		mg/kg	0.42	0.029	50
Benzo(a)anthracene	19.		mg/kg	0.42	0.040	50
Chrysene	15.		mg/kg	0.42	0.031	50
Benzo(b)fluoranthene	20.		mg/kg	0.42	0.040	50
Benzo(a)pyrene	16.		mg/kg	0.42	0.050	50
Benzo(ghi)perylene	8.1		mg/kg	0.42	0.036	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02 D
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 18:14
Analyst: DV
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	160		mg/kg	4.8	0.87	500
Fluorene	53.		mg/kg	4.8	0.58	500
Phenanthrene	270		mg/kg	4.8	0.41	500
Anthracene	74.		mg/kg	4.8	0.39	500
Pyrene	190		mg/kg	4.8	0.34	500
Benzo(a)anthracene	110		mg/kg	4.8	0.46	500
Chrysene	86.		mg/kg	4.8	0.36	500
Benzo(b)fluoranthene	120		mg/kg	4.8	0.46	500
Benzo(a)pyrene	90.		mg/kg	4.8	0.58	500
Benzo(ghi)perylene	50.		mg/kg	4.8	0.41	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03 D
Client ID: PB-666-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 18:31
Analyst: DV
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.4	J	mg/kg	4.2	0.76	500
Fluorene	18.		mg/kg	4.2	0.50	500
Phenanthrene	72.		mg/kg	4.2	0.36	500
Anthracene	41.		mg/kg	4.2	0.34	500
Pyrene	180		mg/kg	4.2	0.29	500
Benzo(a)anthracene	130		mg/kg	4.2	0.40	500
Chrysene	110		mg/kg	4.2	0.32	500
Benzo(b)fluoranthene	170		mg/kg	4.2	0.40	500
Benzo(a)pyrene	140		mg/kg	4.2	0.50	500
Benzo(ghi)perylene	84.		mg/kg	4.2	0.36	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04 D
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 15:42
Analyst: JJW
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.40		mg/kg	0.048	0.0086	5
Fluorene	ND		mg/kg	0.048	0.0058	5
Phenanthrene	0.54		mg/kg	0.048	0.0041	5
Anthracene	ND		mg/kg	0.048	0.0038	5
Pyrene	0.066		mg/kg	0.048	0.0034	5
Benzo(a)anthracene	0.0098	J	mg/kg	0.048	0.0046	5
Chrysene	0.018	J	mg/kg	0.048	0.0036	5
Benzo(b)fluoranthene	0.0091	J	mg/kg	0.048	0.0046	5
Benzo(a)pyrene	0.0060	J	mg/kg	0.048	0.0058	5
Benzo(ghi)perylene	0.12		mg/kg	0.048	0.0041	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**143**	Q	23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05 D
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 17:04
Analyst: JJW
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.12		mg/kg	0.073	0.013	10
Fluorene	0.020	J	mg/kg	0.073	0.0088	10
Phenanthrene	0.19		mg/kg	0.073	0.0062	10
Anthracene	ND		mg/kg	0.073	0.0058	10
Pyrene	0.17		mg/kg	0.073	0.0051	10
Benzo(a)anthracene	0.17		mg/kg	0.073	0.0069	10
Chrysene	0.12		mg/kg	0.073	0.0055	10
Benzo(b)fluoranthene	0.23		mg/kg	0.073	0.0069	10
Benzo(a)pyrene	0.33		mg/kg	0.073	0.0088	10
Benzo(ghi)perylene	7.2		mg/kg	0.073	0.0062	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	31		30-120
4-Terphenyl-d14	30		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06 D
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 17:20
Analyst: JJW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.30	0.055	20
Fluorene	0.050	J	mg/kg	0.30	0.037	20
Phenanthrene	0.60		mg/kg	0.30	0.026	20
Anthracene	ND		mg/kg	0.30	0.024	20
Pyrene	0.95		mg/kg	0.30	0.021	20
Benzo(a)anthracene	1.0		mg/kg	0.30	0.029	20
Chrysene	0.74		mg/kg	0.30	0.023	20
Benzo(b)fluoranthene	1.4		mg/kg	0.30	0.029	20
Benzo(a)pyrene	1.0		mg/kg	0.30	0.037	20
Benzo(ghi)perylene	2.8		mg/kg	0.30	0.026	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07 D
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 15:58
Analyst: JJW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.025	J	mg/kg	0.038	0.0068	5
Fluorene	0.025	J	mg/kg	0.038	0.0045	5
Phenanthrene	0.29		mg/kg	0.038	0.0032	5
Anthracene	0.086		mg/kg	0.038	0.0030	5
Pyrene	0.48		mg/kg	0.038	0.0026	5
Benzo(a)anthracene	0.36		mg/kg	0.038	0.0036	5
Chrysene	0.25		mg/kg	0.038	0.0028	5
Benzo(b)fluoranthene	0.40		mg/kg	0.038	0.0036	5
Benzo(a)pyrene	0.30		mg/kg	0.038	0.0045	5
Benzo(ghi)perylene	0.13		mg/kg	0.038	0.0032	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**146**	Q	23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08 D
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 18:47
Analyst: DV
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	6.1		mg/kg	1.8	0.32	200
Fluorene	11.		mg/kg	1.8	0.22	200
Phenanthrene	100		mg/kg	1.8	0.15	200
Anthracene	28.		mg/kg	1.8	0.14	200
Pyrene	87.		mg/kg	1.8	0.13	200
Benzo(a)anthracene	57.		mg/kg	1.8	0.17	200
Chrysene	46.		mg/kg	1.8	0.14	200
Benzo(b)fluoranthene	55.		mg/kg	1.8	0.17	200
Benzo(a)pyrene	46.		mg/kg	1.8	0.22	200
Benzo(ghi)perylene	25.		mg/kg	1.8	0.15	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09 D
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:36
Analyst: JJW
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.26		mg/kg	0.025	0.0045	2
Fluorene	0.048		mg/kg	0.025	0.0030	2
Phenanthrene	1.0		mg/kg	0.025	0.0021	2
Anthracene	0.23		mg/kg	0.025	0.0020	2
Pyrene	1.9		mg/kg	0.025	0.0018	2
Benzo(a)anthracene	1.5		mg/kg	0.025	0.0024	2
Chrysene	1.2		mg/kg	0.025	0.0019	2
Benzo(b)fluoranthene	1.8		mg/kg	0.025	0.0024	2
Benzo(a)pyrene	1.4		mg/kg	0.025	0.0030	2
Benzo(ghi)perylene	0.72		mg/kg	0.025	0.0021	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**130**	Q	23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10 D
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:03
Analyst: DV
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.8	J	mg/kg	5.0	0.91	600
Fluorene	ND		mg/kg	5.0	0.61	600
Phenanthrene	1.2	J	mg/kg	5.0	0.43	600
Anthracene	0.81	J	mg/kg	5.0	0.40	600
Pyrene	47.		mg/kg	5.0	0.35	600
Benzo(a)anthracene	15.		mg/kg	5.0	0.48	600
Chrysene	53.		mg/kg	5.0	0.38	600
Benzo(b)fluoranthene	18.		mg/kg	5.0	0.48	600
Benzo(a)pyrene	38.		mg/kg	5.0	0.61	600
Benzo(ghi)perylene	19.		mg/kg	5.0	0.43	600

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11 D
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:20
Analyst: DV
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.8		mg/kg	0.40	0.072	50
Fluorene	1.3		mg/kg	0.40	0.048	50
Phenanthrene	17.		mg/kg	0.40	0.034	50
Anthracene	4.6		mg/kg	0.40	0.032	50
Pyrene	25.		mg/kg	0.40	0.028	50
Benzo(a)anthracene	18.		mg/kg	0.40	0.038	50
Chrysene	14.		mg/kg	0.40	0.030	50
Benzo(b)fluoranthene	20.		mg/kg	0.40	0.038	50
Benzo(a)pyrene	15.		mg/kg	0.40	0.048	50
Benzo(ghi)perylene	8.6		mg/kg	0.40	0.034	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12 D
Client ID: PB-666-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 12:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:53
Analyst: JJW
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/30/21 09:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.021		mg/kg	0.019	0.0035	2
Fluorene	0.022		mg/kg	0.019	0.0023	2
Phenanthrene	0.30		mg/kg	0.019	0.0016	2
Anthracene	0.089		mg/kg	0.019	0.0015	2
Pyrene	0.40		mg/kg	0.019	0.0013	2
Benzo(a)anthracene	0.28		mg/kg	0.019	0.0018	2
Chrysene	0.21		mg/kg	0.019	0.0014	2
Benzo(b)fluoranthene	0.32		mg/kg	0.019	0.0018	2
Benzo(a)pyrene	0.24		mg/kg	0.019	0.0023	2
Benzo(ghi)perylene	0.12		mg/kg	0.019	0.0016	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 13:14
Analyst: JJW
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0022	J	mg/kg	0.0083	0.0015	1
Fluorene	0.0032	J	mg/kg	0.0083	0.0010	1
Phenanthrene	0.031		mg/kg	0.0083	0.00071	1
Anthracene	0.0085		mg/kg	0.0083	0.00067	1
Pyrene	0.046		mg/kg	0.0083	0.00058	1
Benzo(a)anthracene	0.035		mg/kg	0.0083	0.00079	1
Chrysene	0.045		mg/kg	0.0083	0.00062	1
Benzo(b)fluoranthene	0.031		mg/kg	0.0083	0.00079	1
Benzo(a)pyrene	0.029		mg/kg	0.0083	0.0010	1
Benzo(ghi)perylene	0.016		mg/kg	0.0083	0.00071	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**130**	Q	23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 13:31
Analyst: JJW
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0098		mg/kg	0.0093	0.0017	1
Fluorene	0.0020	J	mg/kg	0.0093	0.0011	1
Phenanthrene	0.026		mg/kg	0.0093	0.00079	1
Anthracene	0.0095		mg/kg	0.0093	0.00074	1
Pyrene	0.040		mg/kg	0.0093	0.00065	1
Benzo(a)anthracene	0.036		mg/kg	0.0093	0.00088	1
Chrysene	0.036		mg/kg	0.0093	0.00070	1
Benzo(b)fluoranthene	0.068		mg/kg	0.0093	0.00088	1
Benzo(a)pyrene	0.043		mg/kg	0.0093	0.0011	1
Benzo(ghi)perylene	0.047		mg/kg	0.0093	0.00079	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**140**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 13:47
Analyst: JJW
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.034		mg/kg	0.0093	0.0017	1
Fluorene	ND		mg/kg	0.0093	0.0011	1
Phenanthrene	0.051		mg/kg	0.0093	0.00079	1
Anthracene	0.015		mg/kg	0.0093	0.00074	1
Pyrene	0.027		mg/kg	0.0093	0.00065	1
Benzo(a)anthracene	0.018		mg/kg	0.0093	0.00088	1
Chrysene	0.012		mg/kg	0.0093	0.00070	1
Benzo(b)fluoranthene	0.017		mg/kg	0.0093	0.00088	1
Benzo(a)pyrene	0.013		mg/kg	0.0093	0.0011	1
Benzo(ghi)perylene	ND		mg/kg	0.0093	0.00079	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**123**	Q	23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:04
Analyst: JJW
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0034	J	mg/kg	0.012	0.0022	1
Fluorene	ND		mg/kg	0.012	0.0015	1
Phenanthrene	0.0063	J	mg/kg	0.012	0.0010	1
Anthracene	0.0034	J	mg/kg	0.012	0.00098	1
Pyrene	0.023		mg/kg	0.012	0.00086	1
Benzo(a)anthracene	0.031		mg/kg	0.012	0.0012	1
Chrysene	0.029		mg/kg	0.012	0.00092	1
Benzo(b)fluoranthene	0.061		mg/kg	0.012	0.0012	1
Benzo(a)pyrene	0.037		mg/kg	0.012	0.0015	1
Benzo(ghi)perylene	0.032		mg/kg	0.012	0.0010	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	51		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17 D
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 15:09
Analyst: JJW
Percent Solids: 54%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.060	0.011	5
Fluorene	2.5		mg/kg	0.060	0.0072	5
Phenanthrene	1.6		mg/kg	0.060	0.0051	5
Anthracene	ND		mg/kg	0.060	0.0048	5
Pyrene	1.8		mg/kg	0.060	0.0042	5
Benzo(a)anthracene	0.59		mg/kg	0.060	0.0057	5
Chrysene	0.99		mg/kg	0.060	0.0045	5
Benzo(b)fluoranthene	0.17		mg/kg	0.060	0.0057	5
Benzo(a)pyrene	0.31		mg/kg	0.060	0.0072	5
Benzo(ghi)perylene	0.11		mg/kg	0.060	0.0051	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**121**	Q	23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 14:20
Analyst: JJW
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.039		mg/kg	0.0086	0.0016	1
Fluorene	0.037		mg/kg	0.0086	0.0010	1
Phenanthrene	0.13		mg/kg	0.0086	0.00073	1
Anthracene	0.057		mg/kg	0.0086	0.00069	1
Pyrene	0.15		mg/kg	0.0086	0.00060	1
Benzo(a)anthracene	0.13		mg/kg	0.0086	0.00082	1
Chrysene	0.089		mg/kg	0.0086	0.00065	1
Benzo(b)fluoranthene	0.15		mg/kg	0.0086	0.00082	1
Benzo(a)pyrene	0.11		mg/kg	0.0086	0.0010	1
Benzo(ghi)perylene	0.054		mg/kg	0.0086	0.00073	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	42		30-120
4-Terphenyl-d14	42		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19
Client ID: FB-210518-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 13:27
Analyst: DV
Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.09	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	81		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20
Client ID: FB-210518-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 14:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 14:06
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	70		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 11:50
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19-20 Batch: WG1502995-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	60		10-120
4-Terphenyl-d14	106		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/30/21 17:50
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 05/29/21 11:55

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-12 Batch: WG1505342-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00053
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	0.00063	J	mg/kg	0.0066	0.00063
Chrysene	ND		mg/kg	0.0066	0.00050
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00063
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	101		25-120
Phenol-d6	110		10-120
Nitrobenzene-d5	**127**	Q	23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	85		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/31/21 12:25
Analyst: JJW

Extraction Method: EPA 3546
Extraction Date: 05/30/21 10:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13-18 Batch: WG1505502-1					
Naphthalene	ND		mg/kg	0.0065	0.0012
Fluorene	ND		mg/kg	0.0065	0.00078
Phenanthrene	0.0044	J	mg/kg	0.0065	0.00055
Anthracene	0.0012	J	mg/kg	0.0065	0.00052
Pyrene	0.0031	J	mg/kg	0.0065	0.00045
Benzo(a)anthracene	0.0012	J	mg/kg	0.0065	0.00061
Chrysene	0.00068	J	mg/kg	0.0065	0.00048
Benzo(b)fluoranthene	0.00071	J	mg/kg	0.0065	0.00061
Benzo(a)pyrene	ND		mg/kg	0.0065	0.00078
Benzo(ghi)perylene	ND		mg/kg	0.0065	0.00055

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	90		25-120
Phenol-d6	96		10-120
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	65		30-120
2,4,6-Tribromophenol	85		10-136
4-Terphenyl-d14	78		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19-20 Batch: WG1502995-2 WG1502995-3								
Naphthalene	78		62		40-140	23		40
Fluorene	90		79		40-140	13		40
Phenanthrene	93		86		40-140	8		40
Anthracene	95		88		40-140	8		40
Pyrene	97		95		26-127	2		40
Benzo(a)anthracene	95		94		40-140	1		40
Chrysene	95		94		40-140	1		40
Benzo(b)fluoranthene	102		100		40-140	2		40
Benzo(a)pyrene	100		99		40-140	1		40
Benzo(ghi)perylene	95		92		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	62		44		21-120
Phenol-d6	54		40		10-120
Nitrobenzene-d5	81		62		23-120
2-Fluorobiphenyl	77		64		15-120
2,4,6-Tribromophenol	74		67		10-120
4-Terphenyl-d14	96		93		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-12 Batch: WG1505342-2 WG1505342-3								
Naphthalene	62		81		40-140	27		50
Fluorene	68		86		40-140	23		50
Phenanthrene	67		87		40-140	26		50
Anthracene	73		95		40-140	26		50
Pyrene	67		87		35-142	26		50
Benzo(a)anthracene	69		89		40-140	25		50
Chrysene	60		78		40-140	26		50
Benzo(b)fluoranthene	74		93		40-140	23		50
Benzo(a)pyrene	71		92		40-140	26		50
Benzo(ghi)perylene	68		87		40-140	25		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	75		97		25-120
Phenol-d6	80		105		10-120
Nitrobenzene-d5	94		**123**	Q	23-120
2-Fluorobiphenyl	53		69		30-120
2,4,6-Tribromophenol	68		87		10-136
4-Terphenyl-d14	60		78		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13-18 Batch: WG1505502-2 WG1505502-3								
Naphthalene	86		82		40-140	5		50
Fluorene	98		89		40-140	10		50
Phenanthrene	95		87		40-140	9		50
Anthracene	105		95		40-140	10		50
Pyrene	97		88		35-142	10		50
Benzo(a)anthracene	103		90		40-140	13		50
Chrysene	81		74		40-140	9		50
Benzo(b)fluoranthene	103		99		40-140	4		50
Benzo(a)pyrene	103		94		40-140	9		50
Benzo(ghi)perylene	96		89		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	105		101		25-120
Phenol-d6	116		112		10-120
Nitrobenzene-d5	**133**	Q	**130**	Q	23-120
2-Fluorobiphenyl	76		73		30-120
2,4,6-Tribromophenol	101		92		10-136
4-Terphenyl-d14	85		80		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	103		mg/kg	2.42	0.130	1	05/27/21 07:30	05/27/21 15:45	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	6170		mg/kg	5.64	0.302	2	05/27/21 07:30	05/27/21 17:47	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03
Client ID: PB-666-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/18/21 10:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	253		mg/kg	2.49	0.134	1	05/27/21 07:30	05/27/21 15:40	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	49.7		mg/kg	2.88	0.154	1	05/27/21 07:30	05/27/21 17:10	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4310		mg/kg	4.34	0.232	2	05/27/21 07:30	05/27/21 18:42	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	910		mg/kg	2.18	0.117	1	05/27/21 07:30	05/27/21 17:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	653		mg/kg	2.22	0.119	1	05/27/21 07:30	05/27/21 17:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1010		mg/kg	2.64	0.141	1	05/27/21 07:30	05/27/21 17:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	8660		mg/kg	7.10	0.380	2	05/27/21 07:30	05/27/21 18:47	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	784		mg/kg	2.50	0.134	1	05/27/21 07:30	05/27/21 17:41	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5200		mg/kg	4.75	0.255	2	05/27/21 07:30	05/27/21 19:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12 Date Collected: 05/18/21 12:45

Client ID: PB-666-17-SS01 Date Received: 05/18/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	456		mg/kg	2.85	0.152	1	05/27/21 07:30	05/27/21 18:07	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	375		mg/kg	2.45	0.132	1	05/27/21 07:30	05/27/21 18:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	60.3		mg/kg	2.80	0.150	1	05/27/21 07:30	05/27/21 18:16	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	105		mg/kg	2.70	0.145	1	05/27/21 07:30	05/27/21 18:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16800		mg/kg	18.2	0.978	5	05/27/21 07:30	05/27/21 20:09	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	89.0		mg/kg	3.65	0.196	1	05/27/21 07:30	05/27/21 18:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12100		mg/kg	12.8	0.685	5	05/27/21 07:30	05/27/21 19:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-19
Client ID: FB-210518-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:45
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 11:02	05/27/21 19:13	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126144
Project Number: 200.00135.005
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-20
Client ID: FB-210518-2
Sample Location: PHILADELPHIA, PA
Date Collected: 05/18/21 14:50
Date Received: 05/18/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 11:02	05/27/21 19:18	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126144

Project Number: 200.00135.005 **Report Date:** 06/02/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-18 Batch: WG1501757-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/27/21 07:30	05/27/21 17:01	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 19-20 Batch: WG1503339-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 11:02	05/27/21 19:07	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1501757-2 SRM Lot Number: D109-540								
Lead, Total	98		-		72-128	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 Batch: WG1503339-2								
Lead, Dissolved	102		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1501757-3 QC Sample: L2126144-01 Client ID: PB-666-14-SS01												
Lead, Total	103	50	156	106		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1503339-3 QC Sample: L2126127-01 Client ID: MS Sample												
Lead, Dissolved	ND	510	545.1	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1501757-4 QC Sample: L2126144-01 Client ID: PB-666-14-SS01						
Lead, Total	103	116	mg/kg	12		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-01
Client ID: PB-666-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 09:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.0		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-02
Client ID: PB-666-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 09:55
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.0		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-03
Client ID: PB-666-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-04
Client ID: PB-666-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:19
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.7		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-05
Client ID: PB-666-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:35
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-06
Client ID: PB-666-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 10:50
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.7		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-07
Client ID: PB-666-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 11:10
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-08
Client ID: PB-663-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 11:50
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-09
Client ID: PB-666-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-10
Client ID: PB-666-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:15
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.5		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-11
Client ID: PB-666-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:30
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.9		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-12
Client ID: PB-666-17-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 12:45
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.4		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-13
Client ID: PB-666-18-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 13:20
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.0		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-14
Client ID: PB-666-19-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 13:35
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.4		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-15
Client ID: PB-666-20-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 13:50
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-16
Client ID: PB-666-21-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 14:00
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.7		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-17
Client ID: PB-666-22-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 14:40
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	54.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126144
Report Date: 06/02/21

SAMPLE RESULTS

Lab ID: L2126144-18
Client ID: DUP-01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/18/21 14:05
Date Received: 05/18/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.1		%	0.100	NA	1	-	05/20/21 09:39	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126144

Report Date: 06/02/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-18 QC Batch ID: WG1501385-1 QC Sample: L2126144-01 Client ID: PB-666-14-SS01						
Solids, Total	79.0	78.0	%	1		20

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-01A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-01B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-01C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-01D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-01F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-02A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-02B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-02C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-02D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-02F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-03A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-03B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-03C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-03D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-03F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-04A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-04B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-04C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-04D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-04F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-05A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126144-05B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-05C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-05D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-05F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-06A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-06B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-06C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-06D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-06F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-07A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-07B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-07C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-07D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-07F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-08A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-08B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-08C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-08D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-08F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-09A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-09B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-09C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-09D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-09F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-10A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-10B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-10C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-10D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-10F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-11A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-11B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-11C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-11D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-11F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-12A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-12B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-12C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-12D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-12F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-13A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-13B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-13C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-13D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-13F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-14A	Vial MeOH preserved	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126144-14B	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-14C	Vial water preserved	A	NA		2.5	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-14D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2126144-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2126144-14F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126144-15A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260HLW(14)
L2126144-15B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-15C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-15D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)
L2126144-15E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-15F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-16A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126144-16B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-16C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260H(14),PA-8260HLW(14)
L2126144-16D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)
L2126144-16E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-16F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-17A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260HLW(14)
L2126144-17B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-17C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-17D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)
L2126144-17E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-17F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-18A	Vial MeOH preserved	B	NA		4.2	Y	Absent		PA-8260HLW(14)
L2126144-18B	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-18C	Vial water preserved	B	NA		4.2	Y	Absent	19-MAY-21 22:21	PA-8260HLW(14)
L2126144-18D	Plastic 2oz unpreserved for TS	B	NA		4.2	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126144
Report Date: 06/02/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126144-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.2	Y	Absent		PB-TI(180)
L2126144-18F	Glass 120ml/4oz unpreserved	B	NA		4.2	Y	Absent		PA-8270SIM(14)
L2126144-19C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-19D	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-19E	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-19F	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-19G	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-19H	Plastic 250ml unpreserved	B	6	6	4.2	Y	Absent		-
L2126144-19I	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-19J	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-19X	Plastic 120ml HNO3 preserved Filtrates	B	NA		4.2	Y	Absent		PB-6020S-PPB(180)
L2126144-20A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-20B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-20C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-20D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-20E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-20F	Plastic 250ml unpreserved	B	6	6	4.2	Y	Absent		-
L2126144-20G	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-20H	Amber 250ml unpreserved	B	6	6	4.2	Y	Absent		PA-8270SIM-LVI(7)
L2126144-20X	Plastic 120ml HNO3 preserved Filtrates	B	NA		4.2	Y	Absent		PB-6020S-PPB(180)
L2126144-21A	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-21B	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2126144-21C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2126144-21D	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126144
Project Number:	200.00135.005	**Report Date:**	06/02/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 5/19/21

ALPHA Job #: L2126141

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: williamschmidt@ransomenv.com

Project Information
Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

These samples have been previously analyzed by Alpha ☐

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other EMAIL, ADEX

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	TOTAL METALS	TS	PA-8260 HLW				Sample Specific Comments	Total Bottles
26144 -01	PB-666-14-5501	5/18	905	S	JS	✓	✓	✓	✓					6
-02	PB-666-12-5501		955			✓	✓	✓	✓					6
-03	PB-666-11-5501		1005			✓	✓	✓	✓					6
-04	PB-666-07-5501		1019			✓	✓	✓	✓					6
-05	PB-666-04-5501		1035			✓	✓	✓	✓					6
-06	PB-666-02-5501		1050			✓	✓	✓	✓					6
-07	PB-666-01-5501		1110			✓	✓	✓	✓					6
-08	PB-666-11-5501		1150			✓	✓	✓	✓					6
-09	PB-666-03-5501		1205			✓	✓	✓	✓					6
-10	PB-666-15-5501		1215			✓	✓	✓	✓					6

Container Type: A A P V
Preservative: A A A F

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/21 16:12		5/18/21 16:12
	5/18/21 20:00		5/19/21 8:00
			5/19/21 10:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 3

Date Rec'd in Lab: 5/19/21

ALPHA Job #: L2126144

Client Information
Client: RANSOM CONSULTING
Address: 2127 HAMILTON AVE
Phone: 215-901-4974
Fax:
Email: WILLIAM.SCHMIDT@RANSOMENV.COM

Project Information
Project Name: PHILADELPHIA REFINERY - AST CLOSURE
Project Location: PHILADELPHIA, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: WILLIAM SCHMIDT
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other EMAIL, ADEX

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	TOTAL METALS	TS	PA-8260 HLW	PA-8270SIM-LVI	DISSOLVED METALS	PA-8260	8011	Sample Specific Comments	Total Bottles
26144-11	PB-666-16-5501	5/18	1230	S	TS	✓	✓	✓	✓						6
-12	PB-666-17-5501		1245			✓	✓	✓	✓						6
-13	PB-666-18-5501		1320			✓	✓	✓	✓						6
-14	PB-666-19-5501		1335			✓	✓	✓	✓						6
-15	PB-666-20-5501		1350			✓	✓	✓	✓						6
-16	PB-666-21-5501		1400			✓	✓	✓	✓						6
-17	PB-666-22-5501		1440			✓	✓	✓	✓						6
-18	DUP-01		1405			✓	✓	✓	✓						6
-19	FB-210518-1		1445	GW	TS					✓	✓	✓	✓		8
-20	FB-210518-2	↓	1450	GW	TS					✓	✓	✓	✓		8

Container Type: A A P V
Preservative: A A A F

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/21 16:12		5/19/21 16:12
	5/18/21 1800		5/19/21 1800
	5/18-2130		
	0100		5/19/21 01:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

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320 Forbes Blvd
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Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 5/19/21

ALPHA Job #: L2126144

Client Information

Client: Ranson Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4574
Fax:
Email: William.Schmidt@Ranson

Project Information

Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other Email, ADEX

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☐ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total # Bottles
26144 -21	TB-210518	5/18					5

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type ✓
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/21 16:12		5/18/21 16:12
	5/18/21 18:0		5/18/21 18:0
	5/18 2100		5/18 2100
	5/19 0100		5/19/21 01:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2126411
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/08/21

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Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126411-01	PB-666-23-SS01	SOIL	PHILADELPHIA, PA	05/19/21 07:45	05/19/21
L2126411-02	PB-666-24-SS01	SOIL	PHILADELPHIA, PA	05/19/21 08:10	05/19/21
L2126411-03	PB-666-25-SS01	SOIL	PHILADELPHIA, PA	05/19/21 08:30	05/19/21
L2126411-04	PB-666-06-SS01	SOIL	PHILADELPHIA, PA	05/19/21 08:45	05/19/21
L2126411-05	PB-668-01-SS01	SOIL	PHILADELPHIA, PA	05/19/21 09:05	05/19/21
L2126411-06	PB-668-02-SS01	SOIL	PHILADELPHIA, PA	05/19/21 09:20	05/19/21
L2126411-07	PB-668-03-SS01	SOIL	PHILADELPHIA, PA	05/19/21 09:40	05/19/21
L2126411-08	PB-668-04-SS01	SOIL	PHILADELPHIA, PA	05/19/21 10:02	05/19/21
L2126411-09	PB-668-05-SS01	SOIL	PHILADELPHIA, PA	05/19/21 10:45	05/19/21
L2126411-10	PB-663-01-SS01	SOIL	PHILADELPHIA, PA	05/19/21 11:00	05/19/21
L2126411-11	PB-663-02-SS01	SOIL	PHILADELPHIA, PA	05/19/21 11:10	05/19/21
L2126411-12	PB-663-03-SS01	SOIL	PHILADELPHIA, PA	05/19/21 12:15	05/19/21
L2126411-13	PB-663-04-SS01	SOIL	PHILADELPHIA, PA	05/19/21 12:30	05/19/21
L2126411-14	PB-663-05-SS01	SOIL	PHILADELPHIA, PA	05/19/21 12:50	05/19/21
L2126411-15	PB-663-06-SS01	SOIL	PHILADELPHIA, PA	05/19/21 13:15	05/19/21
L2126411-16	PB-663-07-SS01	SOIL	PHILADELPHIA, PA	05/19/21 13:25	05/19/21
L2126411-17	PB-668-06-SS01	SOIL	PHILADELPHIA, PA	05/19/21 13:45	05/19/21
L2126411-18	PB-668-07-SS01	SOIL	PHILADELPHIA, PA	05/19/21 14:20	05/19/21
L2126411-19	FB-210519-1	WATER	PHILADELPHIA, PA	05/19/21 14:30	05/19/21
L2126411-20	FB-210519-2	WATER	PHILADELPHIA, PA	05/19/21 14:45	05/19/21
L2126411-21	TB-210519	WATER	PHILADELPHIA, PA	05/19/21 15:12	05/19/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative (continued)

Report Submission

June 08, 2021: This final report includes the results of all requested analyses.

June 07, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2126411-21: The analyses performed were specified by the project manager.

Volatile Organics

L2126411-12 and -15: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2126411-17: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (141%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Semivolatile Organics by SIM

L2126411-02D, -07D, -09D, -11D, -14D, -16D, and -18D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2126411-02D, -04D, -07D, -10D, -12D, and -17D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative (continued)

Total Metals

The WG1504100-3 MS recovery, performed on L2126411-01, is outside the acceptance criteria for lead (16%). A post digestion spike was performed and yielded an unacceptable recovery of 67%. The serial dilution recovery was not applicable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 06/08/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 12:51
Analyst: AJK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00025	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	ND		mg/kg	0.0017	0.00051	1
Xylenes, Total	ND		mg/kg	0.0017	0.00051	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02
Client ID: PB-666-24-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 13:17
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.0064		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0032		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	0.025		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.014		mg/kg	0.0024	0.00067	1
o-Xylene	0.013		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.027		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0030		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.019		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.091		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 13:42
Analyst: AJK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	ND		mg/kg	0.00053	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00027	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00053	0.00031	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00060	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 14:07
Analyst: AJK
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00077	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00040	1
Toluene	ND		mg/kg	0.0015	0.00084	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0015	0.00045	1
Xylenes, Total	ND		mg/kg	0.0015	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/25/21 23:54
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	ND		mg/kg	0.0017	0.00051	1
Xylenes, Total	ND		mg/kg	0.0017	0.00051	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.00045	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 00:20
Analyst: JC
Percent Solids: 52%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	0.0024	J	mg/kg	0.0030	0.00083	1
o-Xylene	0.0011	J	mg/kg	0.0015	0.00043	1
Xylenes, Total	0.0035	J	mg/kg	0.0015	0.00043	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.0060		mg/kg	0.0030	0.00028	1
1,2,4-Trimethylbenzene	0.012		mg/kg	0.0030	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 00:45
Analyst: JC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0041	0.00041	1
Benzene	ND		mg/kg	0.0010	0.00034	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00060	1
Ethylbenzene	0.00084	J	mg/kg	0.0020	0.00029	1
p/m-Xylene	0.0032	J	mg/kg	0.0041	0.0011	1
o-Xylene	0.0050		mg/kg	0.0020	0.00059	1
Xylenes, Total	0.0082	J	mg/kg	0.0020	0.00059	1
Isopropylbenzene	0.00042	J	mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	0.012		mg/kg	0.0041	0.00039	1
1,2,4-Trimethylbenzene	0.0078		mg/kg	0.0041	0.00068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 01:10
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 01:35
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00045	1
Benzene	ND		mg/kg	0.0011	0.00037	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00057	1
Toluene	ND		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00065	1
Ethylbenzene	ND		mg/kg	0.0022	0.00031	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00065	1
Xylenes, Total	ND		mg/kg	0.0022	0.00065	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 02:01
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00041	1
Benzene	ND		mg/kg	0.0010	0.00034	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	0.0025		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00059	1
Xylenes, Total	ND		mg/kg	0.0020	0.00059	1
Isopropylbenzene	ND		mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 02:26
Analyst: JC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.10		mg/kg	0.056	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.029	1
Toluene	4.4		mg/kg	0.11	0.060	1
1,2-Dibromoethane	ND		mg/kg	0.056	0.033	1
Ethylbenzene	0.038	J	mg/kg	0.11	0.016	1
p/m-Xylene	0.17	J	mg/kg	0.22	0.062	1
o-Xylene	0.098	J	mg/kg	0.11	0.032	1
Xylenes, Total	0.27	J	mg/kg	0.11	0.032	1
Isopropylbenzene	0.022	J	mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.092	J	mg/kg	0.22	0.022	1
1,2,4-Trimethylbenzene	0.17	J	mg/kg	0.22	0.037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 02:51
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.27		mg/kg	0.055	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	2.8		mg/kg	0.11	0.060	1
1,2-Dibromoethane	ND		mg/kg	0.055	0.032	1
Ethylbenzene	0.034	J	mg/kg	0.11	0.016	1
p/m-Xylene	0.10	J	mg/kg	0.22	0.062	1
o-Xylene	0.043	J	mg/kg	0.11	0.032	1
Xylenes, Total	0.14	J	mg/kg	0.11	0.032	1
Isopropylbenzene	0.014	J	mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.039	J	mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	0.097	J	mg/kg	0.22	0.037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 15:44
Analyst: MKS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.0015		mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	0.067		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00072	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 10:13
Analyst: MKS
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	0.00048	J	mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	0.0011	J	mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00025	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	ND		mg/kg	0.0017	0.00051	1
Xylenes, Total	ND		mg/kg	0.0017	0.00051	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 10:38
Analyst: MKS
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 09:48
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.15	0.015	1
Benzene	0.020	J	mg/kg	0.038	0.013	1
1,2-Dichloroethane	ND		mg/kg	0.077	0.020	1
Toluene	1.9		mg/kg	0.077	0.042	1
1,2-Dibromoethane	ND		mg/kg	0.038	0.022	1
Ethylbenzene	0.018	J	mg/kg	0.077	0.011	1
p/m-Xylene	0.065	J	mg/kg	0.15	0.043	1
o-Xylene	0.022	J	mg/kg	0.077	0.022	1
Xylenes, Total	0.087	J	mg/kg	0.077	0.022	1
Isopropylbenzene	ND		mg/kg	0.077	0.0084	1
1,3,5-Trimethylbenzene	0.017	J	mg/kg	0.15	0.015	1
1,2,4-Trimethylbenzene	0.063	J	mg/kg	0.15	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15 Date Collected: 05/19/21 13:15
Client ID: PB-663-06-SS01 Date Received: 05/19/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 16:34
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	0.0060		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	0.30		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	0.00053	J	mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0024	J	mg/kg	0.0032	0.00090	1
o-Xylene	0.0012	J	mg/kg	0.0016	0.00047	1
Xylenes, Total	0.0036	J	mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.00075	J	mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 11:04
Analyst: MKS
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00067	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00067	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00075	1
o-Xylene	ND		mg/kg	0.0013	0.00039	1
Xylenes, Total	ND		mg/kg	0.0013	0.00039	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/27/21 01:59
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.26	0.026	1
Benzene	0.36		mg/kg	0.066	0.022	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.034	1
Toluene	2.7		mg/kg	0.13	0.072	1
1,2-Dibromoethane	ND		mg/kg	0.066	0.039	1
Ethylbenzene	1.3		mg/kg	0.13	0.019	1
p/m-Xylene	7.8		mg/kg	0.26	0.074	1
o-Xylene	5.2		mg/kg	0.13	0.038	1
Xylenes, Total	13.		mg/kg	0.13	0.038	1
Isopropylbenzene	1.5		mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	13.		mg/kg	0.26	0.025	1
1,2,4-Trimethylbenzene	38.		mg/kg	0.26	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	**141**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 11:29
Analyst: MKS
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0048	0.00049	1
Benzene	ND		mg/kg	0.0012	0.00040	1
1,2-Dichloroethane	ND		mg/kg	0.0024	0.00062	1
Toluene	ND		mg/kg	0.0024	0.0013	1
1,2-Dibromoethane	ND		mg/kg	0.0012	0.00071	1
Ethylbenzene	ND		mg/kg	0.0024	0.00034	1
p/m-Xylene	ND		mg/kg	0.0048	0.0014	1
o-Xylene	ND		mg/kg	0.0024	0.00070	1
Xylenes, Total	ND		mg/kg	0.0024	0.00070	1
Isopropylbenzene	ND		mg/kg	0.0024	0.00026	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0048	0.00047	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0048	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:30
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 10:33
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:36
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 10:59
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	122		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-21
Client ID: TB-210519
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 15:12
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:43
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-21
Client ID: TB-210519
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 15:12
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 11:25
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/24/21 16:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 19-21 Batch: WG1502976-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 06:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-04 Batch: WG1503563-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-21 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 18:27
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05-10 Batch: WG1504039-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 08:07
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 15 Batch: WG1504145-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 08:07
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 12-16,18 Batch: WG1504146-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 20:32
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 17 Batch: WG1504369-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 19-21 Batch: WG1502976-2								
1,2-Dibromoethane	90		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-04 Batch: WG1503563-3 WG1503563-4								
Methyl tert butyl ether	123		116		66-130	6		30
Benzene	119		107		70-130	11		30
1,2-Dichloroethane	119		111		70-130	7		30
Toluene	118		106		70-130	11		30
1,2-Dibromoethane	114		109		70-130	4		30
Ethylbenzene	116		104		70-130	11		30
p/m-Xylene	107		97		70-130	10		30
o-Xylene	107		97		70-130	10		30
Isopropylbenzene	118		107		70-130	10		30
1,3,5-Trimethylbenzene	116		105		70-130	10		30
1,2,4-Trimethylbenzene	114		102		70-130	11		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		105		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	114		115		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-21 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05-10 Batch: WG1504039-3 WG1504039-4								
Methyl tert butyl ether	116		120		66-130	3		30
Benzene	116		118		70-130	2		30
1,2-Dichloroethane	110		115		70-130	4		30
Toluene	116		116		70-130	0		30
1,2-Dibromoethane	106		111		70-130	5		30
Ethylbenzene	114		115		70-130	1		30
p/m-Xylene	105		106		70-130	1		30
o-Xylene	103		105		70-130	2		30
Isopropylbenzene	118		118		70-130	0		30
1,3,5-Trimethylbenzene	114		113		70-130	1		30
1,2,4-Trimethylbenzene	112		111		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	115		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 11-12 Batch: WG1504040-3 WG1504040-4								
Methyl tert butyl ether	116		120		66-130	3		30
Benzene	116		118		70-130	2		30
1,2-Dichloroethane	110		115		70-130	4		30
Toluene	116		116		70-130	0		30
1,2-Dibromoethane	106		111		70-130	5		30
Ethylbenzene	114		115		70-130	1		30
p/m-Xylene	105		106		70-130	1		30
o-Xylene	103		105		70-130	2		30
Isopropylbenzene	118		118		70-130	0		30
1,3,5-Trimethylbenzene	114		113		70-130	1		30
1,2,4-Trimethylbenzene	112		111		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	114		114		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 15 Batch: WG1504145-3 WG1504145-4								
Methyl tert butyl ether	118		119		66-130	1		30
Benzene	116		113		70-130	3		30
1,2-Dichloroethane	113		113		70-130	0		30
Toluene	115		112		70-130	3		30
1,2-Dibromoethane	109		110		70-130	1		30
Ethylbenzene	113		110		70-130	3		30
p/m-Xylene	104		101		70-130	3		30
o-Xylene	103		101		70-130	2		30
Isopropylbenzene	117		111		70-130	5		30
1,3,5-Trimethylbenzene	113		109		70-130	4		30
1,2,4-Trimethylbenzene	111		107		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 12-16,18 Batch: WG1504146-3 WG1504146-4								
Methyl tert butyl ether	118		119		66-130	1		30
Benzene	116		113		70-130	3		30
1,2-Dichloroethane	113		113		70-130	0		30
Toluene	115		112		70-130	3		30
1,2-Dibromoethane	109		110		70-130	1		30
Ethylbenzene	113		110		70-130	3		30
p/m-Xylene	104		101		70-130	3		30
o-Xylene	103		101		70-130	2		30
Isopropylbenzene	117		111		70-130	5		30
1,3,5-Trimethylbenzene	113		109		70-130	4		30
1,2,4-Trimethylbenzene	111		107		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 17 Batch: WG1504369-3 WG1504369-4								
Methyl tert butyl ether	119		119		66-130	0		30
Benzene	118		119		70-130	1		30
1,2-Dichloroethane	115		115		70-130	0		30
Toluene	120		121		70-130	1		30
1,2-Dibromoethane	111		111		70-130	0		30
Ethylbenzene	117		118		70-130	1		30
p/m-Xylene	109		110		70-130	1		30
o-Xylene	108		109		70-130	1		30
Isopropylbenzene	118		120		70-130	2		30
1,3,5-Trimethylbenzene	118		120		70-130	2		30
1,2,4-Trimethylbenzene	117		118		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		100		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	114		114		70-130
Dibromofluoromethane	92		92		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:06
Analyst: DV
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.019		mg/kg	0.0099	0.0018	1
Fluorene	0.0046	J	mg/kg	0.0099	0.0012	1
Phenanthrene	0.024		mg/kg	0.0099	0.00084	1
Anthracene	0.0046	J	mg/kg	0.0099	0.00079	1
Pyrene	0.017		mg/kg	0.0099	0.00069	1
Benzo(a)anthracene	0.017		mg/kg	0.0099	0.00094	1
Chrysene	0.013		mg/kg	0.0099	0.00074	1
Benzo(b)fluoranthene	0.014		mg/kg	0.0099	0.00094	1
Benzo(a)pyrene	0.013		mg/kg	0.0099	0.0012	1
Benzo(ghi)perylene	0.0074	J	mg/kg	0.0099	0.00084	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	48		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02 D
Client ID: PB-666-24-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 16:31
Analyst: RP
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	5.7		mg/kg	0.20	0.035	25
Fluorene	2.9		mg/kg	0.20	0.024	25
Phenanthrene	8.0		mg/kg	0.20	0.017	25
Anthracene	1.5		mg/kg	0.20	0.016	25
Pyrene	4.5		mg/kg	0.20	0.014	25
Benzo(a)anthracene	2.3		mg/kg	0.20	0.019	25
Chrysene	3.3		mg/kg	0.20	0.015	25
Benzo(b)fluoranthene	0.85		mg/kg	0.20	0.019	25
Benzo(a)pyrene	1.6		mg/kg	0.20	0.024	25
Benzo(ghi)perylene	0.61		mg/kg	0.20	0.017	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:22
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.070		mg/kg	0.0076	0.0014	1
Fluorene	0.029		mg/kg	0.0076	0.00091	1
Phenanthrene	0.20		mg/kg	0.0076	0.00064	1
Anthracene	0.056		mg/kg	0.0076	0.00061	1
Pyrene	0.36		mg/kg	0.0076	0.00053	1
Benzo(a)anthracene	0.27		mg/kg	0.0076	0.00072	1
Chrysene	0.24		mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.31		mg/kg	0.0076	0.00072	1
Benzo(a)pyrene	0.26		mg/kg	0.0076	0.00091	1
Benzo(ghi)perylene	0.16		mg/kg	0.0076	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04 D
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 16:47
Analyst: RP
Percent Solids: 56%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.55	J	mg/kg	0.57	0.10	50
Fluorene	1.2		mg/kg	0.57	0.069	50
Phenanthrene	22.		mg/kg	0.57	0.049	50
Anthracene	7.5		mg/kg	0.57	0.046	50
Pyrene	39.		mg/kg	0.57	0.040	50
Benzo(a)anthracene	34.		mg/kg	0.57	0.055	50
Chrysene	27.		mg/kg	0.57	0.043	50
Benzo(b)fluoranthene	47.		mg/kg	0.57	0.055	50
Benzo(a)pyrene	36.		mg/kg	0.57	0.069	50
Benzo(ghi)perylene	29.		mg/kg	0.57	0.049	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:39
Analyst: DV
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.026		mg/kg	0.0095	0.0017	1
Fluorene	0.018		mg/kg	0.0095	0.0011	1
Phenanthrene	0.045		mg/kg	0.0095	0.00081	1
Anthracene	0.0089	J	mg/kg	0.0095	0.00076	1
Pyrene	0.020		mg/kg	0.0095	0.00066	1
Benzo(a)anthracene	0.0028	J	mg/kg	0.0095	0.00090	1
Chrysene	0.0024	J	mg/kg	0.0095	0.00071	1
Benzo(b)fluoranthene	0.0073	J	mg/kg	0.0095	0.00090	1
Benzo(a)pyrene	0.0062	J	mg/kg	0.0095	0.0011	1
Benzo(ghi)perylene	0.0054	J	mg/kg	0.0095	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	56		30-120
4-Terphenyl-d14	37		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 14:55
Analyst: DV
Percent Solids: 52%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.25		mg/kg	0.012	0.0023	1
Fluorene	0.0022	J	mg/kg	0.012	0.0015	1
Phenanthrene	0.034		mg/kg	0.012	0.0011	1
Anthracene	0.0077	J	mg/kg	0.012	0.0010	1
Pyrene	0.059		mg/kg	0.012	0.00088	1
Benzo(a)anthracene	0.046		mg/kg	0.012	0.0012	1
Chrysene	0.039		mg/kg	0.012	0.00094	1
Benzo(b)fluoranthene	0.055		mg/kg	0.012	0.0012	1
Benzo(a)pyrene	0.040		mg/kg	0.012	0.0015	1
Benzo(ghi)perylene	0.026		mg/kg	0.012	0.0011	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	40		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07 D
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 22:21
Analyst: DV
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.14	J	mg/kg	0.20	0.035	20
Fluorene	0.58		mg/kg	0.20	0.024	20
Phenanthrene	0.86		mg/kg	0.20	0.017	20
Anthracene	0.35		mg/kg	0.20	0.016	20
Pyrene	0.65		mg/kg	0.20	0.014	20
Benzo(a)anthracene	0.18	J	mg/kg	0.20	0.019	20
Chrysene	0.27		mg/kg	0.20	0.015	20
Benzo(b)fluoranthene	0.14	J	mg/kg	0.20	0.019	20
Benzo(a)pyrene	0.13	J	mg/kg	0.20	0.024	20
Benzo(ghi)perylene	0.090	J	mg/kg	0.20	0.017	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 15:12
Analyst: DV
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.012		mg/kg	0.0074	0.0013	1
Fluorene	0.0011	J	mg/kg	0.0074	0.00089	1
Phenanthrene	0.0096		mg/kg	0.0074	0.00063	1
Anthracene	0.0030	J	mg/kg	0.0074	0.00059	1
Pyrene	0.015		mg/kg	0.0074	0.00052	1
Benzo(a)anthracene	0.010		mg/kg	0.0074	0.00071	1
Chrysene	0.010		mg/kg	0.0074	0.00056	1
Benzo(b)fluoranthene	0.017		mg/kg	0.0074	0.00071	1
Benzo(a)pyrene	0.011		mg/kg	0.0074	0.00089	1
Benzo(ghi)perylene	0.013		mg/kg	0.0074	0.00063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	46		30-120
4-Terphenyl-d14	34		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09 D
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 22:37
Analyst: DV
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.053		mg/kg	0.047	0.0085	5
Fluorene	ND		mg/kg	0.047	0.0056	5
Phenanthrene	0.0082	J	mg/kg	0.047	0.0040	5
Anthracene	ND		mg/kg	0.047	0.0038	5
Pyrene	0.0052	J	mg/kg	0.047	0.0033	5
Benzo(a)anthracene	0.0068	J	mg/kg	0.047	0.0045	5
Chrysene	0.0045	J	mg/kg	0.047	0.0035	5
Benzo(b)fluoranthene	0.0052	J	mg/kg	0.047	0.0045	5
Benzo(a)pyrene	ND		mg/kg	0.047	0.0056	5
Benzo(ghi)perylene	ND		mg/kg	0.047	0.0040	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	47		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10 D
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 17:04
Analyst: RP
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.2		mg/kg	0.19	0.034	20
Fluorene	1.3		mg/kg	0.19	0.023	20
Phenanthrene	13.		mg/kg	0.19	0.016	20
Anthracene	3.4		mg/kg	0.19	0.015	20
Pyrene	14.		mg/kg	0.19	0.013	20
Benzo(a)anthracene	9.0		mg/kg	0.19	0.018	20
Chrysene	7.0		mg/kg	0.19	0.014	20
Benzo(b)fluoranthene	10.		mg/kg	0.19	0.018	20
Benzo(a)pyrene	7.8		mg/kg	0.19	0.023	20
Benzo(ghi)perylene	4.8		mg/kg	0.19	0.016	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11 D
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:53
Analyst: DV
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.10		mg/kg	0.020	0.0036	2
Fluorene	0.0096	J	mg/kg	0.020	0.0024	2
Phenanthrene	0.35		mg/kg	0.020	0.0017	2
Anthracene	0.072		mg/kg	0.020	0.0016	2
Pyrene	0.81		mg/kg	0.020	0.0014	2
Benzo(a)anthracene	0.70		mg/kg	0.020	0.0019	2
Chrysene	0.62		mg/kg	0.020	0.0015	2
Benzo(b)fluoranthene	0.98		mg/kg	0.020	0.0019	2
Benzo(a)pyrene	0.67		mg/kg	0.020	0.0024	2
Benzo(ghi)perylene	0.47		mg/kg	0.020	0.0017	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12 D
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 17:20
Analyst: RP
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.92		mg/kg	0.48	0.086	50
Fluorene	3.3		mg/kg	0.48	0.057	50
Phenanthrene	30.		mg/kg	0.48	0.041	50
Anthracene	7.7		mg/kg	0.48	0.038	50
Pyrene	33.		mg/kg	0.48	0.034	50
Benzo(a)anthracene	22.		mg/kg	0.48	0.045	50
Chrysene	18.		mg/kg	0.48	0.036	50
Benzo(b)fluoranthene	23.		mg/kg	0.48	0.045	50
Benzo(a)pyrene	18.		mg/kg	0.48	0.057	50
Benzo(ghi)perylene	10.		mg/kg	0.48	0.041	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 15:29
Analyst: DV
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.23		mg/kg	0.0097	0.0017	1
Fluorene	0.050		mg/kg	0.0097	0.0012	1
Phenanthrene	0.062		mg/kg	0.0097	0.00082	1
Anthracene	0.059		mg/kg	0.0097	0.00077	1
Pyrene	0.034		mg/kg	0.0097	0.00068	1
Benzo(a)anthracene	0.045		mg/kg	0.0097	0.00092	1
Chrysene	0.043		mg/kg	0.0097	0.00072	1
Benzo(b)fluoranthene	0.13		mg/kg	0.0097	0.00092	1
Benzo(a)pyrene	0.10		mg/kg	0.0097	0.0012	1
Benzo(ghi)perylene	0.12		mg/kg	0.0097	0.00082	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	49		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14 D
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 19:36
Analyst: DV
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.052		mg/kg	0.020	0.0036	2
Fluorene	0.014	J	mg/kg	0.020	0.0024	2
Phenanthrene	0.91		mg/kg	0.020	0.0017	2
Anthracene	0.13		mg/kg	0.020	0.0016	2
Pyrene	0.56		mg/kg	0.020	0.0014	2
Benzo(a)anthracene	0.42		mg/kg	0.020	0.0019	2
Chrysene	0.36		mg/kg	0.020	0.0015	2
Benzo(b)fluoranthene	0.79		mg/kg	0.020	0.0019	2
Benzo(a)pyrene	0.57		mg/kg	0.020	0.0024	2
Benzo(ghi)perylene	0.53		mg/kg	0.020	0.0017	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15 D
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 22:04
Analyst: DV
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.22		mg/kg	0.081	0.015	10
Fluorene	0.17		mg/kg	0.081	0.0097	10
Phenanthrene	3.0		mg/kg	0.081	0.0069	10
Anthracene	0.87		mg/kg	0.081	0.0065	10
Pyrene	6.4		mg/kg	0.081	0.0057	10
Benzo(a)anthracene	5.3		mg/kg	0.081	0.0077	10
Chrysene	4.3		mg/kg	0.081	0.0061	10
Benzo(b)fluoranthene	6.6		mg/kg	0.081	0.0077	10
Benzo(a)pyrene	4.8		mg/kg	0.081	0.0097	10
Benzo(ghi)perylene	3.0		mg/kg	0.081	0.0069	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	39		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16 D
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 20:09
Analyst: DV
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.014	J	mg/kg	0.035	0.0064	5
Fluorene	0.0042	J	mg/kg	0.035	0.0042	5
Phenanthrene	0.49		mg/kg	0.035	0.0030	5
Anthracene	0.15		mg/kg	0.035	0.0028	5
Pyrene	0.37		mg/kg	0.035	0.0025	5
Benzo(a)anthracene	0.19		mg/kg	0.035	0.0034	5
Chrysene	0.19		mg/kg	0.035	0.0026	5
Benzo(b)fluoranthene	0.21		mg/kg	0.035	0.0034	5
Benzo(a)pyrene	0.12		mg/kg	0.035	0.0042	5
Benzo(ghi)perylene	0.17		mg/kg	0.035	0.0030	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17 D
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/02/21 18:34
Analyst: RP
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	150		mg/kg	3.9	0.70	400
Fluorene	25.		mg/kg	3.9	0.46	400
Phenanthrene	320		mg/kg	3.9	0.33	400
Anthracene	58.		mg/kg	3.9	0.31	400
Pyrene	190		mg/kg	3.9	0.27	400
Benzo(a)anthracene	120		mg/kg	3.9	0.37	400
Chrysene	90.		mg/kg	3.9	0.29	400
Benzo(b)fluoranthene	120		mg/kg	3.9	0.37	400
Benzo(a)pyrene	76.		mg/kg	3.9	0.46	400
Benzo(ghi)perylene	48.		mg/kg	3.9	0.33	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18 D
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 20:25
Analyst: DV
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.048	0.0087	5
Fluorene	ND		mg/kg	0.048	0.0058	5
Phenanthrene	ND		mg/kg	0.048	0.0041	5
Anthracene	ND		mg/kg	0.048	0.0039	5
Pyrene	ND		mg/kg	0.048	0.0034	5
Benzo(a)anthracene	0.0051	J	mg/kg	0.048	0.0046	5
Chrysene	ND		mg/kg	0.048	0.0036	5
Benzo(b)fluoranthene	ND		mg/kg	0.048	0.0046	5
Benzo(a)pyrene	ND		mg/kg	0.048	0.0058	5
Benzo(ghi)perylene	ND		mg/kg	0.048	0.0041	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	27		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 14:26
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 18:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	78		15-120
4-Terphenyl-d14	80		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 14:45
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 18:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	76		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/26/21 11:50
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/24/21 15:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19-20 Batch: WG1502995-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	60		10-120
4-Terphenyl-d14	106		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/01/21 13:49
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 05/31/21 08:20

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-18 Batch: WG1505670-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00053
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0066	0.00063
Chrysene	ND		mg/kg	0.0066	0.00050
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00063
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	64		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19-20 Batch: WG1502995-2 WG1502995-3								
Naphthalene	78		62		40-140	23		40
Fluorene	90		79		40-140	13		40
Phenanthrene	93		86		40-140	8		40
Anthracene	95		88		40-140	8		40
Pyrene	97		95		26-127	2		40
Benzo(a)anthracene	95		94		40-140	1		40
Chrysene	95		94		40-140	1		40
Benzo(b)fluoranthene	102		100		40-140	2		40
Benzo(a)pyrene	100		99		40-140	1		40
Benzo(ghi)perylene	95		92		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	62		44		21-120
Phenol-d6	54		40		10-120
Nitrobenzene-d5	81		62		23-120
2-Fluorobiphenyl	77		64		15-120
2,4,6-Tribromophenol	74		67		10-120
4-Terphenyl-d14	96		93		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-18 Batch: WG1505670-2 WG1505670-3								
Naphthalene	62		85		40-140	31		50
Fluorene	64		87		40-140	30		50
Phenanthrene	62		86		40-140	32		50
Anthracene	66		91		40-140	32		50
Pyrene	64		87		35-142	30		50
Benzo(a)anthracene	68		92		40-140	30		50
Chrysene	62		84		40-140	30		50
Benzo(b)fluoranthene	70		101		40-140	36		50
Benzo(a)pyrene	71		98		40-140	32		50
Benzo(ghi)perylene	68		92		40-140	30		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	78		106		23-120
2-Fluorobiphenyl	61		82		30-120
4-Terphenyl-d14	58		78		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	66.3		mg/kg	2.88	0.154	1	05/28/21 10:06	05/31/21 14:55	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02 Date Collected: 05/19/21 08:10

Client ID: PB-666-24-SS01 Date Received: 05/19/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	385		mg/kg	2.30	0.123	1	05/28/21 10:06	05/31/21 14:04	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	205		mg/kg	2.31	0.124	1	05/28/21 10:06	05/31/21 14:08	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2200		mg/kg	3.49	0.187	1	05/28/21 10:06	05/31/21 14:13	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	26.9		mg/kg	2.84	0.152	1	05/28/21 10:06	05/31/21 14:18	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 52%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1600		mg/kg	3.75	0.201	1	05/28/21 10:06	05/31/21 14:41	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	483		mg/kg	2.80	0.150	1	05/28/21 10:06	05/31/21 14:46	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	192		mg/kg	2.22	0.119	1	05/28/21 10:06	05/31/21 14:50	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	156		mg/kg	2.86	0.153	1	05/28/21 10:06	05/31/21 15:28	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1470		mg/kg	2.84	0.152	1	05/28/21 10:06	05/31/21 15:33	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	7180		mg/kg	15.1	0.808	5	05/28/21 10:06	05/31/21 17:51	EPA 3050B	1,6010D	BV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3380		mg/kg	2.79	0.150	1	05/28/21 10:06	05/31/21 15:43	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	461		mg/kg	2.78	0.149	1	05/28/21 10:06	05/31/21 15:47	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	23.1		mg/kg	3.04	0.163	1	05/28/21 10:06	05/31/21 15:52	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	27.7		mg/kg	2.45	0.131	1	05/28/21 10:06	05/31/21 15:57	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1420		mg/kg	2.05	0.110	1	05/28/21 10:06	05/31/21 16:02	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	195		mg/kg	2.87	0.154	1	05/28/21 10:06	05/31/21 16:06	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.0		mg/kg	2.85	0.153	1	05/28/21 10:06	05/31/21 16:11	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-19
Client ID: FB-210519-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:30
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 10:44	06/07/21 14:49	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126411
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-20
Client ID: FB-210519-2
Sample Location: PHILADELPHIA, PA
Date Collected: 05/19/21 14:45
Date Received: 05/19/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 10:44	06/07/21 14:54	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126411

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 19-20 Batch: WG1503348-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	05/26/21 10:44	06/07/21 13:42	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-18 Batch: WG1504100-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/28/21 10:06	05/31/21 14:32	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 Batch: WG1503348-2								
Lead, Dissolved	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1504100-2 SRM Lot Number: D109-540								
Lead, Total	89		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1503348-3 QC Sample: L2126437-01 Client ID: MS Sample												
Lead, Dissolved	ND	510	538.6	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1504100-3 QC Sample: L2126411-01 Client ID: PB-666-23-SS01												
Lead, Total	66.3	59.2	76.0	**16**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126411

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1503348-4 QC Sample: L2126437-01 Client ID: DUP Sample						
Lead, Dissolved	ND	ND	ug/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1504100-4 QC Sample: L2126411-01 Client ID: PB-666-23-SS01						
Lead, Total	66.3	55.1	mg/kg	18		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-01
Client ID: PB-666-23-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 07:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.9		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-02
Client ID: PB-666-24-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 08:10
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.7		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-03
Client ID: PB-666-25-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 08:30
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-04
Client ID: PB-666-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 08:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	56.2		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-05
Client ID: PB-668-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 09:05
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.4		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-06
Client ID: PB-668-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 09:20
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.4		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-07
Client ID: PB-668-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 09:40
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.4		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-08
Client ID: PB-668-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 10:02
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-09
Client ID: PB-668-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 10:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-10
Client ID: PB-663-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 11:00
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.3		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-11
Client ID: PB-663-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 11:10
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.3		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-12
Client ID: PB-663-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 12:15
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.5		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-13
Client ID: PB-663-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 12:30
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-14
Client ID: PB-663-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 12:50
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.8		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-15
Client ID: PB-663-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 13:15
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-16
Client ID: PB-663-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 13:25
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.5		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-17
Client ID: PB-668-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/19/21 13:45
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.9		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126411
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126411-18
Client ID: PB-668-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/19/21 14:20
Date Received: 05/19/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.0		%	0.100	NA	1	-	05/21/21 09:26	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-01A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-01B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-01C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-01D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-01F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-02A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-02B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-02C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-02D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-02F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-03A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-03B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-03C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-03D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-03F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-04A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-04B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-04C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-04D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-04F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-05A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-05B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-05C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-05D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-05F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-06A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-06B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-06C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-06D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-06F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-07A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-07B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-07C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-07D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-07F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-08A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-08B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-08C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-08D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-08F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-09A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126411-09B	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-09C	Vial water preserved	A	NA		2.9	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-09D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126411-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126411-09F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126411-10A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-10B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-10C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-10D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-10E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-10F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-11A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-11B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-11C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-11D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-11F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-12A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126411-12B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-12C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-12D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-12E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-12F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-13A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-13B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-13C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-13D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-13E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-13F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-14A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-14B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-14C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-14D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-14E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-14F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-15A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2126411-15B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-15C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260H(14),PA-8260HLW(14)
L2126411-15D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-15E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-15F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-16A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-16B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-16C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-16D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-16E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-16F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-17A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-17B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-17C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-17D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)
L2126411-17E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-17F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-18A	Vial MeOH preserved	B	NA		2.6	Y	Absent		PA-8260HLW(14)
L2126411-18B	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-18C	Vial water preserved	B	NA		2.6	Y	Absent	21-MAY-21 02:50	PA-8260HLW(14)
L2126411-18D	Plastic 120ml unpreserved	B	NA		2.6	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126411
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126411-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.6	Y	Absent		PB-TI(180)
L2126411-18F	Glass 120ml/4oz unpreserved	B	NA		2.6	Y	Absent		PA-8270SIM(14)
L2126411-19A	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-19B	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-19C	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-19D	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)
L2126411-19E	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)
L2126411-19F	Plastic 250ml unpreserved	B	7	7	2.6	Y	Absent		-
L2126411-19G	Amber 250ml unpreserved	B	7	7	2.6	Y	Absent		PA-8270SIM-LVI(7)
L2126411-19H	Amber 250ml unpreserved	B	7	7	2.6	Y	Absent		PA-8270SIM-LVI(7)
L2126411-19W	Plastic 120ml HNO3 preserved Filtrates	B	NA		2.6	Y	Absent		PB-6020S-PPB(180)
L2126411-20A	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126411-20B	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126411-20C	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126411-20D	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126411-20E	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126411-20F	Plastic 250ml unpreserved	A	7	7	2.9	Y	Absent		-
L2126411-20G	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126411-20H	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126411-20W	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.9	Y	Absent		PB-6020S-PPB(180)
L2126411-21A	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-21B	Vial HCl preserved	B	NA		2.6	Y	Absent		PA-8260(14)
L2126411-21C	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)
L2126411-21D	Vial Na2S2O3 preserved	B	NA		2.6	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126411
Project Number:	200.00135.005	**Report Date:**	06/08/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of

Date Rec'd in Lab: 5/20/21

ALPHA Job #: L2126411

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransom

Project Information
Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 2001.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other Email, ADEX

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Report only Project Specific Analyte List
Please specify Metals or TAL.
PADEP Leaded/Unleaded Gasoline, DRO 1-6 Fuel Oil
Short List. Lead only.

ANALYSIS
PA-8270 SIM | Metals (Lead) | TS | PA-8270 1Hill

Sample Filtration
☐ Done
☐ Lab to do
Preservation ☐ Lab to do
(Please Specify below)
2

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total # Bottles
26411 -01	PB-666-23-5501	5/19	0745	S	TS		6
-02	PB-666-24-5501		0810				6
-03	PB-666-25-5501		0830				6
-04	PB-666-06-5501		0845				6
-05	PB-668-01-5501		0905				6
-06	PB-668-02-5501		0920				6
-07	PB-668-03-5501		0940				6
-08	PB-668-04-5501		1007				6
-09	PB-668-05-5501		1045				6
-10	~~PB-668-0~~ PB-663-01-5501		1100				6

Container Type: A A P V
Preservative: A A A F

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/19/21 1730		5/19/21 15:12
	5-19-21 2000		5-19-21 23:30
	5/19/21		5/20/21 02:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of

Date Rec'd in Lab: 5/20/21

ALPHA Job #: L2126411

Client Information

Client: Ransom Consulting
Address: 2177 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@Ransom

Project Information

Project Name: Philadelphia Refinery- AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other EMAIL ADEX

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Report only Project Specific Analyte List

Please specify Metals or TAL.
PADEP Leaded/Unleaded Gasoline, No 1-6 Fuel Oil Short List, Lead only

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	Metals (Lead)	TS	PA-8260 HLW	PA-8270 SIM-LVI	Dissolved Metals	PA-8260	8011	Total Bottle
L2126411-11	PB-663-02-5501	5/19	1110	S	TS	✓	✓	✓	✓					6
-12	PB-663-03-5501		1215	S		✓	✓	✓	✓					6
-13	PB-663-04-5501		1230	S		✓	✓	✓	✓					6
-14	PB-663-05-5501		1250	S		✓	✓	✓	✓					6
-15	PB-663-06-5501		1315	S		✓	✓	✓	✓					6
-16	PB-663-07-5501		0325	S		✓	✓	✓	✓					6
-17	PB-668-06-5501		1345	S		✓	✓	✓	✓					6
-18	PB-668-07-5501		1420	S		✓	✓	✓	✓					6
-19	FB-210519-1		1430	A						✓	✓	✓	✓	8
-20	FB-210519-2		1445	A						✓	✓	✓	✓	8

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Container Type	A	A	P	V
Preservative	A	A	A	F

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/19/21 1230		5/19/21 15:12
	5-19-21 2100		5/19/21 2330
			5/20/21 02:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

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Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 5/20/21

ALPHA Job #: L2126411

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransom.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.0C135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☐ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
See Page 1
Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total # Bottles
2411 -21	TB-210519	5/19		A	TS	5

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/14/21 1730		5/19/21 15:12
	5/19/21 2100		5/20/21 02:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

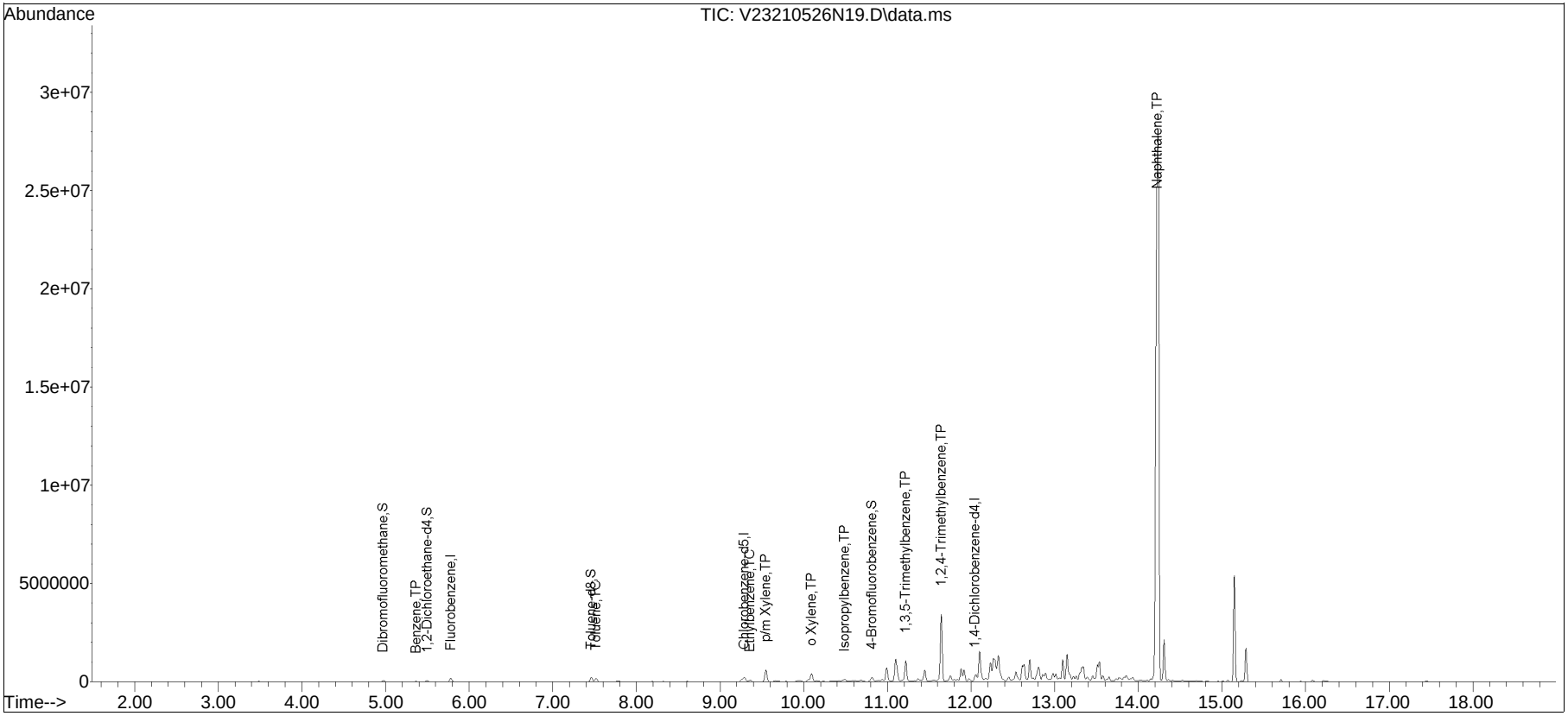
Form No: 01-14 HC (rev. 30-Sept-2013)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA123\2021\210526N\
Data File : V23210526N19.D
Acq On : 27 May 2021 01:59 am
Operator : VOA123:JC
Sample : L2126411-17,31H,3.40,5,0.100,,A
Misc : WG1504369,ICAL17933
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 27 07:27:24 2021
Quant Method : I:\VOLATILES\VOA123\2021\210526N\V123_210512N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu May 13 08:11:37 2021
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list26N\V23210526N03.D•



ANALYTICAL REPORT

Lab Number:	L2126821
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/08/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126821-01	PB-663-08-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:00	05/20/21
L2126821-02	PB-663-09-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:10	05/20/21
L2126821-03	PB-663-10-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:18	05/20/21
L2126821-04	PB-663-12-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:30	05/20/21
L2126821-05	PB-663-13-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:40	05/20/21
L2126821-06	PB-663-14-SS01	SOIL	PHILADELPHIA, PA	05/20/21 08:55	05/20/21
L2126821-07	PB-672-01-SS01	SOIL	PHILADELPHIA, PA	05/20/21 09:45	05/20/21
L2126821-08	PB-672-02-SS01	SOIL	PHILADELPHIA, PA	05/20/21 09:55	05/20/21
L2126821-09	PB-672-03-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:05	05/20/21
L2126821-10	PB-672-04-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:10	05/20/21
L2126821-11	PB-672-05-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:20	05/20/21
L2126821-12	PB-672-06-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:40	05/20/21
L2126821-13	PB-672-07-SS01	SOIL	PHILADELPHIA, PA	05/20/21 10:45	05/20/21
L2126821-14	PB-672-08-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:00	05/20/21
L2126821-15	PB-672-09-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:15	05/20/21
L2126821-16	PB-672-10-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:25	05/20/21
L2126821-17	PB-672-11-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:40	05/20/21
L2126821-18	PB-672-12-SS01	SOIL	PHILADELPHIA, PA	05/20/21 11:55	05/20/21
L2126821-19	PB-672-13-SS01	SOIL	PHILADELPHIA, PA	05/20/21 12:10	05/20/21
L2126821-20	PB-672-14-SS01	SOIL	PHILADELPHIA, PA	05/20/21 12:25	05/20/21
L2126821-21	PB-672-15-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:20	05/20/21
L2126821-22	PB-672-16-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:30	05/20/21
L2126821-23	PB-672-17-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:40	05/20/21
L2126821-24	PB-672-18-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:50	05/20/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126821-25	PB-672-19-SS01	SOIL	PHILADELPHIA, PA	05/20/21 13:55	05/20/21
L2126821-26	PB-672-20-SS01	SOIL	PHILADELPHIA, PA	05/20/21 14:10	05/20/21
L2126821-27	PB-672-21-SS01	SOIL	PHILADELPHIA, PA	05/20/21 14:15	05/20/21
L2126821-28	PB-672-22-SS01	SOIL	PHILADELPHIA, PA	05/20/21 14:30	05/20/21
L2126821-29	TB-210520	WATER	PHILADELPHIA, PA	05/20/21 00:00	05/20/21
L2126821-30	FB-210520-1	WATER	PHILADELPHIA, PA	05/20/21 14:40	05/20/21
L2126821-31	FB-210520-2	WATER	PHILADELPHIA, PA	05/20/21 14:45	05/20/21
L2126821-32	FB-210520-3	WATER	PHILADELPHIA, PA	05/20/21 15:00	05/20/21
L2126821-33	DUP-02	SOIL	PHILADELPHIA, PA	05/20/21 08:00	05/20/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2126821-30: Headspace was noted in all sample containers submitted for Volatile Organics. The analysis was cancelled at the client's request.

Volatile Organics

L2126821-06: The surrogate recovery for 4-bromofluorobenzene (137%) was outside the acceptance criteria; however, re-analysis achieved a similar result: 1,4-dichlorobenzene-d4 (40%). The results of both analyses are reported.

L2126821-28: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (46%) and the surrogate recovery for 4-bromofluorobenzene (131%) were outside the acceptance criteria; however, re-analysis achieved similar results: 1,4-dichlorobenzene-d4 (33%) and 4-bromofluorobenzene (137%). The results of both analyses are reported.

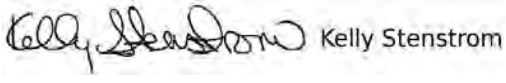
Semivolatile Organics by SIM

L2126821-01D, -02D, -03D, -08D, -09D, -11D, -17D, -20D, and -28D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2126821-06D: The sample has elevated detection limits due to the dilution required by matrix interferences encountered during the concentration of the sample.

L2126821-06D, -09D, -19D, and -26D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 06/08/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 13:37
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00078	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0029	0.00081	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	ND		mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 14:03
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00089	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00096	1
1,2-Dibromoethane	ND		mg/kg	0.00089	0.00052	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00059	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 14:28
Analyst: MKS
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 14:53
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	ND		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00048	1
Toluene	ND		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	ND		mg/kg	0.0018	0.00026	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00054	1
Xylenes, Total	ND		mg/kg	0.0018	0.00054	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05
Client ID: PB-663-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/26/21 15:18
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 00:12
Analyst: MKS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0057	0.00057	1
Benzene	0.0015		mg/kg	0.0014	0.00047	1
1,2-Dichloroethane	ND		mg/kg	0.0028	0.00073	1
Toluene	0.0016	J	mg/kg	0.0028	0.0015	1
1,2-Dibromoethane	ND		mg/kg	0.0014	0.00083	1
Ethylbenzene	0.00052	J	mg/kg	0.0028	0.00040	1
p/m-Xylene	ND		mg/kg	0.0057	0.0016	1
o-Xylene	0.0013	J	mg/kg	0.0028	0.00083	1
Xylenes, Total	0.0013	J	mg/kg	0.0028	0.00083	1
Isopropylbenzene	ND		mg/kg	0.0028	0.00031	1
1,3,5-Trimethylbenzene	0.0017	J	mg/kg	0.0057	0.00055	1
1,2,4-Trimethylbenzene	0.0015	J	mg/kg	0.0057	0.00095	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06 R
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 10:05
Analyst: NLK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00044	1
Benzene	0.028		mg/kg	0.0011	0.00037	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00057	1
Toluene	0.071		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00065	1
Ethylbenzene	0.016		mg/kg	0.0022	0.00031	1
p/m-Xylene	0.045		mg/kg	0.0044	0.0012	1
o-Xylene	0.027		mg/kg	0.0022	0.00064	1
Xylenes, Total	0.072		mg/kg	0.0022	0.00064	1
Isopropylbenzene	0.0026		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	0.0043	J	mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	0.014		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 00:37
Analyst: MKS
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08
Client ID: PB-672-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 01:02
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09
Client ID: PB-672-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:05
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 01:27
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00058	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00063	1
1,2-Dibromoethane	ND		mg/kg	0.00058	0.00034	1
Ethylbenzene	ND		mg/kg	0.0012	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00065	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0023	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10
Client ID: PB-672-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 01:53
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	ND		mg/kg	0.00043	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00086	0.00022	1
Toluene	ND		mg/kg	0.00086	0.00047	1
1,2-Dibromoethane	ND		mg/kg	0.00043	0.00025	1
Ethylbenzene	ND		mg/kg	0.00086	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00048	1
o-Xylene	ND		mg/kg	0.00086	0.00025	1
Xylenes, Total	ND		mg/kg	0.00086	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00086	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 02:18
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	ND		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00067	1
o-Xylene	ND		mg/kg	0.0012	0.00035	1
Xylenes, Total	ND		mg/kg	0.0012	0.00035	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 02:43
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	ND		mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00096	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00096	0.00028	1
Xylenes, Total	ND		mg/kg	0.00096	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 03:08
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00074	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00081	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00044	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0030	0.00083	1
o-Xylene	ND		mg/kg	0.0015	0.00043	1
Xylenes, Total	ND		mg/kg	0.0015	0.00043	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 03:33
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00021	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00058	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 03:59
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00028	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00053	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 04:24
Analyst: MKS
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00020	1
Benzene	ND		mg/kg	0.00049	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00097	0.00025	1
Toluene	ND		mg/kg	0.00097	0.00053	1
1,2-Dibromoethane	ND		mg/kg	0.00049	0.00028	1
Ethylbenzene	ND		mg/kg	0.00097	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00097	0.00028	1
Xylenes, Total	ND		mg/kg	0.00097	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00097	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 04:49
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	0.00043		mg/kg	0.00043	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00086	0.00022	1
Toluene	ND		mg/kg	0.00086	0.00047	1
1,2-Dibromoethane	ND		mg/kg	0.00043	0.00025	1
Ethylbenzene	ND		mg/kg	0.00086	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00048	1
o-Xylene	ND		mg/kg	0.00086	0.00025	1
Xylenes, Total	ND		mg/kg	0.00086	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00086	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18
Client ID: PB-672-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 07:38
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00022	1
Benzene	ND		mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00031	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00060	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00021	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	81		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19
Client ID: PB-672-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 09:44
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	0.00032	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00071	1
o-Xylene	0.00049	J	mg/kg	0.0013	0.00037	1
Xylenes, Total	0.00049	J	mg/kg	0.0013	0.00037	1
Isopropylbenzene	0.00026	J	mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.0028		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20
Client ID: PB-672-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 07:59
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00058	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00063	1
1,2-Dibromoethane	ND		mg/kg	0.00058	0.00034	1
Ethylbenzene	ND		mg/kg	0.0012	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00065	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	126		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 08:20
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00049	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00098	0.00025	1
Toluene	ND		mg/kg	0.00098	0.00053	1
1,2-Dibromoethane	ND		mg/kg	0.00049	0.00028	1
Ethylbenzene	ND		mg/kg	0.00098	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00055	1
o-Xylene	ND		mg/kg	0.00098	0.00028	1
Xylenes, Total	ND		mg/kg	0.00098	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00098	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 18:52
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00044	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00088	0.00023	1
Toluene	ND		mg/kg	0.00088	0.00048	1
1,2-Dibromoethane	ND		mg/kg	0.00044	0.00026	1
Ethylbenzene	ND		mg/kg	0.00088	0.00012	1
p/m-Xylene	ND		mg/kg	0.0018	0.00049	1
o-Xylene	ND		mg/kg	0.00088	0.00026	1
Xylenes, Total	ND		mg/kg	0.00088	0.00026	1
Isopropylbenzene	ND		mg/kg	0.00088	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	122		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 08:41
Analyst: NLK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 19:33
Analyst: MKS
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	123		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25
Client ID: PB-672-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 19:54
Analyst: MKS
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	ND		mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00096	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00096	0.00028	1
Xylenes, Total	ND		mg/kg	0.00096	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 20:15
Analyst: MKS
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00061	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0022	0.00063	1
o-Xylene	ND		mg/kg	0.0011	0.00033	1
Xylenes, Total	ND		mg/kg	0.0011	0.00033	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 20:36
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	0.0014		mg/kg	0.00052	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	0.0019		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00052	0.00030	1
Ethylbenzene	0.00029	J	mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0021	0.00058	1
o-Xylene	0.00072	J	mg/kg	0.0010	0.00030	1
Xylenes, Total	0.00072	J	mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 20:57
Analyst: MKS
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00080	1
o-Xylene	0.00050	J	mg/kg	0.0014	0.00041	1
Xylenes, Total	0.00050	J	mg/kg	0.0014	0.00041	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.00066	J	mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	**131**	Q	70-130
Dibromofluoromethane	125		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28 R
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 09:02
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00064	1
o-Xylene	0.00057	J	mg/kg	0.0011	0.00033	1
Xylenes, Total	0.00057	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00086	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.00080	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-29
Client ID: TB-210520
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 00:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:49
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-29
Client ID: TB-210520
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 00:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/28/21 11:04
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	123		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-30
Client ID: FB-210520-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 17:55
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 18:01
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 11:50
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	77		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32
Client ID: FB-210520-3
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 15:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/24/21 18:08
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32 Date Collected: 05/20/21 15:00
Client ID: FB-210520-3 Date Received: 05/20/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 12:15
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	79		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/30/21 09:23
Analyst: NLK
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/24/21 16:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/24/21 15:38

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 29-32 Batch: WG1502976-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 31-32 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/26/21 08:07
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1504146-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/27/21 21:41
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06-17 Batch: WG1504906-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	0.00065	J	mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/28/21 10:40
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 29 Batch: WG1505308-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/28/21 16:46
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 22,24-28 Batch: WG1505377-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/30/21 07:17
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,18-21,23,28,33 Batch: WG1506022-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 29-32 Batch: WG1502976-2								
1,2-Dibromoethane	90		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 31-32 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1504146-3 WG1504146-4								
Methyl tert butyl ether	118		119		66-130	1		30
Benzene	116		113		70-130	3		30
1,2-Dichloroethane	113		113		70-130	0		30
Toluene	115		112		70-130	3		30
1,2-Dibromoethane	109		110		70-130	1		30
Ethylbenzene	113		110		70-130	3		30
p/m-Xylene	104		101		70-130	3		30
o-Xylene	103		101		70-130	2		30
Isopropylbenzene	117		111		70-130	5		30
1,3,5-Trimethylbenzene	113		109		70-130	4		30
1,2,4-Trimethylbenzene	111		107		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06-17 Batch: WG1504906-3 WG1504906-4								
Methyl tert butyl ether	103		109		66-130	6		30
Benzene	107		105		70-130	2		30
1,2-Dichloroethane	120		124		70-130	3		30
Toluene	108		104		70-130	4		30
1,2-Dibromoethane	100		103		70-130	3		30
Ethylbenzene	109		105		70-130	4		30
p/m-Xylene	99		96		70-130	3		30
o-Xylene	100		97		70-130	3		30
Isopropylbenzene	114		111		70-130	3		30
1,3,5-Trimethylbenzene	113		110		70-130	3		30
1,2,4-Trimethylbenzene	112		109		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	115		119		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	121		118		70-130
Dibromofluoromethane	96		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 29 Batch: WG1505308-3 WG1505308-4								
Methyl tert butyl ether	95		95		63-130	0		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	98		98		70-130	0		20
Toluene	95		93		70-130	2		20
Ethylbenzene	97		96		70-130	1		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		100		70-130	5		20
Isopropylbenzene	94		95		70-130	1		20
1,3,5-Trimethylbenzene	91		91		64-130	0		20
1,2,4-Trimethylbenzene	93		93		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		91		70-130
Toluene-d8	92		93		70-130
4-Bromofluorobenzene	90		91		70-130
Dibromofluoromethane	103		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 22,24-28 Batch: WG1505377-3 WG1505377-4								
Methyl tert butyl ether	105		110		66-130	5		30
Benzene	111		106		70-130	5		30
1,2-Dichloroethane	115		112		70-130	3		30
Toluene	108		97		70-130	11		30
1,2-Dibromoethane	120		116		70-130	3		30
Ethylbenzene	105		98		70-130	7		30
p/m-Xylene	112		103		70-130	8		30
o-Xylene	110		101		70-130	9		30
Isopropylbenzene	96		92		70-130	4		30
1,3,5-Trimethylbenzene	105		97		70-130	8		30
1,2,4-Trimethylbenzene	106		99		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	102		98		70-130
4-Bromofluorobenzene	91		94		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,18-21,23,28,33 Batch: WG1506022-3 WG1506022-4								
Methyl tert butyl ether	97		97		66-130	0		30
Benzene	93		93		70-130	0		30
1,2-Dichloroethane	91		92		70-130	1		30
Toluene	88		89		70-130	1		30
1,2-Dibromoethane	107		106		70-130	1		30
Ethylbenzene	86		86		70-130	0		30
p/m-Xylene	91		90		70-130	1		30
o-Xylene	90		89		70-130	1		30
Isopropylbenzene	89		90		70-130	1		30
1,3,5-Trimethylbenzene	88		89		70-130	1		30
1,2,4-Trimethylbenzene	89		90		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		89		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	92		92		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01 D
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 15:28
Analyst: DV
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.089		mg/kg	0.036	0.0065	5
Fluorene	0.082		mg/kg	0.036	0.0043	5
Phenanthrene	1.1		mg/kg	0.036	0.0031	5
Anthracene	0.32		mg/kg	0.036	0.0029	5
Pyrene	1.5		mg/kg	0.036	0.0025	5
Benzo(a)anthracene	1.2		mg/kg	0.036	0.0034	5
Chrysene	0.84		mg/kg	0.036	0.0027	5
Benzo(b)fluoranthene	1.3		mg/kg	0.036	0.0034	5
Benzo(a)pyrene	0.96		mg/kg	0.036	0.0043	5
Benzo(ghi)perylene	0.59		mg/kg	0.036	0.0031	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**137**	Q	23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02 D
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 17:59
Analyst: DV
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.014	J	mg/kg	0.072	0.013	10
Fluorene	0.10		mg/kg	0.072	0.0086	10
Phenanthrene	2.4		mg/kg	0.072	0.0061	10
Anthracene	0.85		mg/kg	0.072	0.0057	10
Pyrene	2.4		mg/kg	0.072	0.0050	10
Benzo(a)anthracene	0.34		mg/kg	0.072	0.0068	10
Chrysene	0.32		mg/kg	0.072	0.0054	10
Benzo(b)fluoranthene	0.56		mg/kg	0.072	0.0068	10
Benzo(a)pyrene	0.37		mg/kg	0.072	0.0086	10
Benzo(ghi)perylene	0.38		mg/kg	0.072	0.0061	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	48		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03 D
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 16:01
Analyst: DV
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.098		mg/kg	0.016	0.0028	2
Fluorene	0.27		mg/kg	0.016	0.0019	2
Phenanthrene	1.0		mg/kg	0.016	0.0013	2
Anthracene	0.17		mg/kg	0.016	0.0013	2
Pyrene	0.40		mg/kg	0.016	0.0011	2
Benzo(a)anthracene	0.11		mg/kg	0.016	0.0015	2
Chrysene	0.087		mg/kg	0.016	0.0012	2
Benzo(b)fluoranthene	0.13		mg/kg	0.016	0.0015	2
Benzo(a)pyrene	0.096		mg/kg	0.016	0.0019	2
Benzo(ghi)perylene	0.079		mg/kg	0.016	0.0013	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**148**	Q	23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 12:29
Analyst: JJW
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.014		mg/kg	0.010	0.0018	1
Fluorene	0.037		mg/kg	0.010	0.0012	1
Phenanthrene	0.14		mg/kg	0.010	0.00085	1
Anthracene	0.032		mg/kg	0.010	0.00080	1
Pyrene	0.067		mg/kg	0.010	0.00070	1
Benzo(a)anthracene	0.022		mg/kg	0.010	0.00096	1
Chrysene	0.016		mg/kg	0.010	0.00075	1
Benzo(b)fluoranthene	0.024		mg/kg	0.010	0.00096	1
Benzo(a)pyrene	0.017		mg/kg	0.010	0.0012	1
Benzo(ghi)perylene	0.013		mg/kg	0.010	0.00085	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**133**	Q	23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05
Client ID: PB-663-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 12:46
Analyst: JJW
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0019	J	mg/kg	0.0077	0.0014	1
Fluorene	0.0018	J	mg/kg	0.0077	0.00092	1
Phenanthrene	0.015		mg/kg	0.0077	0.00065	1
Anthracene	0.0078		mg/kg	0.0077	0.00061	1
Pyrene	0.053		mg/kg	0.0077	0.00054	1
Benzo(a)anthracene	0.055		mg/kg	0.0077	0.00073	1
Chrysene	0.038		mg/kg	0.0077	0.00057	1
Benzo(b)fluoranthene	0.040		mg/kg	0.0077	0.00073	1
Benzo(a)pyrene	0.024		mg/kg	0.0077	0.00092	1
Benzo(ghi)perylene	0.0084		mg/kg	0.0077	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06 D
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 16:17
Analyst: DV
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.1		mg/kg	0.48	0.086	50
Fluorene	2.6		mg/kg	0.48	0.057	50
Phenanthrene	19.		mg/kg	0.48	0.040	50
Anthracene	6.2		mg/kg	0.48	0.038	50
Pyrene	24.		mg/kg	0.48	0.033	50
Benzo(a)anthracene	14.		mg/kg	0.48	0.045	50
Chrysene	11.		mg/kg	0.48	0.036	50
Benzo(b)fluoranthene	19.		mg/kg	0.48	0.045	50
Benzo(a)pyrene	18.		mg/kg	0.48	0.057	50
Benzo(ghi)perylene	12.		mg/kg	0.48	0.040	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 13:02
Analyst: JJW
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0068	J	mg/kg	0.0075	0.0013	1
Fluorene	0.017		mg/kg	0.0075	0.00090	1
Phenanthrene	0.21		mg/kg	0.0075	0.00064	1
Anthracene	0.054		mg/kg	0.0075	0.00060	1
Pyrene	0.28		mg/kg	0.0075	0.00052	1
Benzo(a)anthracene	0.20		mg/kg	0.0075	0.00071	1
Chrysene	0.15		mg/kg	0.0075	0.00056	1
Benzo(b)fluoranthene	0.25		mg/kg	0.0075	0.00071	1
Benzo(a)pyrene	0.18		mg/kg	0.0075	0.00090	1
Benzo(ghi)perylene	0.12		mg/kg	0.0075	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08 D
Client ID: PB-672-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 09:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 18:16
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.035	J	mg/kg	0.076	0.014	10
Fluorene	0.14		mg/kg	0.076	0.0091	10
Phenanthrene	2.9		mg/kg	0.076	0.0065	10
Anthracene	0.53		mg/kg	0.076	0.0061	10
Pyrene	3.7		mg/kg	0.076	0.0053	10
Benzo(a)anthracene	2.0		mg/kg	0.076	0.0072	10
Chrysene	1.8		mg/kg	0.076	0.0057	10
Benzo(b)fluoranthene	2.2		mg/kg	0.076	0.0072	10
Benzo(a)pyrene	1.7		mg/kg	0.076	0.0091	10
Benzo(ghi)perylene	1.0		mg/kg	0.076	0.0065	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	90		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09 D
Client ID: PB-672-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:05
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 18:32
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	2.4		mg/kg	0.20	0.035	25
Fluorene	1.8		mg/kg	0.20	0.023	25
Phenanthrene	15.		mg/kg	0.20	0.016	25
Anthracene	3.8		mg/kg	0.20	0.016	25
Pyrene	14.		mg/kg	0.20	0.014	25
Benzo(a)anthracene	7.9		mg/kg	0.20	0.018	25
Chrysene	6.6		mg/kg	0.20	0.015	25
Benzo(b)fluoranthene	8.1		mg/kg	0.20	0.018	25
Benzo(a)pyrene	6.5		mg/kg	0.20	0.023	25
Benzo(ghi)perylene	3.3		mg/kg	0.20	0.016	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10
Client ID: PB-672-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 13:18
Analyst: JJW
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.011		mg/kg	0.0078	0.0014	1
Fluorene	0.0035	J	mg/kg	0.0078	0.00093	1
Phenanthrene	0.078		mg/kg	0.0078	0.00066	1
Anthracene	0.017		mg/kg	0.0078	0.00062	1
Pyrene	0.12		mg/kg	0.0078	0.00054	1
Benzo(a)anthracene	0.094		mg/kg	0.0078	0.00074	1
Chrysene	0.068		mg/kg	0.0078	0.00058	1
Benzo(b)fluoranthene	0.10		mg/kg	0.0078	0.00074	1
Benzo(a)pyrene	0.083		mg/kg	0.0078	0.00093	1
Benzo(ghi)perylene	0.042		mg/kg	0.0078	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**122**	Q	23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11 D
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 18:49
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.038	0.0068	5
Fluorene	0.0089	J	mg/kg	0.038	0.0045	5
Phenanthrene	0.099		mg/kg	0.038	0.0032	5
Anthracene	0.071		mg/kg	0.038	0.0030	5
Pyrene	1.1		mg/kg	0.038	0.0026	5
Benzo(a)anthracene	0.80		mg/kg	0.038	0.0036	5
Chrysene	0.64		mg/kg	0.038	0.0028	5
Benzo(b)fluoranthene	0.92		mg/kg	0.038	0.0036	5
Benzo(a)pyrene	0.78		mg/kg	0.038	0.0045	5
Benzo(ghi)perylene	0.45		mg/kg	0.038	0.0032	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 13:51
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.0076	0.0014	1
Fluorene	0.0010	J	mg/kg	0.0076	0.00091	1
Phenanthrene	0.0045	J	mg/kg	0.0076	0.00064	1
Anthracene	0.00098	J	mg/kg	0.0076	0.00060	1
Pyrene	0.0025	J	mg/kg	0.0076	0.00053	1
Benzo(a)anthracene	0.0013	J	mg/kg	0.0076	0.00072	1
Chrysene	0.00087	J	mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.0016	J	mg/kg	0.0076	0.00072	1
Benzo(a)pyrene	0.0011	J	mg/kg	0.0076	0.00091	1
Benzo(ghi)perylene	0.0017	J	mg/kg	0.0076	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 14:07
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0037	J	mg/kg	0.0077	0.0014	1
Fluorene	0.0012	J	mg/kg	0.0077	0.00092	1
Phenanthrene	0.058		mg/kg	0.0077	0.00065	1
Anthracene	0.014		mg/kg	0.0077	0.00062	1
Pyrene	0.22		mg/kg	0.0077	0.00054	1
Benzo(a)anthracene	0.16		mg/kg	0.0077	0.00073	1
Chrysene	0.13		mg/kg	0.0077	0.00058	1
Benzo(b)fluoranthene	0.21		mg/kg	0.0077	0.00073	1
Benzo(a)pyrene	0.15		mg/kg	0.0077	0.00092	1
Benzo(ghi)perylene	0.10		mg/kg	0.0077	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**136**	Q	23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14 D
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:05
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.020	J	mg/kg	0.039	0.0071	5
Fluorene	0.19		mg/kg	0.039	0.0047	5
Phenanthrene	2.6		mg/kg	0.039	0.0034	5
Anthracene	0.68		mg/kg	0.039	0.0032	5
Pyrene	2.7		mg/kg	0.039	0.0028	5
Benzo(a)anthracene	1.4		mg/kg	0.039	0.0038	5
Chrysene	1.2		mg/kg	0.039	0.0030	5
Benzo(b)fluoranthene	1.2		mg/kg	0.039	0.0038	5
Benzo(a)pyrene	1.1		mg/kg	0.039	0.0047	5
Benzo(ghi)perylene	0.58		mg/kg	0.039	0.0034	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 14:40
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0023	J	mg/kg	0.0078	0.0014	1
Fluorene	ND		mg/kg	0.0078	0.00094	1
Phenanthrene	0.0018	J	mg/kg	0.0078	0.00066	1
Anthracene	0.0021	J	mg/kg	0.0078	0.00062	1
Pyrene	0.012		mg/kg	0.0078	0.00055	1
Benzo(a)anthracene	0.013		mg/kg	0.0078	0.00074	1
Chrysene	0.012		mg/kg	0.0078	0.00059	1
Benzo(b)fluoranthene	0.032		mg/kg	0.0078	0.00074	1
Benzo(a)pyrene	0.023		mg/kg	0.0078	0.00094	1
Benzo(ghi)perylene	0.023		mg/kg	0.0078	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**145**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 14:56
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.0076	0.0014	1
Fluorene	ND		mg/kg	0.0076	0.00092	1
Phenanthrene	0.00084	J	mg/kg	0.0076	0.00065	1
Anthracene	ND		mg/kg	0.0076	0.00061	1
Pyrene	0.0011	J	mg/kg	0.0076	0.00054	1
Benzo(a)anthracene	0.0015	J	mg/kg	0.0076	0.00073	1
Chrysene	0.00096	J	mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.0032	J	mg/kg	0.0076	0.00073	1
Benzo(a)pyrene	0.0022	J	mg/kg	0.0076	0.00092	1
Benzo(ghi)perylene	0.0046	J	mg/kg	0.0076	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17 D
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:22
Analyst: DV
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		mg/kg	0.016	0.0029	2
Fluorene	ND		mg/kg	0.016	0.0020	2
Phenanthrene	0.0039	J	mg/kg	0.016	0.0014	2
Anthracene	ND		mg/kg	0.016	0.0013	2
Pyrene	0.0076	J	mg/kg	0.016	0.0011	2
Benzo(a)anthracene	0.0061	J	mg/kg	0.016	0.0016	2
Chrysene	0.0048	J	mg/kg	0.016	0.0012	2
Benzo(b)fluoranthene	0.0069	J	mg/kg	0.016	0.0016	2
Benzo(a)pyrene	0.0054	J	mg/kg	0.016	0.0020	2
Benzo(ghi)perylene	0.0031	J	mg/kg	0.016	0.0014	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18
Client ID: PB-672-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 11:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 17:22
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.044		mg/kg	0.0076	0.0014	1
Fluorene	0.059		mg/kg	0.0076	0.00092	1
Phenanthrene	0.34		mg/kg	0.0076	0.00065	1
Anthracene	0.080		mg/kg	0.0076	0.00061	1
Pyrene	0.33		mg/kg	0.0076	0.00053	1
Benzo(a)anthracene	0.24		mg/kg	0.0076	0.00072	1
Chrysene	0.18		mg/kg	0.0076	0.00057	1
Benzo(b)fluoranthene	0.28		mg/kg	0.0076	0.00072	1
Benzo(a)pyrene	0.22		mg/kg	0.0076	0.00092	1
Benzo(ghi)perylene	0.11		mg/kg	0.0076	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**132**	Q	23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19 D
Client ID: PB-672-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:38
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	8.1		mg/kg	0.15	0.028	20
Fluorene	0.73		mg/kg	0.15	0.018	20
Phenanthrene	0.58		mg/kg	0.15	0.013	20
Anthracene	0.14	J	mg/kg	0.15	0.012	20
Pyrene	0.62		mg/kg	0.15	0.011	20
Benzo(a)anthracene	0.47		mg/kg	0.15	0.015	20
Chrysene	0.40		mg/kg	0.15	0.012	20
Benzo(b)fluoranthene	0.58		mg/kg	0.15	0.015	20
Benzo(a)pyrene	0.48		mg/kg	0.15	0.018	20
Benzo(ghi)perylene	0.27		mg/kg	0.15	0.013	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20 D
Client ID: PB-672-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 12:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 17:55
Analyst: DV
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/02/21 00:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.028		mg/kg	0.015	0.0028	2
Fluorene	0.039		mg/kg	0.015	0.0018	2
Phenanthrene	0.22		mg/kg	0.015	0.0013	2
Anthracene	0.073		mg/kg	0.015	0.0012	2
Pyrene	0.30		mg/kg	0.015	0.0011	2
Benzo(a)anthracene	0.24		mg/kg	0.015	0.0015	2
Chrysene	0.16		mg/kg	0.015	0.0012	2
Benzo(b)fluoranthene	0.26		mg/kg	0.015	0.0015	2
Benzo(a)pyrene	0.24		mg/kg	0.015	0.0018	2
Benzo(ghi)perylene	0.12		mg/kg	0.015	0.0013	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 19:55
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0050	J	mg/kg	0.0079	0.0014	1
Fluorene	0.0020	J	mg/kg	0.0079	0.00095	1
Phenanthrene	0.026		mg/kg	0.0079	0.00067	1
Anthracene	0.0076	J	mg/kg	0.0079	0.00063	1
Pyrene	0.048		mg/kg	0.0079	0.00055	1
Benzo(a)anthracene	0.036		mg/kg	0.0079	0.00075	1
Chrysene	0.032		mg/kg	0.0079	0.00059	1
Benzo(b)fluoranthene	0.042		mg/kg	0.0079	0.00075	1
Benzo(a)pyrene	0.030		mg/kg	0.0079	0.00095	1
Benzo(ghi)perylene	0.015		mg/kg	0.0079	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 19:28
Analyst: DV
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0019	J	mg/kg	0.0078	0.0014	1
Fluorene	ND		mg/kg	0.0078	0.00093	1
Phenanthrene	0.0035	J	mg/kg	0.0078	0.00066	1
Anthracene	0.00082	J	mg/kg	0.0078	0.00062	1
Pyrene	0.0055	J	mg/kg	0.0078	0.00054	1
Benzo(a)anthracene	0.0045	J	mg/kg	0.0078	0.00074	1
Chrysene	0.0036	J	mg/kg	0.0078	0.00058	1
Benzo(b)fluoranthene	0.0043	J	mg/kg	0.0078	0.00074	1
Benzo(a)pyrene	0.0029	J	mg/kg	0.0078	0.00093	1
Benzo(ghi)perylene	0.0020	J	mg/kg	0.0078	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	98		30-120
4-Terphenyl-d14	104		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 19:45
Analyst: DV
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.011		mg/kg	0.0081	0.0015	1
Fluorene	0.011		mg/kg	0.0081	0.00097	1
Phenanthrene	0.12		mg/kg	0.0081	0.00069	1
Anthracene	0.028		mg/kg	0.0081	0.00065	1
Pyrene	0.18		mg/kg	0.0081	0.00057	1
Benzo(a)anthracene	0.11		mg/kg	0.0081	0.00077	1
Chrysene	0.088		mg/kg	0.0081	0.00061	1
Benzo(b)fluoranthene	0.11		mg/kg	0.0081	0.00077	1
Benzo(a)pyrene	0.086		mg/kg	0.0081	0.00097	1
Benzo(ghi)perylene	0.054		mg/kg	0.0081	0.00069	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 20:01
Analyst: DV
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.050		mg/kg	0.0083	0.0015	1
Fluorene	0.0039	J	mg/kg	0.0083	0.0010	1
Phenanthrene	0.041		mg/kg	0.0083	0.00070	1
Anthracene	0.013		mg/kg	0.0083	0.00066	1
Pyrene	0.086		mg/kg	0.0083	0.00058	1
Benzo(a)anthracene	0.069		mg/kg	0.0083	0.00079	1
Chrysene	0.057		mg/kg	0.0083	0.00062	1
Benzo(b)fluoranthene	0.068		mg/kg	0.0083	0.00079	1
Benzo(a)pyrene	0.056		mg/kg	0.0083	0.0010	1
Benzo(ghi)perylene	0.036		mg/kg	0.0083	0.00070	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25
Client ID: PB-672-19-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 13:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 20:18
Analyst: DV
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0017	J	mg/kg	0.0080	0.0014	1
Fluorene	ND		mg/kg	0.0080	0.00096	1
Phenanthrene	0.0049	J	mg/kg	0.0080	0.00068	1
Anthracene	0.0010	J	mg/kg	0.0080	0.00064	1
Pyrene	0.010		mg/kg	0.0080	0.00056	1
Benzo(a)anthracene	0.0069	J	mg/kg	0.0080	0.00076	1
Chrysene	0.0048	J	mg/kg	0.0080	0.00060	1
Benzo(b)fluoranthene	0.0068	J	mg/kg	0.0080	0.00076	1
Benzo(a)pyrene	0.0053	J	mg/kg	0.0080	0.00096	1
Benzo(ghi)perylene	0.0038	J	mg/kg	0.0080	0.00068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	91		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26 D
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/05/21 15:42
Analyst: JJW
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.15	J	mg/kg	0.16	0.029	20
Fluorene	0.66		mg/kg	0.16	0.019	20
Phenanthrene	6.7		mg/kg	0.16	0.014	20
Anthracene	2.5		mg/kg	0.16	0.013	20
Pyrene	8.8		mg/kg	0.16	0.011	20
Benzo(a)anthracene	7.0		mg/kg	0.16	0.015	20
Chrysene	5.1		mg/kg	0.16	0.012	20
Benzo(b)fluoranthene	6.0		mg/kg	0.16	0.015	20
Benzo(a)pyrene	4.6		mg/kg	0.16	0.019	20
Benzo(ghi)perylene	1.9		mg/kg	0.16	0.014	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 20:11
Analyst: DV
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0069	J	mg/kg	0.0077	0.0014	1
Fluorene	0.0042	J	mg/kg	0.0077	0.00092	1
Phenanthrene	0.020		mg/kg	0.0077	0.00066	1
Anthracene	0.0044	J	mg/kg	0.0077	0.00062	1
Pyrene	0.030		mg/kg	0.0077	0.00054	1
Benzo(a)anthracene	0.020		mg/kg	0.0077	0.00073	1
Chrysene	0.019		mg/kg	0.0077	0.00058	1
Benzo(b)fluoranthene	0.024		mg/kg	0.0077	0.00073	1
Benzo(a)pyrene	0.022		mg/kg	0.0077	0.00092	1
Benzo(ghi)perylene	0.017		mg/kg	0.0077	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28 D
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 21:07
Analyst: DV
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.17		mg/kg	0.040	0.0073	5
Fluorene	0.050		mg/kg	0.040	0.0048	5
Phenanthrene	0.87		mg/kg	0.040	0.0034	5
Anthracene	0.23		mg/kg	0.040	0.0032	5
Pyrene	2.0		mg/kg	0.040	0.0028	5
Benzo(a)anthracene	1.5		mg/kg	0.040	0.0038	5
Chrysene	1.2		mg/kg	0.040	0.0030	5
Benzo(b)fluoranthene	1.5		mg/kg	0.040	0.0038	5
Benzo(a)pyrene	1.3		mg/kg	0.040	0.0048	5
Benzo(ghi)perylene	1.0		mg/kg	0.040	0.0034	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-30
Client ID: FB-210520-1
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:50
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	85		15-120
4-Terphenyl-d14	95		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 22:09
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 20:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	77		15-120
4-Terphenyl-d14	86		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32
Client ID: FB-210520-3
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 15:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/28/21 17:58
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/27/21 18:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	80		15-120
4-Terphenyl-d14	88		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 20:28
Analyst: DV
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.0055	J	mg/kg	0.0088	0.0016	1
Fluorene	0.0066	J	mg/kg	0.0088	0.0010	1
Phenanthrene	0.15		mg/kg	0.0088	0.00075	1
Anthracene	0.034		mg/kg	0.0088	0.00070	1
Pyrene	0.22		mg/kg	0.0088	0.00062	1
Benzo(a)anthracene	0.15		mg/kg	0.0088	0.00084	1
Chrysene	0.11		mg/kg	0.0088	0.00066	1
Benzo(b)fluoranthene	0.14		mg/kg	0.0088	0.00084	1
Benzo(a)pyrene	0.11		mg/kg	0.0088	0.0010	1
Benzo(ghi)perylene	0.062		mg/kg	0.0088	0.00075	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:12
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 30-32 Batch: WG1504177-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	0.02	J	ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		21-120
Phenol-d6	62		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	93		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	105		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 10:56
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-20 Batch: WG1506297-1					
Naphthalene	ND		mg/kg	0.0065	0.0012
Fluorene	ND		mg/kg	0.0065	0.00078
Phenanthrene	ND		mg/kg	0.0065	0.00056
Anthracene	ND		mg/kg	0.0065	0.00052
Pyrene	ND		mg/kg	0.0065	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0065	0.00062
Chrysene	ND		mg/kg	0.0065	0.00049
Benzo(b)fluoranthene	ND		mg/kg	0.0065	0.00062
Benzo(a)pyrene	ND		mg/kg	0.0065	0.00078
Benzo(ghi)perylene	ND		mg/kg	0.0065	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	85		25-120
Phenol-d6	91		10-120
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	81		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/03/21 18:56
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 06/01/21 23:51

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 21-28,33 Batch: WG1506298-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00052
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0066	0.00062
Chrysene	ND		mg/kg	0.0066	0.00049
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00062
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	95		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	92		30-120
2,4,6-Tribromophenol	109		10-136
4-Terphenyl-d14	102		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 30-32 Batch: WG1504177-2 WG1504177-3								
Naphthalene	77		77		40-140	0		40
Fluorene	82		81		40-140	1		40
Phenanthrene	84		83		40-140	1		40
Anthracene	85		85		40-140	0		40
Pyrene	84		81		26-127	4		40
Benzo(a)anthracene	86		82		40-140	5		40
Chrysene	84		84		40-140	0		40
Benzo(b)fluoranthene	90		85		40-140	6		40
Benzo(a)pyrene	90		87		40-140	3		40
Benzo(ghi)perylene	87		85		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		75		21-120
Phenol-d6	60		60		10-120
Nitrobenzene-d5	93		94		23-120
2-Fluorobiphenyl	80		80		15-120
2,4,6-Tribromophenol	82		83		10-120
4-Terphenyl-d14	89		87		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-20 Batch: WG1506297-2 WG1506297-3								
Naphthalene	81		88		40-140	8		50
Fluorene	82		89		40-140	8		50
Phenanthrene	82		89		40-140	8		50
Anthracene	88		94		40-140	7		50
Pyrene	84		92		35-142	9		50
Benzo(a)anthracene	89		96		40-140	8		50
Chrysene	80		88		40-140	10		50
Benzo(b)fluoranthene	90		103		40-140	13		50
Benzo(a)pyrene	93		99		40-140	6		50
Benzo(ghi)perylene	88		94		40-140	7		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	86		92		25-120
Phenol-d6	92		99		10-120
Nitrobenzene-d5	101		108		23-120
2-Fluorobiphenyl	81		86		30-120
2,4,6-Tribromophenol	92		101		10-136
4-Terphenyl-d14	79		86		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 21-28,33 Batch: WG1506298-2 WG1506298-3								
Naphthalene	93		82		40-140	13		50
Fluorene	106		92		40-140	14		50
Phenanthrene	103		92		40-140	11		50
Anthracene	109		98		40-140	11		50
Pyrene	113		99		35-142	13		50
Benzo(a)anthracene	109		101		40-140	8		50
Chrysene	103		89		40-140	15		50
Benzo(b)fluoranthene	114		100		40-140	13		50
Benzo(a)pyrene	114		101		40-140	12		50
Benzo(ghi)perylene	108		98		40-140	10		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	85		88		25-120
Phenol-d6	84		86		10-120
Nitrobenzene-d5	89		90		23-120
2-Fluorobiphenyl	98		86		30-120
2,4,6-Tribromophenol	116		103		10-136
4-Terphenyl-d14	106		95		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	28.7		mg/kg	2.13	0.114	1	05/30/21 11:45	06/01/21 20:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2010		mg/kg	2.16	0.116	1	05/30/21 11:45	06/01/21 20:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3420		mg/kg	2.27	0.122	1	05/30/21 11:45	06/01/21 20:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2430		mg/kg	2.97	0.159	1	05/30/21 11:45	06/01/21 21:06	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05 Date Collected: 05/20/21 08:40

Client ID: PB-663-13-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	73.6		mg/kg	2.27	0.122	1	05/30/21 11:45	06/01/21 21:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	34.4		mg/kg	2.74	0.147	1	05/30/21 11:45	06/01/21 21:16	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	52.1		mg/kg	2.28	0.122	1	05/30/21 11:45	06/01/21 21:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08 Date Collected: 05/20/21 09:55

Client ID: PB-672-02-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.8		mg/kg	2.26	0.121	1	05/30/21 11:45	06/01/21 21:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09 Date Collected: 05/20/21 10:05

Client ID: PB-672-03-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	23.4		mg/kg	2.31	0.124	1	05/30/21 11:45	06/01/21 21:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10 Date Collected: 05/20/21 10:10

Client ID: PB-672-04-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.1		mg/kg	2.21	0.118	1	05/30/21 11:45	06/01/21 21:36	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.4		mg/kg	2.30	0.123	1	05/30/21 11:45	06/01/21 21:41	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.6		mg/kg	2.23	0.120	1	05/30/21 11:45	06/01/21 21:47	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.4		mg/kg	2.24	0.120	1	05/30/21 11:45	06/01/21 21:52	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	22.8		mg/kg	2.33	0.125	1	05/30/21 11:45	06/01/21 22:07	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.5		mg/kg	2.22	0.119	1	05/30/21 11:45	06/01/21 22:11	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.7		mg/kg	2.26	0.121	1	05/30/21 11:45	06/01/21 22:17	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.2		mg/kg	2.35	0.126	1	05/30/21 11:45	06/01/21 22:22	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18 Date Collected: 05/20/21 11:55

Client ID: PB-672-12-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	133		mg/kg	2.28	0.122	1	05/30/21 11:45	06/01/21 22:27	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19 Date Collected: 05/20/21 12:10

Client ID: PB-672-13-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.2		mg/kg	2.30	0.123	1	05/30/21 11:45	06/01/21 22:32	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20 Date Collected: 05/20/21 12:25

Client ID: PB-672-14-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	128		mg/kg	2.29	0.122	1	05/30/21 11:45	06/01/21 22:37	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	18.1		mg/kg	2.31	0.124	1	05/29/21 11:00	06/01/21 12:40	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	34.5		mg/kg	2.29	0.123	1	05/29/21 11:00	06/01/21 12:45	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	80.6		mg/kg	2.41	0.129	1	05/29/21 11:00	06/01/21 12:50	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.3		mg/kg	2.42	0.130	1	05/29/21 11:00	06/01/21 12:55	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25 Date Collected: 05/20/21 13:55

Client ID: PB-672-19-SS01 Date Received: 05/20/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.1		mg/kg	2.27	0.122	1	05/29/21 11:00	06/01/21 13:00	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	45.4		mg/kg	2.28	0.122	1	05/29/21 11:00	06/01/21 13:05	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	15.2		mg/kg	2.20	0.118	1	05/29/21 11:00	06/01/21 13:11	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	292		mg/kg	2.37	0.127	1	05/29/21 11:00	06/01/21 13:16	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-30
Client ID: FB-210520-1
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:40
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:13	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-31
Client ID: FB-210520-2
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 14:45
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:18	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-32
Client ID: FB-210520-3
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 15:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:23	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126821
Project Number: 200.00135.005
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA
Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	54.9		mg/kg	2.63	0.141	1	05/29/21 11:00	06/01/21 13:21	EPA 3050B	1,6010D	GD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126821

Project Number: 200.00135.005 **Report Date:** 06/08/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 30-32 Batch: WG1502834-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	05/26/21 20:46	1,6020B	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-20 Batch: WG1505049-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/30/21 11:45	06/01/21 20:07	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21-28,33 Batch: WG1505050-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/29/21 11:00	06/01/21 08:44	1,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 30-32 Batch: WG1502834-2								
Lead, Total	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-20 Batch: WG1505049-2 SRM Lot Number: D109-540								
Lead, Total	88		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 21-28,33 Batch: WG1505050-2 SRM Lot Number: D109-540								
Lead, Total	103		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 30-32 QC Batch ID: WG1502834-3 QC Sample: L2126825-11 Client ID: MS Sample												
Lead, Total	ND	510	531.0	104		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1505049-3 QC Sample: L2126821-01 Client ID: PB-663-08-SS01												
Lead, Total	28.7	43.4	67.1	88		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21-28,33 QC Batch ID: WG1505050-3 QC Sample: L2125274-01 Client ID: MS Sample												
Lead, Total	34.3	64.8	88.6	84		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 30-32 QC Batch ID: WG1502834-4 QC Sample: L2126825-11 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1505049-4 QC Sample: L2126821-01 Client ID: PB-663-08-SS01						
Lead, Total	28.7	27.5	mg/kg	4		20
Total Metals - Mansfield Lab Associated sample(s): 21-28,33 QC Batch ID: WG1505050-4 QC Sample: L2125274-01 Client ID: DUP Sample						
Lead, Total	34.3	39.2	mg/kg	13		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-01
Client ID: PB-663-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-02
Client ID: PB-663-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-03
Client ID: PB-663-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:18
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-04
Client ID: PB-663-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:30
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.2		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-05
Client ID: PB-663-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-06
Client ID: PB-663-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-07
Client ID: PB-672-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 09:45
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-08
Client ID: PB-672-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 09:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.0		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-09
Client ID: PB-672-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:05
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-10
Client ID: PB-672-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 05/20/21 10:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-11
Client ID: PB-672-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:20
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-12
Client ID: PB-672-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-13
Client ID: PB-672-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 10:45
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.0		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-14
Client ID: PB-672-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:00
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.7		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-15
Client ID: PB-672-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:15
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-16
Client ID: PB-672-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:25
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-17
Client ID: PB-672-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.4		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-18
Client ID: PB-672-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 11:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-19
Client ID: PB-672-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 12:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-20
Client ID: PB-672-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 12:25
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.9		%	0.100	NA	1	-	05/22/21 09:33	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-21
Client ID: PB-672-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:20
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-22
Client ID: PB-672-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:30
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-23
Client ID: PB-672-17-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:40
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-24
Client ID: PB-672-18-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:50
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-25
Client ID: PB-672-19-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 13:55
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-26
Client ID: PB-672-20-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 14:10
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-27
Client ID: PB-672-21-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 14:15
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-28
Client ID: PB-672-22-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 14:30
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.6		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126821
Report Date: 06/08/21

SAMPLE RESULTS

Lab ID: L2126821-33
Client ID: DUP-02
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/20/21 08:00
Date Received: 05/20/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.3		%	0.100	NA	1	-	05/22/21 11:28	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126821

Report Date: 06/08/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-20 QC Batch ID: WG1502360-1 QC Sample: L2126821-01 Client ID: PB-663-08-SS01						
Solids, Total	91.1	91.7	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 21-28,33 QC Batch ID: WG1502376-1 QC Sample: L2127149-24 Client ID: DUP Sample						
Solids, Total	86.0	85.5	%	1		20

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-01A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-01B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-01C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-01D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-01F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-02A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-02B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-02C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-02D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-02F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-03A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-03B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-03C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-03D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-03F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-04A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-04B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-04C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-04D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-04F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-05A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-05B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-05C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-05D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-05F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-06A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-06B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-06C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-06D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-06F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-07A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-07B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-07C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-07D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-07F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-08A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-08B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-08C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-08D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-08F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)
L2126821-09A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-09B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-09C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-09D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-09F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-10A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-10B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-10C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-10D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-10F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-11A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-11B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-11C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-11D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-11F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-12A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-12B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-12C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-12D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-12F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-13A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-13B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-13C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-13D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-13F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-14A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-14B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-14C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-14D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-14F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-15A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-15B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-15C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-15D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-15F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-16A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-16B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-16C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-16D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-16F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-17A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-17B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-17C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-17D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-17F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-18A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-18B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-18C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-18D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-18E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-18F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-19A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-19B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-19C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-19D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-19F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-20A	Vial MeOH preserved	A	NA		2.9	Y	Absent		PA-8260HLW(14)
L2126821-20B	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-20C	Vial water preserved	A	NA		2.9	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-20D	Plastic 120ml unpreserved	A	NA		2.9	Y	Absent		TS(7)
L2126821-20E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.9	Y	Absent		PB-TI(180)
L2126821-20F	Glass 120ml/4oz unpreserved	A	NA		2.9	Y	Absent		PA-8270SIM(14)
L2126821-21A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-21B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-21C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-21D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-21E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-21F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-22A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-22B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-22C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-22D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-22E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-22F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-23A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-23B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-23C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-23D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-23E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-23F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-24A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-24B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-24C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-24D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-24E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-24F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-25A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-25B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-25C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-25D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-25E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-25F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-26A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-26B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-26C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-26D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-26E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-26F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-27A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-27B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-27C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-27D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-27E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-27F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-28A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2126821-28B	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-28C	Vial water preserved	C	NA		2.5	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-28D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2126821-28E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2126821-28F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-8270SIM(14)
L2126821-29A	Vial HCl preserved	A	NA		2.9	Y	Absent		PA-8260(14)
L2126821-29B	Vial HCl preserved	A	NA		2.9	Y	Absent		8011(14)
L2126821-30A	Vial HCl preserved	A	NA		2.9	Y	Absent		HOLD-8260(14)
L2126821-30B	Vial HCl preserved	A	NA		2.9	Y	Absent		HOLD-8260(14)
L2126821-30C	Vial HCl preserved	A	NA		2.9	Y	Absent		HOLD-8260(14)
L2126821-30D	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126821-30E	Vial Na2S2O3 preserved	A	NA		2.9	Y	Absent		8011(14)
L2126821-30F	Plastic 250ml HNO3 preserved	A	<2	<2	2.9	Y	Absent		PB-6020T-PPB(180)
L2126821-30G	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126821-30H	Amber 250ml unpreserved	A	7	7	2.9	Y	Absent		PA-8270SIM-LVI(7)
L2126821-31A	Vial HCl preserved	C	NA		2.5	Y	Absent		PA-8260(14)
L2126821-31B	Vial HCl preserved	C	NA		2.5	Y	Absent		PA-8260(14)
L2126821-31C	Vial HCl preserved	C	NA		2.5	Y	Absent		PA-8260(14)
L2126821-31D	Vial Na2S2O3 preserved	C	NA		2.5	Y	Absent		8011(14)
L2126821-31E	Vial Na2S2O3 preserved	C	NA		2.5	Y	Absent		8011(14)
L2126821-31F	Plastic 250ml HNO3 preserved	C	<2	<2	2.5	Y	Absent		PB-6020T-PPB(180)
L2126821-31G	Amber 250ml unpreserved	C	7	7	2.5	Y	Absent		PA-8270SIM-LVI(7)
L2126821-31H	Amber 250ml unpreserved	C	7	7	2.5	Y	Absent		PA-8270SIM-LVI(7)
L2126821-32A	Vial HCl preserved	B	NA		4.3	Y	Absent		PA-8260(14)
L2126821-32B	Vial HCl preserved	B	NA		4.3	Y	Absent		PA-8260(14)
L2126821-32C	Vial HCl preserved	B	NA		4.3	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126821
Report Date: 06/08/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126821-32D	Vial Na2S2O3 preserved	B	NA		4.3	Y	Absent		8011(14)
L2126821-32E	Vial Na2S2O3 preserved	B	NA		4.3	Y	Absent		8011(14)
L2126821-32F	Plastic 250ml HNO3 preserved	B	<2	<2	4.3	Y	Absent		PB-6020T-PPB(180)
L2126821-32G	Amber 250ml unpreserved	B	7	7	4.3	Y	Absent		PA-8270SIM-LVI(7)
L2126821-32H	Amber 250ml unpreserved	B	7	7	4.3	Y	Absent		PA-8270SIM-LVI(7)
L2126821-33A	Vial MeOH preserved	B	NA		4.3	Y	Absent		PA-8260HLW(14)
L2126821-33B	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-33C	Vial water preserved	B	NA		4.3	Y	Absent	22-MAY-21 02:50	PA-8260HLW(14)
L2126821-33D	Plastic 120ml unpreserved	B	NA		4.3	Y	Absent		TS(7)
L2126821-33E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.3	Y	Absent		PB-TI(180)
L2126821-33F	Glass 120ml/4oz unpreserved	B	NA		4.3	Y	Absent		PA-8270SIM(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126821
Project Number:	200.00135.005	**Report Date:**	06/08/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

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Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information
Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4574
Fax:
Email: william.schmidt@ransom

Project Information
Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☒ Other Email, ADEX

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Report Only Project Specific Analyte List

Please specify Metals or TAL.
Pader Leaded/Unleaded Gasoline Short List, No 1-6 Fuel Oil Short List, Lead Only

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	METALS (LEAD)	TS	PA-8260 HLM	Sample Specific Comments	Total Bottle
26821-01	PB-663-08-5501	5/20	0800	S	FS	✓	✓	✓	✓		6
-02	PB-663-09-5501		0810			✓	✓	✓	✓		6
-03	PB-663-10-5501		0818			✓	✓	✓	✓		6
-04	PB-663-12-5501		0830			✓	✓	✓	✓		6
-05	PB-663-13-5501		0840			✓	✓	✓	✓		6
-06	PB-663-14-5501		0855			✓	✓	✓	✓		6
-07	PB-672-01-5501		0945			✓	✓	✓	✓		6
-08	PB-672-02-5501		0955			✓	✓	✓	✓		6
-09	PB-672-03-5501		1005			✓	✓	✓	✓		6
-10	PB-672-04-5501		1010			✓	✓	✓	✓		6

Container Type: A A P V
Preservative: A A A F

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545		
	5/20/21		5/20/21 1545
	5/20/21		5/20/21 1730
	5/20/21 2330		5/21/21 0220

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 4

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information

Client: RANSOM CONSULTING

Address: 2 2127 HAMILTON AVE

Phone: 215-901-4974

Fax:

Email: WILLIAM.SCHMIDT@RANSOM

Project Information

Project Name: PHILADELPHIA REFINERY - AST CLOSURE

Project Location: PHILADELPHIA, PA

Project #: 200.00135.005

(Use Project name as Project #)

Project Manager: WILLIAM SCHMIDT

ALPHAQuote #:

Turn-Around Time

Standard ✓ Due Date:

Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced

☐ EQuIS (1 File) ☐ EQuIS (4 File)

☐ Other

Billing Information

✓ Same as Client Info

PO #

Regulatory Requirement

☐ SRS Residential/Non Residential

☐ SRS Impact to Groundwater

☐ NJ Ground Water Quality Standards

☐ NJ IGW SPLP Leachate Criteria

☐ Other

Site Information

Is this site impacted by Petroleum? Yes ✓

Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
SEE Pg. 1

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	METALS (LEAD)	TS	PA-8260 HLM	Sample Specific Comments	Total Bottle
26821 - 11	PB-672-05-5501	5/20	1020	S	TS	✓	✓	✓	✓		6
-12	PB-672-06-5501		1040			✓	✓	✓	✓		6
-13	PB-672-07-5501		1045			✓	✓	✓	✓		6
-14	PB-672-08-5501		1100			✓	✓	✓	✓		6
-15	PB-672-09-5501		1115			✓	✓	✓	✓		6
-16	PB-672-10-5501		1125			✓	✓	✓	✓		6
-17	PB-672-11-5501		1140			✓	✓	✓	✓		6
-18	PB-672-12-5501		1155			✓	✓	✓	✓		6
-19	PB-672-13-5501		1210			✓	✓	✓	✓		6
-20	PB-672-14-5501	↓	1225	↓	↓	✓	✓	✓	✓		6

Container Type	A	A	P	V
Preservative	A	A	A	F

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545	2K.Fm	5/20/21 1545
2K.Fm	5/20/21 1730		5/20/21 1730
	5/20/21 2200		
	5/21/21 0800		5/21/21 0830

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of 3

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email: William.Schmidt@Ransom

Project Information

Project Name: Philadelphia Refinery - AST Closures
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
SEE PG 1

Please specify Metals or TAL.

ANALYSIS

PA-8270 SIM | METALS (LEAD) | TS | PA-8260 HLM

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total # Bottles
26821-21	PB-672-15-5501	5/20	1320	S	TS		6
-22	PB-672-16-5501		1330				6
-23	PB-672-17-5501		1340				6
-24	PB-672-18-5501		1350				6
-25	PB-672-19-5501		1355				6
-26	PB-672-20-5501		1410				6
	~~PB-672-21-5501~~						
-27	PB-672-21-5501		1415	S			6
-28	PB-672-22-5501		1430	S			6
-29	TB-210520			A			

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545	ALPHA	5/20/21 1545
ALPHA	5/20/21 1730		5-21-21 1220
	5/20/21 2206		
	5/21 0200		5/21/21 0233

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No. 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of 4

Date Rec'd in Lab: 5/21/21

ALPHA Job #: L2126821

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-901-4974
Fax:
Email:

Project Information

Project Name: Philadelphia Refinery- AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☑
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
SEE Pg 1

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270SIM-WI	TOTAL LEAD	PA-8260	8011	PA-8270SIM	TOTAL METALS (CSL+LEAD)	TS	PA-8260HLW	Total Bottles
26821-30	FB-210520-1	5/20	1440	A	TS	✓	✓	✓	✓					8
-31	FB-210520-2		1445	A	TS	✓	✓	✓	✓					8
-32	FB-210520-3		1500	A	TS	✓	✓	✓	✓					8
-33	DUP-02	5/20	0800	S	TS					✓	✓	✓	✓	8

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	5/20/21 1545	ALC	5/20/21 1545
ALC	5/20/21 1730		0730 5/21/21
	5/20/21 2305		
			5/21/21 0230

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Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2126948
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY-AST CLOS
Project Number:	200.00135.005
Report Date:	06/09/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126948
Report Date: 06/09/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2126948-01	PB-672-23-SS01	SOIL	PHILADELPHIA, PA	05/21/21 07:40	05/21/21
L2126948-02	FB-210521	WATER	PHILADELPHIA, PA	05/21/21 09:30	05/21/21
L2126948-03	TB-210521	WATER	PHILADELPHIA, PA	05/21/21 00:00	05/21/21

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2126948-03: The analyses performed were specified by the client.

Semivolatile Organics by SIM

L2126948-01D: The sample has elevated detection limits due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 06/09/21

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01
Client ID: PB-672-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 07:40
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/21 02:49
Analyst: MV
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.00082	J	mg/kg	0.00089	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00089	0.00052	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02
Client ID: FB-210521
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 09:30
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/26/21 15:43
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/26/21 13:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02 Date Collected: 05/21/21 09:30
Client ID: FB-210521 Date Received: 05/21/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 12:40
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	84		70-130
4-Bromofluorobenzene	76		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-03
Client ID: TB-210521
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 00:00
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 05/26/21 15:49
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/26/21 13:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-03 Date Collected: 05/21/21 00:00
Client ID: TB-210521 Date Received: 05/21/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/25/21 13:06
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	77		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/25/21 08:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-03 Batch: WG1503616-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 05/26/21 14:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 05/26/21 13:36

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 02-03 Batch: WG1503980-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/27/21 19:43
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1504868-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03 Batch: WG1503616-3 WG1503616-4								
Methyl tert butyl ether	89		89		63-130	0		20
Benzene	96		90		70-130	6		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	91		86		70-130	6		20
Ethylbenzene	93		91		70-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	88		86		70-130	2		20
1,3,5-Trimethylbenzene	88		84		64-130	5		20
1,2,4-Trimethylbenzene	88		85		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		100		70-130
Toluene-d8	89		90		70-130
4-Bromofluorobenzene	76		79		70-130
Dibromofluoromethane	110		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 02-03 Batch: WG1503980-2								
1,2-Dibromoethane	85		-		80-120	-		20	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1504868-3 WG1504868-4								
Methyl tert butyl ether	95		92		66-130	3		30
Benzene	111		106		70-130	5		30
1,2-Dichloroethane	112		108		70-130	4		30
Toluene	106		103		70-130	3		30
1,2-Dibromoethane	105		106		70-130	1		30
Ethylbenzene	103		101		70-130	2		30
p/m-Xylene	101		100		70-130	1		30
o-Xylene	100		98		70-130	2		30
Isopropylbenzene	100		98		70-130	2		30
1,3,5-Trimethylbenzene	100		98		70-130	2		30
1,2,4-Trimethylbenzene	100		99		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		104		70-130
Toluene-d8	102		103		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	100		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01 D
Client ID: PB-672-23-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 07:40
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 17:43
Analyst: DV
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 06/03/21 08:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.10		mg/kg	0.094	0.017	10
Fluorene	0.024	J	mg/kg	0.094	0.011	10
Phenanthrene	0.16		mg/kg	0.094	0.0080	10
Anthracene	0.034	J	mg/kg	0.094	0.0075	10
Pyrene	0.20		mg/kg	0.094	0.0066	10
Benzo(a)anthracene	0.28		mg/kg	0.094	0.0089	10
Chrysene	0.43		mg/kg	0.094	0.0070	10
Benzo(b)fluoranthene	0.37		mg/kg	0.094	0.0089	10
Benzo(a)pyrene	0.52		mg/kg	0.094	0.011	10
Benzo(ghi)perylene	0.56		mg/kg	0.094	0.0080	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	39		30-120
4-Terphenyl-d14	31		18-120

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02
Client ID: FB-210521
Sample Location: PHILADELPHIA, PA

Date Collected: 05/21/21 09:30
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:31
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	80		15-120
4-Terphenyl-d14	92		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/27/21 21:12
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 05/26/21 19:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02 Batch: WG1504177-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	0.02	J	ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		21-120
Phenol-d6	62		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	93		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	105		41-149

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/04/21 15:15
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 06/03/21 08:52

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1507007-1					
Naphthalene	ND		mg/kg	0.0066	0.0012
Fluorene	ND		mg/kg	0.0066	0.00079
Phenanthrene	ND		mg/kg	0.0066	0.00056
Anthracene	ND		mg/kg	0.0066	0.00053
Pyrene	ND		mg/kg	0.0066	0.00046
Benzo(a)anthracene	ND		mg/kg	0.0066	0.00063
Chrysene	ND		mg/kg	0.0066	0.00050
Benzo(b)fluoranthene	ND		mg/kg	0.0066	0.00063
Benzo(a)pyrene	ND		mg/kg	0.0066	0.00079
Benzo(ghi)perylene	ND		mg/kg	0.0066	0.00056

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	89		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	74		10-136
4-Terphenyl-d14	82		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1504177-2 WG1504177-3								
Naphthalene	77		77		40-140	0		40
Fluorene	82		81		40-140	1		40
Phenanthrene	84		83		40-140	1		40
Anthracene	85		85		40-140	0		40
Pyrene	84		81		26-127	4		40
Benzo(a)anthracene	86		82		40-140	5		40
Chrysene	84		84		40-140	0		40
Benzo(b)fluoranthene	90		85		40-140	6		40
Benzo(a)pyrene	90		87		40-140	3		40
Benzo(ghi)perylene	87		85		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		75		21-120
Phenol-d6	60		60		10-120
Nitrobenzene-d5	93		94		23-120
2-Fluorobiphenyl	80		80		15-120
2,4,6-Tribromophenol	82		83		10-120
4-Terphenyl-d14	89		87		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1507007-2 WG1507007-3								
Naphthalene	69		72		40-140	4		50
Fluorene	70		74		40-140	6		50
Phenanthrene	70		72		40-140	3		50
Anthracene	75		77		40-140	3		50
Pyrene	72		76		35-142	5		50
Benzo(a)anthracene	73		71		40-140	3		50
Chrysene	67		70		40-140	4		50
Benzo(b)fluoranthene	72		76		40-140	5		50
Benzo(a)pyrene	76		75		40-140	1		50
Benzo(ghi)perylene	75		72		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	74		78		25-120
Phenol-d6	82		86		10-120
Nitrobenzene-d5	88		93		23-120
2-Fluorobiphenyl	68		72		30-120
2,4,6-Tribromophenol	66		69		10-136
4-Terphenyl-d14	71		77		18-120

METALS

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01 Date Collected: 05/21/21 07:40

Client ID: PB-672-23-SS01 Date Received: 05/21/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	153		mg/kg	2.72	0.146	1	05/31/21 05:45	06/08/21 21:34	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY-AST CLOS
Lab Number: L2126948
Project Number: 200.00135.005
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-02
Client ID: FB-210521
Sample Location: PHILADELPHIA, PA
Date Collected: 05/21/21 09:30
Date Received: 05/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	06/07/21 17:28	EPA 3005A	1,6020B	CD

Project Name: PHILADELPHIA REFINERY-AST CLOS **Lab Number:** L2126948

Project Number: 200.00135.005 **Report Date:** 06/09/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1502834-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/24/21 16:22	05/26/21 20:46	1,6020B	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1505625-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	05/31/21 05:45	06/03/21 20:44	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1502834-2								
Lead, Total	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1505625-2 SRM Lot Number: D109-540								
Lead, Total	98		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126948
Report Date: 06/09/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1502834-3 QC Sample: L2126825-11 Client ID: MS Sample												
Lead, Total	ND	510	531.0	104		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1505625-3 QC Sample: L2125488-01 Client ID: MS Sample												
Lead, Total	9.47	44.9	43.6	76		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1502834-4 QC Sample: L2126825-11 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1505625-4 QC Sample: L2125488-01 Client ID: DUP Sample						
Lead, Total	9.47	11.0	mg/kg	15		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005
Lab Number: L2126948
Report Date: 06/09/21

SAMPLE RESULTS

Lab ID: L2126948-01
Client ID: PB-672-23-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 05/21/21 07:40
Date Received: 05/21/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.4		%	0.100	NA	1	-	05/22/21 10:21	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY-AST CLOS

Project Number: 200.00135.005

Lab Number: L2126948

Report Date: 06/09/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1502367-1 QC Sample: L2126873-21 Client ID: DUP Sample						
Solids, Total	71.9	72.1	%	0		20

Project Name: PHILADELPHIA REFINERY-AST CLOS
Project Number: 200.00135.005

Lab Number: L2126948
Report Date: 06/09/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2126948-01A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2126948-01B	Vial water preserved	A	NA		3.4	Y	Absent	22-MAY-21 06:50	PA-8260HLW(14)
L2126948-01C	Vial water preserved	A	NA		3.4	Y	Absent	22-MAY-21 06:50	PA-8260HLW(14)
L2126948-01D	Plastic 120ml unpreserved	A	NA		3.4	Y	Absent		TS(7)
L2126948-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180)
L2126948-01F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PA-8270SIM(14)
L2126948-02A	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-02B	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-02C	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-02D	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)
L2126948-02E	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)
L2126948-02F	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		PB-6020T-PPB(180)
L2126948-02G	Amber 250ml unpreserved	A	7	7	3.4	Y	Absent		PA-8270SIM-LVI(7)
L2126948-02H	Amber 250ml unpreserved	A	7	7	3.4	Y	Absent		PA-8270SIM-LVI(7)
L2126948-03A	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-03B	Vial HCl preserved	A	NA		3.4	Y	Absent		PA-8260(14)
L2126948-03C	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)
L2126948-03D	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY-AST CLOS	**Lab Number:**	L2126948
Project Number:	200.00135.005	**Report Date:**	06/09/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab: 5/22/21

ALPHA Job #: L 2126948

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 215-401-4974
Fax:
Email: William.Schmidt@Ransom

Project Information

Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard
Rush (only if pre approved)
Due Date:
# of Days:

Deliverables

- NJ Full / Reduced
- EQuIS (1 File) / EQuIS (4 File)
- Other: Email, AVEX

Regulatory Requirement

- SRS Residential/Non Residential
- SRS Impact to Groundwater
- NJ Ground Water Quality Standards
- NJ IGW SPLP Leachate Criteria
- Other

Billing Information

Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes
Petroleum Product:

These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:
- Category 1
- Category 2

For VOC, selection is REQUIRED:
- 1,4-Dioxane
- 8011

Other project specific requirements/comments:
Report Only Project Specific Analytes List
Please specify Metals or TAL.
Radgp Leaded/Unleaded Gasoline Short List
No 4-6 Fuel Oil Short List, Lead Only

ANALYSIS

Sample Filtration
- Done
- Lab to do

Preservation
- Lab to do

(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PA-8270 SIM	Metals (Lead)	TS	PA-8260 HLM	PA-8270 SIM LVI	Total Lead	PA 8260	8011	Sample Specific Comments	Total Bottle
2126948-01	DB-672-23-5501	5/21	0740	S	TS	✓	✓	✓	✓						6
-02	FB-210521		0930	A	TS					✓	✓	✓	✓		8
-03	TB-210521														

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	A	P	V				
Preservative	A	A	A	F				

Relinquished By:	Date/Time	Received By:	Date/Time
	5/21/21	ATHL	5/21/21 1100
	5/21/21 17:02		5/21/21 17:02
	5/21/21	AHC	5/21/21 2300
	5/22/21 0215		5/22/21 0215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2165356
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY-860 RELEASE
Project Number:	200.00135.005.03
Report Date:	11/30/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2165356-01	PB-666-12R-0.0-0.5	SOIL	PHILADELPHIA, PA	11/29/21 13:20	11/29/21
L2165356-02	PB-666-12R-6.0-6.5	SOIL	PHILADELPHIA, PA	11/29/21 13:25	11/29/21
L2165356-03	PB-666-12R-14.5-15.0	SOIL	PHILADELPHIA, PA	11/29/21 13:30	11/29/21
L2165356-04	PB-666-11R-0.0-0.5	SOIL	PHILADELPHIA, PA	11/29/21 14:15	11/29/21
L2165356-05	PB-666-11R-6.0-6.5	SOIL	PHILADELPHIA, PA	11/29/21 14:20	11/29/21
L2165356-06	PB-666-11R-14.5-15.0	SOIL	PHILADELPHIA, PA	11/29/21 14:30	11/29/21
L2165356-07	PB-666-29-0.0-0.5	SOIL	PHILADELPHIA, PA	11/29/21 15:00	11/29/21
L2165356-08	PB-666-29-3.5-4.0	SOIL	PHILADELPHIA, PA	11/29/21 15:05	11/29/21
L2165356-09	PB-666-29-6.0-6.5	SOIL	PHILADELPHIA, PA	11/29/21 15:10	11/29/21
L2165356-10	FB-211129	WATER	PHILADELPHIA, PA	11/29/21 14:00	11/29/21
L2165356-11	TB-211129	WATER	PHILADELPHIA, PA	11/29/21 00:00	11/29/21

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative (continued)

Report Revision

November 30, 2022: The Volatile and Semivolatile Organics reporting lists have been amended on L2165356-04, -05, -07, -08, and -09.

Report Submission

December 08, 2021: This final report includes the results of all requested analyses.

December 07, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

L2165356-01D and -08D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2165356-05D: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix, and due to the analytical dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 11/30/22

ORGANICS

VOLATILES

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-04
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 08:06
Analyst: KJD
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	0.0013		mg/kg	0.00078	0.00026	1
Toluene	ND		mg/kg	0.0016	0.00084	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0016	0.00045	1
Xylenes, Total	ND		mg/kg	0.0016	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-05
Client ID: PB-666-11R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 08:32
Analyst: KJD
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00088		mg/kg	0.00065	0.00022	1
Toluene	ND		mg/kg	0.0013	0.00071	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-07
Client ID: PB-666-29-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 08:57
Analyst: KJD
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00032	1
Benzene	ND		mg/kg	0.00078	0.00026	1
Toluene	0.0014	J	mg/kg	0.0016	0.00085	1
p/m-Xylene	ND		mg/kg	0.0031	0.00088	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-08
Client ID: PB-666-29-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:05
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 09:22
Analyst: KJD
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	ND		mg/kg	0.00093	0.00031	1
Toluene	ND		mg/kg	0.0019	0.0010	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	ND		mg/kg	0.0019	0.00054	1
Xylenes, Total	ND		mg/kg	0.0019	0.00054	1
Isopropylbenzene	ND		mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	107		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-09
Client ID: PB-666-29-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:10
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/02/21 09:47
Analyst: KJD
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00079	0.00026	1
Toluene	ND		mg/kg	0.0016	0.00086	1
p/m-Xylene	ND		mg/kg	0.0032	0.00088	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-10
Client ID: FB-211129
Sample Location: PHILADELPHIA, PA
Date Collected: 11/29/21 14:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/05/21 12:36
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	105		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-11
Client ID: TB-211129
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 00:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/05/21 12:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/02/21 07:42
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04-05,07-09 Batch: WG1578798-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	102		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/05/21 06:35
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 10-11 Batch: WG1579408-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04-05,07-09 Batch: WG1578798-3 WG1578798-4								
Methyl tert butyl ether	110		111		66-130	1		30
Benzene	112		106		70-130	6		30
Toluene	109		102		70-130	7		30
p/m-Xylene	114		108		70-130	5		30
o-Xylene	112		107		70-130	5		30
Isopropylbenzene	104		98		70-130	6		30
1,3,5-Trimethylbenzene	105		99		70-130	6		30
1,2,4-Trimethylbenzene	105		100		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		113		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	103		105		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 10-11 Batch: WG1579408-3 WG1579408-4								
Benzene	98		100		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		102		70-130
Toluene-d8	99		96		70-130
4-Bromofluorobenzene	92		97		70-130
Dibromofluoromethane	106		108		70-130

SEMIVOLATILES

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-01 D
Client ID: PB-666-12R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 13:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 13:32
Analyst: WR
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.84	J	mg/kg	1.2	0.14	5
Benzo(b)fluoranthene	31.		mg/kg	0.70	0.20	5
Benzo(a)pyrene	20.		mg/kg	0.93	0.28	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	70		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-02
Client ID: PB-666-12R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 13:25
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/04/21 03:39
Analyst: EK
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.054	J	mg/kg	0.22	0.027	1
Benzo(b)fluoranthene	0.32		mg/kg	0.13	0.037	1
Benzo(a)pyrene	0.25		mg/kg	0.18	0.053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	63		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-04 D2
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 15:24
Analyst: WR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	57.		mg/kg	1.2	0.34	10

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-04 D
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 13:57
Analyst: WR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	1.0	0.12	5
Benzo(b)fluoranthene	50.	E	mg/kg	0.60	0.17	5
Benzo(a)pyrene	34.		mg/kg	0.80	0.24	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	54		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-05 D
Client ID: PB-666-11R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 13:11
Analyst: IM
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/03/21 18:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2	J	mg/kg	6.6	0.80	10
Benzo(b)fluoranthene	18.		mg/kg	3.9	1.1	10
Benzo(a)pyrene	12.		mg/kg	5.2	1.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	43		30-120
4-Terphenyl-d14	40		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-07
Client ID: PB-666-29-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/03/21 20:53
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.24	0.029	1
Benzo(b)fluoranthene	0.45		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.37		mg/kg	0.19	0.057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	68		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-08 D
Client ID: PB-666-29-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:05
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/06/21 15:09
Analyst: WR
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	1.1	0.13	5
Benzo(b)fluoranthene	1.4		mg/kg	0.64	0.18	5
Benzo(a)pyrene	1.0		mg/kg	0.85	0.26	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	46		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-09
Client ID: PB-666-29-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 15:10
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/04/21 01:27
Analyst: EK
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.24	0.029	1
Benzo(b)fluoranthene	0.051	J	mg/kg	0.14	0.040	1
Benzo(a)pyrene	ND		mg/kg	0.19	0.058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	83		30-120
4-Terphenyl-d14	70		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-10
Client ID: FB-211129
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/06/21 11:19
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	65		15-120
4-Terphenyl-d14	63		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/03/21 02:28
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/02/21 16:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02,04,07-09 Batch: WG1578390-1					
Naphthalene	ND		mg/kg	0.16	0.020
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	74		18-120

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 12:56
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 02:56

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1579243-1					
Naphthalene	ND		ug/l	0.10	0.05
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	45		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	64		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	69		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/04/21 00:52
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 12/03/21 12:33

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1579722-1					
Naphthalene	ND		mg/kg	0.16	0.020
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	82		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02,04,07-09 Batch: WG1578390-2 WG1578390-3								
Naphthalene	73		70		40-140	4		50
Benzo(b)fluoranthene	81		78		40-140	4		50
Benzo(a)pyrene	77		73		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	74		71		23-120
2-Fluorobiphenyl	82		77		30-120
4-Terphenyl-d14	83		78		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1579243-2 WG1579243-3								
Naphthalene	71		68		40-140	4		40
Benzo(b)fluoranthene	75		84		40-140	11		40
Benzo(a)pyrene	77		84		40-140	9		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	66		62		21-120
Phenol-d6	54		52		10-120
Nitrobenzene-d5	78		72		23-120
2-Fluorobiphenyl	73		72		15-120
2,4,6-Tribromophenol	82		85		10-120
4-Terphenyl-d14	75		81		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1579722-2 WG1579722-3								
Naphthalene	64		63		40-140	2		50
Benzo(b)fluoranthene	72		70		40-140	3		50
Benzo(a)pyrene	67		66		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	64		61		23-120
2-Fluorobiphenyl	67		64		30-120
4-Terphenyl-d14	70		68		18-120

METALS

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-01
Client ID: PB-666-12R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/29/21 13:20
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2460		mg/kg	2.68	0.144	1	12/02/21 21:35	12/06/21 14:49	EPA 3050B	1,6010D	GD

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-02 Date Collected: 11/29/21 13:25

Client ID: PB-666-12R-6.0-6.5 Date Received: 11/29/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	307		mg/kg	2.69	0.144	1	12/02/21 21:35	12/06/21 14:54	EPA 3050B	1,6010D	GD

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-10
Client ID: FB-211129
Sample Location: PHILADELPHIA, PA
Date Collected: 11/29/21 14:00
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/01/21 09:37	12/01/21 15:01	EPA 3005A	1,6020B	CD

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165356

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10 Batch: WG1577334-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/01/21 09:37	12/01/21 14:10	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1578288-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/02/21 21:35	12/06/21 12:29	1,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1577334-2								
Lead, Total	102		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1578288-2 SRM Lot Number: D109-540								
Lead, Total	96		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1577334-3 QC Sample: L2165121-03 Client ID: MS Sample												
Lead, Total	ND	530	536.2	101		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1578288-3 WG1578288-4 QC Sample: L2165322-01 Client ID: MS Sample												
Lead, Total	6.23	45.1	41.5	78		42.7	80		75-125	3		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 11/30/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1577334-4 QC Sample: L2165121-03 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-01
Client ID: PB-666-12R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 13:20
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.2		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-02
Client ID: PB-666-12R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 13:25
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.3		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165356
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-04
Client ID: PB-666-11R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/29/21 14:15
Date Received: 11/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.0		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-05
Client ID: PB-666-11R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 14:20
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.0		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-07
Client ID: PB-666-29-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 15:00
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-08
Client ID: PB-666-29-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 15:05
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.7		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165356
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165356-09
Client ID: PB-666-29-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/29/21 15:10
Date Received: 11/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	11/30/21 13:07	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165356

Report Date: 11/30/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-09 QC Batch ID: WG1577157-1 QC Sample: L2165356-01 Client ID: PB-666-12R-0.0-0.5						
Solids, Total	71.2	71.7	%	1		20

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165356-01A	Vial MeOH preserved	B	NA		3.6	Y	Absent		HOLD-8260HLW(14)
L2165356-01B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-01C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-01D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L2165356-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		PB-TI(180)
L2165356-01F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		PA-PAH(14)
L2165356-02A	Vial MeOH preserved	B	NA		3.6	Y	Absent		HOLD-8260HLW(14)
L2165356-02B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-02C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-02D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L2165356-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		PB-TI(180)
L2165356-02F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		PA-PAH(14)
L2165356-03A	Vial MeOH preserved	B	NA		3.6	Y	Absent		HOLD-8260HLW(14)
L2165356-03B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-03C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-03D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		HOLD-WETCHEM()
L2165356-03E	Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		HOLD-METAL(180)
L2165356-03F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		HOLD-8270(14)
L2165356-04A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-04B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-04C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-04D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165356-04E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-04F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-05A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-05B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-05C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-05D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)
L2165356-05E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-05F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-06A	Vial MeOH preserved	A	NA		5.1	Y	Absent		HOLD-8260HLW(14)
L2165356-06B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-06C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	HOLD-8260HLW(14)
L2165356-06D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		HOLD-WETCHEM()
L2165356-06E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		HOLD-8270(14)
L2165356-06F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		HOLD-8270(14)
L2165356-07A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-07B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-07C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-07D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)
L2165356-07E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-07F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-08A	Vial MeOH preserved	A	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165356-08B	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-08C	Vial water preserved	A	NA		5.1	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-08D	Plastic 2oz unpreserved for TS	A	NA		5.1	Y	Absent		TS(7)
L2165356-08E	Glass 60mL/2oz unpreserved	A	NA		5.1	Y	Absent		ARCHIVE()
L2165356-08F	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		PA-PAH(14)
L2165356-09A	Vial MeOH preserved	B	NA		3.6	Y	Absent		PA-8260HLW(14)
L2165356-09B	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165356
Report Date: 11/30/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165356-09C	Vial water preserved	B	NA		3.6	Y	Absent	30-NOV-21 08:58	PA-8260HLW(14)
L2165356-09D	Plastic 2oz unpreserved for TS	B	NA		3.6	Y	Absent		TS(7)
L2165356-09E	Glass 60mL/2oz unpreserved	B	NA		3.6	Y	Absent		ARCHIVE()
L2165356-09F	Glass 120ml/4oz unpreserved	B	NA		3.6	Y	Absent		PA-PAH(14)
L2165356-10A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2165356-10B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2165356-10C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2165356-10D	Plastic 120ml unpreserved	A	7	7	5.1	Y	Absent		ARCHIVE()
L2165356-10E	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020T-PPB(180)
L2165356-10F	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165356-10G	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165356-11A	Vial HCl preserved	B	NA		3.6	Y	Absent		PA-8260(14)
L2165356-11B	Vial HCl preserved	B	NA		3.6	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165356
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/30/21

ALPHA Job #: L2165356

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
	~~PB-666-12R (0-0.5')~~	11/29				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
65356-01	PB-166-12R-0.0-0.5		1320	S	TS	☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		
02	PB-666-12R-6.0-6.5		1325			☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		
03	PB-666-12R-14.5-15.0		1330			☑	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	HOLD	
04	PB-666-11R-0.0-0.5		1915			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
05	PB-666-11R-6.0-6.5		1920			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
06	PB-666-11R-14.5-15.0		1930			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	HOLD	
07	PB-666-29-0.0-0.5		1500			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
08	PB-666-29-3.5-4.0		1505			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
09	PB-666-29-6.0-6.5		1510			☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		
	Container Type					-	-	-	-	-	-	-	-	-	-	-	-		
	Preservative					-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	11/29 1132		11/29/21 1630
	11-29 2000		11-29 1720
Paul Masella	11/30/21 0050	Paul Masella	11/30/21 0050

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-02(HAL) (rev. 3-JAN-12)

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CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/30/21

ALPHA Job #: L2165356

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65356-10	FB-211129	11/29	1100	GW		☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		
11	FB-211129	11/29	-	W		☑	☑	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐

ANALYTICAL REPORT

Lab Number:	L2165672
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY-860 RELEASE
Project Number:	200.00135.005.03
Report Date:	11/30/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2165672-01	PB-666-28-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 09:55	11/30/21
L2165672-02	PB-666-28-2.5-3.0	SOIL	PHILADELPHIA, PA	11/30/21 10:00	11/30/21
L2165672-03	PB-666-28-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 10:05	11/30/21
L2165672-04	PB-668-08-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 10:35	11/30/21
L2165672-05	PB-668-08-2.5-3.0	SOIL	PHILADELPHIA, PA	11/30/21 10:40	11/30/21
L2165672-06	PB-668-08-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 10:45	11/30/21
L2165672-07	PB-668-06R-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 11:25	11/30/21
L2165672-08	PB-668-06R-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 11:30	11/30/21
L2165672-09	PB-668-06R-14.5-15.0	WATER	PHILADELPHIA, PA	11/30/21 11:35	11/30/21
L2165672-10	PB-666-27-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 13:05	11/30/21
L2165672-11	PB-666-27-3.5-4.0	SOIL	PHILADELPHIA, PA	11/30/21 13:10	11/30/21
L2165672-12	PB-666-27-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 13:15	11/30/21
L2165672-13	PB-666-26-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 14:00	11/30/21
L2165672-14	PB-666-26-3.5-4.0	SOIL	PHILADELPHIA, PA	11/30/21 14:05	11/30/21
L2165672-15	PB-666-26-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 14:10	11/30/21
L2165672-16	PB-663-15-0.0-0.5	SOIL	PHILADELPHIA, PA	11/30/21 14:50	11/30/21
L2165672-17	PB-663-15-3.0-3.5	SOIL	PHILADELPHIA, PA	11/30/21 14:55	11/30/21
L2165672-18	PB-663-15-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/21 15:00	11/30/21
L2165672-19	FB-211130-1	WATER	PHILADELPHIA, PA	11/30/21 15:30	11/30/21
L2165672-20	FB-211130-2	WATER	PHILADELPHIA, PA	11/30/21 15:35	11/30/21
L2165672-21	TB-211130	WATER	PHILADELPHIA, PA	11/30/21 00:00	11/30/21

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative (continued)

Report Revision

November 30, 2022: The Volatile and Semivolatile Organics reporting lists have been amended on L2165672-10, -11, and -12.

Report Submission

December 17, 2021: This final report includes the results of all requested analyses.

December 14, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2165672-19 and -20: Sample containers were received for Total Solids. The analysis was not performed.

Volatile Organics

L2165672-11: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (43%) and the surrogate recovery for 4-bromofluorobenzene (136%) were outside the acceptance criteria. The results of the original analysis are reported.

L2165672-12: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (30%) and the surrogate recovery for 4-bromofluorobenzene (147%) were outside the acceptance criteria. The results of the original analysis are reported.

Semivolatile Organics

L2165672-04D, -05D, -06D, -07D, -10D, -11D, and -12D: The sample has elevated detection limits due to the dilution required by the sample matrix.

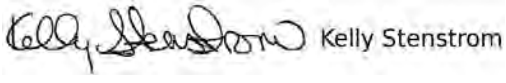
L2165672-08: One or more of the internal standard recoveries is outside the acceptance criteria; however, the internal standard is within criteria for the target compounds; therefore, the results are reported.

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative (continued)

L2165672-10D: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 11/30/22

ORGANICS

VOLATILES

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-10
Client ID: PB-666-27-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/09/21 10:52
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	0.00045	J	mg/kg	0.00085	0.00028	1
Toluene	0.021		mg/kg	0.0017	0.00092	1
p/m-Xylene	0.015		mg/kg	0.0034	0.00095	1
o-Xylene	0.0059		mg/kg	0.0017	0.00049	1
Xylenes, Total	0.021		mg/kg	0.0017	0.00049	1
Isopropylbenzene	0.00067	J	mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.0076		mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	0.015		mg/kg	0.0034	0.00057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	92		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-11
Client ID: PB-666-27-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/09/21 10:31
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	0.0016		mg/kg	0.00075	0.00025	1
Toluene	0.30		mg/kg	0.0015	0.00081	1
p/m-Xylene	0.37		mg/kg	0.0030	0.00084	1
o-Xylene	0.14		mg/kg	0.0015	0.00043	1
Xylenes, Total	0.51		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.017		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.10		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.26		mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-12
Client ID: PB-666-27-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:15
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/09/21 11:12
Analyst: MKS
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0049	0.00049	1
Benzene	0.0039		mg/kg	0.0012	0.00040	1
Toluene	0.56		mg/kg	0.0024	0.0013	1
p/m-Xylene	0.52		mg/kg	0.0049	0.0014	1
o-Xylene	0.18		mg/kg	0.0024	0.00071	1
Xylenes, Total	0.70		mg/kg	0.0024	0.00071	1
Isopropylbenzene	0.026		mg/kg	0.0024	0.00026	1
1,3,5-Trimethylbenzene	0.13		mg/kg	0.0049	0.00047	1
1,2,4-Trimethylbenzene	0.32		mg/kg	0.0049	0.00081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	**147**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-19
Client ID: FB-211130-1
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 15:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/06/21 11:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-20
Client ID: FB-211130-2
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/06/21 12:50
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	102		70-130

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-21
Client ID: TB-211130
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 00:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/04/21 14:06
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	105		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/04/21 09:30
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 21 Batch: WG1579337-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	103		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/06/21 09:15
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-20 Batch: WG1580259-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/09/21 06:05
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 10-12 Batch: WG1581307-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	85		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 21 Batch: WG1579337-3 WG1579337-4								
Benzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		107		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	103		105		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-20 Batch: WG1580259-3 WG1580259-4								
Benzene	100		110		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		109		70-130
Toluene-d8	102		97		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	99		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 10-12 Batch: WG1581307-3 WG1581307-4								
Methyl tert butyl ether	93		97		66-130	4		30
Benzene	98		94		70-130	4		30
Toluene	97		93		70-130	4		30
p/m-Xylene	100		94		70-130	6		30
o-Xylene	96		92		70-130	4		30
Isopropylbenzene	102		99		70-130	3		30
1,3,5-Trimethylbenzene	99		94		70-130	5		30
1,2,4-Trimethylbenzene	97		95		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	78		79		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	86		84		70-130

SEMIVOLATILES

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-01
Client ID: PB-666-28-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 09:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 12:19
Analyst: WR
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.16	J	mg/kg	0.26	0.031	1
Benzo(b)fluoranthene	1.5		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.0		mg/kg	0.20	0.062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	78		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-02
Client ID: PB-666-28-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 12:43
Analyst: WR
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.26	0.031	1
Benzo(b)fluoranthene	ND		mg/kg	0.15	0.043	1
Benzo(a)pyrene	ND		mg/kg	0.20	0.063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	78		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-03
Client ID: PB-666-28-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 13:07
Analyst: WR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.23	0.028	1
Benzo(b)fluoranthene	ND		mg/kg	0.14	0.038	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	68		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-04 D
Client ID: PB-668-08-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 16:05
Analyst: EK
Percent Solids: 51%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.54	J	mg/kg	0.64	0.078	2
Benzo(b)fluoranthene	5.1		mg/kg	0.39	0.11	2
Benzo(a)pyrene	3.8		mg/kg	0.52	0.16	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	76		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-05 D
Client ID: PB-668-08-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:40
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 16:27
Analyst: EK
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32	J	mg/kg	0.36	0.043	2
Benzo(b)fluoranthene	4.9		mg/kg	0.21	0.060	2
Benzo(a)pyrene	3.7		mg/kg	0.28	0.087	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	75		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-06 D
Client ID: PB-668-08-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:45
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 16:49
Analyst: EK
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.51		mg/kg	0.49	0.060	2
Benzo(b)fluoranthene	0.24	J	mg/kg	0.29	0.083	2
Benzo(a)pyrene	ND		mg/kg	0.39	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	67		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-07 D
Client ID: PB-668-06R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 11:25
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 17:11
Analyst: EK
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.15	J	mg/kg	0.50	0.061	2
Benzo(b)fluoranthene	1.3		mg/kg	0.30	0.084	2
Benzo(a)pyrene	0.94		mg/kg	0.40	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	66		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-08
Client ID: PB-668-06R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 11:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/11/21 15:08
Analyst: WR
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.24	0.029	1
Benzo(b)fluoranthene	0.043	J	mg/kg	0.14	0.040	1
Benzo(a)pyrene	ND		mg/kg	0.19	0.059	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	91		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-10 D
Client ID: PB-666-27-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 17:33
Analyst: EK
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	1.4	0.17	2
Benzo(b)fluoranthene	ND		mg/kg	0.86	0.24	2
Benzo(a)pyrene	ND		mg/kg	1.1	0.35	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	65		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-11 D
Client ID: PB-666-27-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 18:32
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.081	J	mg/kg	0.49	0.060	2
Benzo(b)fluoranthene	0.52		mg/kg	0.30	0.083	2
Benzo(a)pyrene	0.36	J	mg/kg	0.40	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	56		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-12 D
Client ID: PB-666-27-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:15
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 12/13/21 18:10
Analyst: EK
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.22	J	mg/kg	0.50	0.061	2
Benzo(b)fluoranthene	1.8		mg/kg	0.30	0.084	2
Benzo(a)pyrene	1.4		mg/kg	0.40	0.12	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	62		18-120

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-19
Client ID: FB-211130-1
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 19:40
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 02:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	79		15-120
4-Terphenyl-d14	76		41-149

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-20
Client ID: FB-211130-2
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 19:59
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 12/05/21 02:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	69		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/05/21 15:59
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/04/21 11:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19-20 Batch: WG1579133-1					
Naphthalene	ND		ug/l	0.10	0.05
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	59		10-120
4-Terphenyl-d14	72		41-149

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/11/21 09:54
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 12/10/21 14:33

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-08,10-12 Batch: WG1581810-1					
Naphthalene	ND		mg/kg	0.16	0.020
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	87		30-120
4-Terphenyl-d14	97		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19-20 Batch: WG1579133-2 WG1579133-3								
Naphthalene	61		55		40-140	10		40
Benzo(b)fluoranthene	72		66		40-140	9		40
Benzo(a)pyrene	67		52		40-140	25		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	49		41		21-120
Phenol-d6	41		34		10-120
Nitrobenzene-d5	54		49		23-120
2-Fluorobiphenyl	65		60		15-120
2,4,6-Tribromophenol	73		60		10-120
4-Terphenyl-d14	68		61		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08,10-12 Batch: WG1581810-2 WG1581810-3								
Naphthalene	63		83		40-140	27		50
Benzo(b)fluoranthene	73		100		40-140	31		50
Benzo(a)pyrene	67		88		40-140	27		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	70		90		23-120
2-Fluorobiphenyl	69		86		30-120
4-Terphenyl-d14	74		93		18-120

METALS

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-01
Client ID: PB-666-28-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 09:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	392		mg/kg	3.04	0.163	1	12/08/21 19:35	12/10/21 17:08	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-02 Date Collected: 11/30/21 10:00

Client ID: PB-666-28-2.5-3.0 Date Received: 11/30/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	25.5		mg/kg	3.05	0.163	1	12/08/21 19:35	12/10/21 17:13	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-03
Client ID: PB-666-28-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 10:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	34.7		mg/kg	2.73	0.146	1	12/08/21 19:35	12/10/21 17:52	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-13
Client ID: PB-666-26-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.7		mg/kg	2.65	0.142	1	12/08/21 19:35	12/10/21 17:56	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-14
Client ID: PB-666-26-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	141		mg/kg	2.76	0.148	1	12/08/21 19:35	12/10/21 18:01	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-15
Client ID: PB-666-26-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:10
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.9		mg/kg	2.86	0.154	1	12/08/21 19:35	12/10/21 18:06	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-16
Client ID: PB-663-15-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:50
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	785		mg/kg	2.55	0.137	1	12/08/21 19:35	12/10/21 18:11	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-17
Client ID: PB-663-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 14:55
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	834		mg/kg	2.46	0.132	1	12/08/21 19:35	12/10/21 18:15	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-18
Client ID: PB-663-15-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 15:00
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1060		mg/kg	2.40	0.129	1	12/08/21 19:35	12/10/21 18:20	EPA 3050B	1,6010D	MC

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-19
Client ID: FB-211130-1
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 15:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/08/21 04:44	12/08/21 13:39	EPA 3005A	1,6020B	CD

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-20
Client ID: FB-211130-2
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 15:35
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/08/21 04:44	12/08/21 13:44	EPA 3005A	1,6020B	CD

Project Name: PES REFINERY-860 RELEASE **Lab Number:** L2165672

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 19-20 Batch: WG1580442-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/08/21 04:44	12/08/21 10:16	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03,13-18 Batch: WG1580800-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/08/21 19:35	12/10/21 16:54	1,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 19-20 Batch: WG1580442-2								
Lead, Total	95		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 Batch: WG1580800-2 SRM Lot Number: D109-540								
Lead, Total	94		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 19-20 QC Batch ID: WG1580442-3 QC Sample: L2165938-01 Client ID: MS Sample												
Lead, Total	5.346	530	514.6	96		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 QC Batch ID: WG1580800-3 QC Sample: L2166798-01 Client ID: MS Sample												
Lead, Total	111	52.1	138	**52**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 QC Batch ID: WG1580800-4 QC Sample: L2166798-01 Client ID: DUP Sample						
Lead, Total	111	121	mg/kg	9		20

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2165672
Report Date: 11/30/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,13-18 QC Batch ID: WG1580800-6 QC Sample: L2166798-01 Client ID: DUP Sample						
Lead, Total	111	132	mg/kg	19		20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-01
Client ID: PB-666-28-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 09:55
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.8		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-02
Client ID: PB-666-28-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 10:00
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.6		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-03
Client ID: PB-666-28-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 10:05
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.6		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-04
Client ID: PB-668-08-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 10:35
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	51.1		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-05
Client ID: PB-668-08-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 10:40
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-06
Client ID: PB-668-08-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 11/30/21 10:45
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.7		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-07
Client ID: PB-668-06R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 11:25
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.9		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Lab Number: L2165672
Project Number: 200.00135.005.03
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-08
Client ID: PB-668-06R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/21 11:30
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.5		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-10
Client ID: PB-666-27-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:05
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.0		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-11
Client ID: PB-666-27-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 13:10
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.9		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-12
Client ID: PB-666-27-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/21 13:15
Date Received: 11/30/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.6		%	0.100	NA	1	-	12/02/21 08:13	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-13
Client ID: PB-666-26-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:00
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.5		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-14
Client ID: PB-666-26-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:05
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.1		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-15
Client ID: PB-666-26-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:10
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-16
Client ID: PB-663-15-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:50
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.4		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-17
Client ID: PB-663-15-3.0-3.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 14:55
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.8		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03
Lab Number: L2165672
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165672-18
Client ID: PB-663-15-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/21 15:00
Date Received: 11/30/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.9		%	0.100	NA	1	-	12/02/21 12:41	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-860 RELEASE

Project Number: 200.00135.005.03

Lab Number: L2165672

Report Date: 11/30/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08,10-12 QC Batch ID: WG1578040-1 QC Sample: L2165440-01 Client ID: DUP Sample						
Solids, Total	86.4	85.9	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 13-18 QC Batch ID: WG1578271-1 QC Sample: L2165522-01 Client ID: DUP Sample						
Solids, Total	64.9	62.8	%	3		20

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-01A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-01B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-01C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-01D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2165672-01F	Glass 250ml/8oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-02A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-02B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-02C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-02D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-02F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-03A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-03B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-03C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-03D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-03F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-04A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-04B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-04C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-04D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-04E	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-04F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-05A	Vial MeOH preserved	B	NA		2.8	Y	Absent		HOLD-8260HLW(14)
L2165672-05B	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-05C	Vial water preserved	B	NA		2.8	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-05D	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		TS(7)
L2165672-05E	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-05F	Glass 120ml/4oz unpreserved	B	NA		2.8	Y	Absent		PA-PAH(14)
L2165672-06A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-06B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-06C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-06D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-06E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-06F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-07A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-07B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-07C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-07D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-07E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-07F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-08A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2165672-08B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-08C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-08D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2165672-08E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-08F	Glass 250ml/8oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2165672-09A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-09B	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-09C	Vial water preserved	A	NA		2.6	Y	Absent	01-DEC-21 14:46	HOLD-8260HLW(14)
L2165672-09D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2165672-09E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		ARCHIVE()
L2165672-09F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		S-EXT-8270(14)
L2165672-10A	Vial MeOH preserved	C	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165672-10B	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-10C	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-10D	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		TS(7)
L2165672-10E	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-10F	Glass 120ml/4oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-11A	Vial MeOH preserved	C	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165672-11B	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-11C	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-11D	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		TS(7)
L2165672-11E	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-11F	Glass 120ml/4oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-12A	Vial MeOH preserved	C	NA		5.1	Y	Absent		PA-8260HLW(14)
L2165672-12B	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-12C	Vial water preserved	C	NA		5.1	Y	Absent	01-DEC-21 14:46	PA-8260HLW(14)
L2165672-12D	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		TS(7)
L2165672-12E	Plastic 2oz unpreserved for TS	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-12F	Glass 120ml/4oz unpreserved	C	NA		5.1	Y	Absent		PA-PAH(14)
L2165672-13A	Glass 60ml unpreserved split	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-13B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		TS(7)
L2165672-14A	Glass 60ml unpreserved split	B	NA		2.8	Y	Absent		PB-TI(180)
L2165672-14B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		TS(7)
L2165672-15A	Glass 60ml unpreserved split	B	NA		2.8	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-860 RELEASE
Project Number: 200.00135.005.03

Lab Number: L2165672
Report Date: 11/30/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165672-15B	Glass 60mL/2oz unpreserved	B	NA		2.8	Y	Absent		TS(7)
L2165672-16A	Glass 60ml unpreserved split	C	NA		5.1	Y	Absent		PB-TI(180)
L2165672-16B	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		TS(7)
L2165672-17A	Glass 60ml unpreserved split	C	NA		5.1	Y	Absent		PB-TI(180)
L2165672-17B	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		TS(7)
L2165672-18A	Glass 60ml unpreserved split	C	NA		5.1	Y	Absent		PB-TI(180)
L2165672-18B	Glass 60mL/2oz unpreserved	C	NA		5.1	Y	Absent		TS(7)
L2165672-19A	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-19B	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-19C	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-19D	Plastic 250ml HNO3 preserved	C	<2	<2	5.1	Y	Absent		PB-6020T-PPB(180)
L2165672-19E	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-19F	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-19G	Plastic 60ml unpreserved	C	7	7	5.1	Y	Absent		ARCHIVE()
L2165672-20A	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-20B	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-20C	Vial HCl preserved	C	NA		5.1	Y	Absent		PA-8260(14)
L2165672-20D	Plastic 250ml HNO3 preserved	C	<2	<2	5.1	Y	Absent		PB-6020T-PPB(180)
L2165672-20E	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-20F	Amber 250ml unpreserved	C	7	7	5.1	Y	Absent		PA-8270SIM-LVI(7)
L2165672-20G	Plastic 60ml unpreserved	C	7	7	5.1	Y	Absent		ARCHIVE()
L2165672-21A	Vial HCl preserved	B	NA		2.8	Y	Absent		PA-8260(14)
L2165672-21B	Vial HCl preserved	B	NA		2.8	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY-860 RELEASE	**Lab Number:**	L2165672
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/1/21

ALPHA Job #: L2165672

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client Info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per attached 15

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65672-01	PB-666-28-0.0-0.5	11/30	0955	S	TS	☑	☐	☐	☑	☑	☑							DISPOSE TERRACORE	2
-02	PB-666-28-2.5-3.0		1000	S	TS	☑	☐	☐	☑	☑	☑							DISPOSE TERRACORE	2
-03	PB-666-28-6.0-6.5		1005	S	TS	☑	☐	☐	☑	☑	☑							DISPOSE TERRACORE	2
-04	PB-668-08-0.0-0.5		1035	S	TS	☐	☐	☐	☑	☑	☑							DISPOSE TERRACORE	1
-05	PB-668-08-2.5-3.0		1040	S	TS	☐	☐	☐	☑	☑	☑							DISPOSE TERRACORE	1
-06	PB-668-08-6.0-6.5		1045	S	TS	☐	☐	☐	☑	☑	☑							DISPOSE TERRACORE	1
-07	PB-668-06R-0.0-0.5		1125	S	TS	☐	☐	☐	☑	☑	☑							DISPOSE TERRA	1
-08	PB-668-06R-6.0-6.5		1130	S	TS	☐	☐	☐	☑	☑	☑							DISPOSE TERRA	1
-09	PB-668-06R-14.5-15.0		1135	S	TS	☐	☐	☐	☑	☑	☑							HOLD	1
-10	PB-666-27-0.0-0.5		1305	S	TS	☐	☑	☐	☑	☑	☐								5

Container Type	2oz	Tedlar Bag	-	4oz	4oz	4oz	-	-	-	-	-	-
Preservative	-	HCL	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	11/30		11/30/21 1550
	11/30/21 1730		11/30 1730
	11/30 2000	Paul Mazzella	11/30/21 2030
Paul Mazzella	12/1/21 0135		12/1/21 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(1A)

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/1/21 | ALPHA Job #: L2165672

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information – Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
PADEP Storage Tank Sampling	

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene	TS						Sample Specific Comments	TOTAL # BOTTLES
65	~~PB-666-27-6.0-6.5~~	11/30	1310	S	TS	☐	☑	☐	☑	☑	☐	☑	☐	☐	☐	☐	☐		
65672-11	PB-666-27-3.5-4.0	11/30	1310	S	TS	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		5
-12	PB-666-27-6.0-6.5		1315	S	TS	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐		5
-13	PB-666-26-0.0-0.5		1400	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-14	PB-666-26-3.5-4.0		1405	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-15	PB-666-26-6.0-6.5		1410	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-16	PB-663-15-0.0-0.5		1450	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-17	PB-663-15-3.0-3.5		1455	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-18	PB-663-15-6.0-6.5		1500	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-19	FB-211130-1		1530	GW	TS	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐		7
	Container Type					2.5	[illegible]		4oz	4oz	4oz								
	Preservative						HCl												

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/30	[signature]	11/30/21 1550
[signature]	11/30/21 1717	[signature]	11/30/21 1720
[signature]	11/30 2011	Paul Mazzella	11/30/21

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. 2030

Paul Mazzella 12/1/21 0135 — 12/1/21 0135

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/1/21

ALPHA Job #: L2165672

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

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Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per attached TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene	Sample Specific Comments	TOTAL # BOTTLES
L2165672-20	FB-211130-2	11/30	1535	W	TS	☑	☑	☐	☑	☑	☑		7
-21	TB-211130	11/30	-	W	TS	☑	☑	☐	☑	☑	☑		2
						☐	☐	☐	☐	☐	☐		-
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐		

Container Type	-	-	-	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	11/30 1135		11/30/21 1550
	11/30 2000	Paul Mazzella	11/30/21 2030

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Paul Mazzella 12/1/21 0135 — 12/1/21 0135

ANALYTICAL REPORT

Lab Number:	L2165918
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY-DELINEATION
Project Number:	200.00135.005.03
Report Date:	11/30/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 11/30/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2165918-01	PB-666-21R-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 09:15	12/01/21
L2165918-02	PB-666-21R-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 09:20	12/01/21
L2165918-03	PB-666-21R-14.5-15.0	SOIL	PHILADELPHIA, PA	12/01/21 09:25	12/01/21
L2165918-04	PB-666-20R-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 09:50	12/01/21
L2165918-05	PB-666-20R-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 09:55	12/01/21
L2165918-06	PB-666-20R-14.5-15.0	SOIL	PHILADELPHIA, PA	12/01/21 10:00	12/01/21
L2165918-07	PB-663-16-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 10:40	12/01/21
L2165918-08	PB-663-16-3.0-3.5	SOIL	PHILADELPHIA, PA	12/01/21 10:45	12/01/21
L2165918-09	PB-663-16-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 10:50	12/01/21
L2165918-10	PB-663-17-0.0-0.5	SOIL	PHILADELPHIA, PA	12/01/21 11:20	12/01/21
L2165918-11	PB-663-17-6.0-6.5	SOIL	PHILADELPHIA, PA	12/01/21 11:30	12/01/21

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Case Narrative (continued)

Report Revision

November 30, 2022: The Volatile Organics reporting list has been amended on L2165918-04 and -05.

Report Submission

December 23, 2021: This final report includes the results of the Lead analysis performed on L2165918-03.

December 08, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2165918-03: The sample has an elevated detection limit for lead due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 11/30/22

ORGANICS

VOLATILES

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-04
Client ID: PB-666-20R-0.0-0.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/21 09:50
Date Received: 12/01/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/04/21 15:51
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00089	0.00030	1
Toluene	0.0043		mg/kg	0.0018	0.00097	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1
Naphthalene	ND		mg/kg	0.0071	0.0012	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	98		70-130

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-05
Client ID: PB-666-20R-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/21 09:55
Date Received: 12/01/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/04/21 16:16
Analyst: NLK
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00084	0.00028	1
Toluene	0.0062		mg/kg	0.0017	0.00091	1
p/m-Xylene	ND		mg/kg	0.0034	0.00094	1
o-Xylene	ND		mg/kg	0.0017	0.00049	1
Xylenes, Total	ND		mg/kg	0.0017	0.00049	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0034	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0034	0.00056	1
Naphthalene	ND		mg/kg	0.0067	0.0011	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	127		70-130
Dibromofluoromethane	96		70-130

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/04/21 09:09
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04-05 Batch: WG1579392-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033
Naphthalene	ND		mg/kg	0.0040	0.00065

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04-05 Batch: WG1579392-3 WG1579392-4								
Methyl tert butyl ether	103		103		66-130	0		30
Benzene	107		104		70-130	3		30
Toluene	114		110		70-130	4		30
p/m-Xylene	113		109		70-130	4		30
o-Xylene	113		109		70-130	4		30
Isopropylbenzene	114		114		70-130	0		30
1,3,5-Trimethylbenzene	115		114		70-130	1		30
1,2,4-Trimethylbenzene	114		113		70-130	1		30
Naphthalene	112		114		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		108		70-130
Toluene-d8	107		107		70-130
4-Bromofluorobenzene	106		109		70-130
Dibromofluoromethane	93		93		70-130

METALS

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-01 Date Collected: 12/01/21 09:15

Client ID: PB-666-21R-0.0-0.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3340		mg/kg	2.38	0.128	1	12/06/21 20:20	12/08/21 13:03	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-02 Date Collected: 12/01/21 09:20

Client ID: PB-666-21R-6.0-6.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 43%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	8990		mg/kg	9.01	0.483	2	12/06/21 20:20	12/08/21 13:08	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-03 Date Collected: 12/01/21 09:25

Client ID: PB-666-21R-14.5-15.0 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.3		mg/kg	11.8	0.633	5	12/22/21 06:10	12/23/21 12:50	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-07 Date Collected: 12/01/21 10:40

Client ID: PB-663-16-0.0-0.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	621		mg/kg	3.02	0.162	1	12/06/21 20:20	12/08/21 13:13	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-08 Date Collected: 12/01/21 10:45

Client ID: PB-663-16-3.0-3.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	234		mg/kg	2.53	0.136	1	12/06/21 20:20	12/08/21 13:18	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-09 Date Collected: 12/01/21 10:50

Client ID: PB-663-16-6.0-6.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.1		mg/kg	2.71	0.145	1	12/06/21 20:20	12/08/21 13:23	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-10 Date Collected: 12/01/21 11:20

Client ID: PB-663-17-0.0-0.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	508		mg/kg	2.92	0.157	1	12/06/21 20:20	12/08/21 13:29	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-11 Date Collected: 12/01/21 11:30

Client ID: PB-663-17-6.0-6.5 Date Received: 12/01/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	156		mg/kg	2.79	0.149	1	12/06/21 20:20	12/08/21 13:34	EPA 3050B	1,6010D	EW

Project Name: PES REFINERY-DELINEATION **Lab Number:** L2165918

Project Number: 200.00135.005.03 **Report Date:** 11/30/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02,07-11 Batch: WG1579583-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/06/21 20:20	12/08/21 11:50	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03 Batch: WG1585691-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/22/21 06:10	12/23/21 09:11	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 11/30/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 Batch: WG1579583-2 SRM Lot Number: D109-540								
Lead, Total	88		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 03 Batch: WG1585691-2 SRM Lot Number: D113-540								
Lead, Total	89		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 11/30/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 QC Batch ID: WG1579583-3 QC Sample: L2165740-01 Client ID: MS Sample												
Lead, Total	131	45.5	134	**7**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1585691-3 QC Sample: L2168094-05 Client ID: MS Sample												
Lead, Total	16.8	46.2	45.6	**62**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 11/30/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 QC Batch ID: WG1579583-4 QC Sample: L2165740-01 Client ID: DUP Sample						
Lead, Total	131	206	mg/kg	**45**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1585691-4 QC Sample: L2168094-05 Client ID: DUP Sample						
Lead, Total	16.8	15.5	mg/kg	8		20

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2165918
Report Date: 11/30/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,07-11 QC Batch ID: WG1579583-6 QC Sample: L2165740-01 Client ID: DUP Sample						
Lead, Total	131	164	mg/kg	**25**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-01
Client ID: PB-666-21R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:15
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.2		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-02
Client ID: PB-666-21R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:20
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	43.0		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-03
Client ID: PB-666-21R-14.5-15.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:25
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.8		%	0.100	NA	1	-	12/10/21 12:19	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-04
Client ID: PB-666-20R-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:50
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-05
Client ID: PB-666-20R-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 09:55
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.6		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-07
Client ID: PB-663-16-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 10:40
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.1		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-08
Client ID: PB-663-16-3.0-3.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 10:45
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.6		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-09
Client ID: PB-663-16-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 10:50
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.7		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-10
Client ID: PB-663-17-0.0-0.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 11:20
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03
Lab Number: L2165918
Report Date: 11/30/22

SAMPLE RESULTS

Lab ID: L2165918-11
Client ID: PB-663-17-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/21 11:30
Date Received: 12/01/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.2		%	0.100	NA	1	-	12/02/21 10:40	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY-DELINEATION

Project Number: 200.00135.005.03

Lab Number: L2165918

Report Date: 11/30/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-11 QC Batch ID: WG1578197-1 QC Sample: L2165811-03 Client ID: DUP Sample						
Solids, Total	90.1	89.5	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1581699-1 QC Sample: L2167863-01 Client ID: DUP Sample						
Solids, Total	89.6	89.4	%	0		20

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 11/30/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165918-01A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-01B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-02A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-02B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-03A	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-03B	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-04A	Vial MeOH preserved	A	NA		4.6	Y	Absent		PA-8260HLW(14)
L2165918-04B	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-04C	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-04D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L2165918-05A	Vial MeOH preserved	A	NA		4.6	Y	Absent		PA-8260HLW(14)
L2165918-05B	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-05C	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	PA-8260HLW(14)
L2165918-05D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L2165918-06A	Vial MeOH preserved	A	NA		4.6	Y	Absent		HOLD-8260HLW(14)
L2165918-06B	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	HOLD-8260HLW(14)
L2165918-06C	Vial water preserved	A	NA		4.6	Y	Absent	02-DEC-21 09:47	HOLD-8260HLW(14)
L2165918-06D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		HOLD-WETCHEM()
L2165918-07A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-07B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-08A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-08B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-09A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY-DELINEATION
Project Number: 200.00135.005.03

Lab Number: L2165918
Report Date: 11/30/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2165918-09B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-10A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-10B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)
L2165918-11A	Glass 60ml unpreserved split	A	NA		4.6	Y	Absent		PB-TI(180)
L2165918-11B	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY-DELINEATION	**Lab Number:**	L2165918
Project Number:	200.00135.005.03	**Report Date:**	11/30/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

2

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 12/2/21

ALPHA Job #: L2165918

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PES Refinery - Delineation
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information

☐ FAX ☒ ADEx

Data Deliverables

☒ EMAIL ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Report only project-specific analyte list per attached TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65918-01	PB-666-Z1R-0.0-0.5	12/1	0915	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-02	PB-666-Z1R-6.0-6.5		0920	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-03	PB-666-Z1R-14.5-15.0		0925	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	HOLD	1
-04	PB-666-Z0R-0.0-0.5		0950	S	TS	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-05	PB-666-Z0R-6.0-6.5		0955	S	TS	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-06	PB-666-Z0R-14.5-15.0		1000	S	TS	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	HOLD	4
-07	PB-663-16-0.0-0.5		1040	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-08	PB-663-16-3.0-3.5		1045	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-09	PB-663-16-6.0-6.5		1050	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-10	PB-663-17-0.0-0.5		1120	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
	Container Type					2oz	120z	120z	-	-	-	-	-	-	-	-	-		
	Preservative					-	HCl	HCl	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/1 1530		12/1/21 1530
	12/1/21 1800		12/1/21 1800
	12-1-21 2100	Paul Maggella	12/1/21 2100
Paul Maggella	12/2/21 0128		12/2/21 0138

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC) (rev. 2-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 12/2/21

ALPHA Job #: L2165918

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
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ALPHA Quote #: 13161

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☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program: PADEP Storage Tank Sampling
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list per ~~attached~~ TS

Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Benzene	Toluene	Benzo(a)pyrene	Benzo(b)fluoranthene	Naphthalene							Sample Specific Comments	TOTAL # BOTTLES
65918-11	PB-663-17-6.0-6.5	12/1	1130	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						-	-	-	-	-	-	-	-	-	-	-	-		
Preservative						-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/1 1530		12/1/21 1530
	12/1/21 1700		12/1/21 1900
	12/2 2100	Paul Mazzella	12/1/21 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(HJ) (rev. 8-JAN-12)

Paul Mazzella 12/2/21 0137

12/2/21 0137

ANALYTICAL REPORT

Lab Number:	L2202565
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY AST CLOS
Project Number:	200.00135.005.03
Report Date:	01/21/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2202565-01	PB-663-15-14.5-15.0	SOIL	PHILADELPHIA, PA	01/17/22 11:00	01/17/22
L2202565-02	PB-666-05	SOIL	PHILADELPHIA, PA	01/17/22 11:10	01/17/22
L2202565-03	PB-666-08	SOIL	PHILADELPHIA, PA	01/17/22 11:25	01/17/22
L2202565-04	PB-666-09	SOIL	PHILADELPHIA, PA	01/17/22 11:35	01/17/22
L2202565-05	PB-666-10	SOIL	PHILADELPHIA, PA	01/17/22 11:45	01/17/22
L2202565-06	PB-666-13	SOIL	PHILADELPHIA, PA	01/17/22 12:00	01/17/22

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

Semivolatile Organics

L2202565-02, -03, -05, and -06: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Caitlin Walukevich

Title: Technical Director/Representative Date: 01/21/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02 Date Collected: 01/17/22 11:10
Client ID: PB-666-05 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/20/22 14:46
Analyst: LAC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00070	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00070	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00079	1
o-Xylene	ND		mg/kg	0.0014	0.00041	1
Xylenes, Total	ND		mg/kg	0.0014	0.00041	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.00074	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0011	J	mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03 Date Collected: 01/17/22 11:25
Client ID: PB-666-08 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/18/22 13:31
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	0.0051		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	0.00083	J	mg/kg	0.0016	0.00022	1
p/m-Xylene	0.0055		mg/kg	0.0032	0.00089	1
o-Xylene	0.0042		mg/kg	0.0016	0.00046	1
Xylenes, Total	0.0097		mg/kg	0.0016	0.00046	1
Isopropylbenzene	0.00058	J	mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.0043		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0065		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04 Date Collected: 01/17/22 11:35
Client ID: PB-666-09 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/18/22 13:54
Analyst: JC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00030	1
Benzene	0.0020		mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	0.0012	J	mg/kg	0.0029	0.00082	1
o-Xylene	0.00053	J	mg/kg	0.0015	0.00043	1
Xylenes, Total	0.0017	J	mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.00020	J	mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00044	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.00089	J	mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	126		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05 Date Collected: 01/17/22 11:45
Client ID: PB-666-10 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/18/22 14:17
Analyst: JC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.0017		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00047	1
Toluene	0.0038		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	ND		mg/kg	0.0018	0.00026	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00054	1
Xylenes, Total	ND		mg/kg	0.0018	0.00054	1
Isopropylbenzene	0.00051	J	mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06 Date Collected: 01/17/22 12:00
Client ID: PB-666-13 Date Received: 01/17/22
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 01/20/22 15:38
Analyst: AJK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.0034		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.0015	J	mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/18/22 12:46
Analyst: KTD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03-05 Batch: WG1595759-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/20/22 07:29
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,06 Batch: WG1596408-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03-05 Batch: WG1595759-3 WG1595759-4								
Methyl tert butyl ether	91		88		66-130	3		30
Benzene	84		84		70-130	0		30
1,2-Dichloroethane	90		92		70-130	2		30
Toluene	85		82		70-130	4		30
1,2-Dibromoethane	96		90		70-130	6		30
Ethylbenzene	87		86		70-130	1		30
p/m-Xylene	89		88		70-130	1		30
o-Xylene	91		90		70-130	1		30
Isopropylbenzene	88		85		70-130	3		30
1,3,5-Trimethylbenzene	88		85		70-130	3		30
1,2,4-Trimethylbenzene	87		84		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	113		115		70-130
Toluene-d8	107		105		70-130
4-Bromofluorobenzene	106		103		70-130
Dibromofluoromethane	106		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,06 Batch: WG1596408-3 WG1596408-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	91		92		70-130	1		30
1,2-Dichloroethane	96		95		70-130	1		30
Toluene	90		92		70-130	2		30
1,2-Dibromoethane	87		85		70-130	2		30
Ethylbenzene	92		93		70-130	1		30
p/m-Xylene	93		94		70-130	1		30
o-Xylene	93		94		70-130	1		30
Isopropylbenzene	94		96		70-130	2		30
1,3,5-Trimethylbenzene	93		95		70-130	2		30
1,2,4-Trimethylbenzene	94		95		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	102		101		70-130
Dibromofluoromethane	100		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02
Client ID: PB-666-05
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:10
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 18:47
Analyst: WR
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.64	0.078	1
Fluorene	ND		mg/kg	0.64	0.063	1
Phenanthrene	0.099	J	mg/kg	0.39	0.078	1
Anthracene	ND		mg/kg	0.39	0.12	1
Pyrene	0.55		mg/kg	0.39	0.064	1
Benzo(a)anthracene	0.40		mg/kg	0.39	0.073	1
Chrysene	0.22	J	mg/kg	0.39	0.067	1
Benzo(b)fluoranthene	0.40		mg/kg	0.39	0.11	1
Benzo(a)pyrene	0.35	J	mg/kg	0.52	0.16	1
Benzo(ghi)perylene	0.21	J	mg/kg	0.52	0.076	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	52		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03
Client ID: PB-666-08
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:25
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 19:11
Analyst: WR
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.71	0.086	1
Fluorene	ND		mg/kg	0.71	0.069	1
Phenanthrene	ND		mg/kg	0.43	0.086	1
Anthracene	ND		mg/kg	0.43	0.14	1
Pyrene	ND		mg/kg	0.43	0.070	1
Benzo(a)anthracene	ND		mg/kg	0.43	0.080	1
Chrysene	ND		mg/kg	0.43	0.074	1
Benzo(b)fluoranthene	ND		mg/kg	0.43	0.12	1
Benzo(a)pyrene	ND		mg/kg	0.57	0.17	1
Benzo(ghi)perylene	ND		mg/kg	0.57	0.084	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04
Client ID: PB-666-09
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:35
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 19:36
Analyst: WR
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.23	0.028	1
Fluorene	ND		mg/kg	0.23	0.022	1
Phenanthrene	ND		mg/kg	0.14	0.028	1
Anthracene	ND		mg/kg	0.14	0.045	1
Pyrene	ND		mg/kg	0.14	0.023	1
Benzo(a)anthracene	ND		mg/kg	0.14	0.026	1
Chrysene	ND		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	ND		mg/kg	0.14	0.039	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.057	1
Benzo(ghi)perylene	ND		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05
Client ID: PB-666-10
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 11:45
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 20:00
Analyst: WR
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.66	0.080	1
Fluorene	ND		mg/kg	0.66	0.064	1
Phenanthrene	ND		mg/kg	0.40	0.080	1
Anthracene	ND		mg/kg	0.40	0.13	1
Pyrene	ND		mg/kg	0.40	0.066	1
Benzo(a)anthracene	ND		mg/kg	0.40	0.074	1
Chrysene	ND		mg/kg	0.40	0.069	1
Benzo(b)fluoranthene	ND		mg/kg	0.40	0.11	1
Benzo(a)pyrene	ND		mg/kg	0.53	0.16	1
Benzo(ghi)perylene	ND		mg/kg	0.53	0.078	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06
Client ID: PB-666-13
Sample Location: PHILADELPHIA, PA

Date Collected: 01/17/22 12:00
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 01/19/22 20:25
Analyst: WR
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.69	0.084	1
Fluorene	ND		mg/kg	0.69	0.067	1
Phenanthrene	ND		mg/kg	0.41	0.084	1
Anthracene	ND		mg/kg	0.41	0.13	1
Pyrene	0.52		mg/kg	0.41	0.068	1
Benzo(a)anthracene	0.30	J	mg/kg	0.41	0.077	1
Chrysene	0.28	J	mg/kg	0.41	0.071	1
Benzo(b)fluoranthene	0.91		mg/kg	0.41	0.12	1
Benzo(a)pyrene	0.57		mg/kg	0.55	0.17	1
Benzo(ghi)perylene	1.3		mg/kg	0.55	0.081	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/19/22 10:21
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 01/18/22 16:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-06 Batch: WG1595353-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	68		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-06 Batch: WG1595353-2 WG1595353-3								
Naphthalene	87		68		40-140	25		50
Fluorene	90		73		40-140	21		50
Phenanthrene	88		71		40-140	21		50
Anthracene	88		70		40-140	23		50
Pyrene	88		72		35-142	20		50
Benzo(a)anthracene	94		78		40-140	19		50
Chrysene	88		74		40-140	17		50
Benzo(b)fluoranthene	93		78		40-140	18		50
Benzo(a)pyrene	89		74		40-140	18		50
Benzo(ghi)perylene	101		83		40-140	20		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	83		69		23-120
2-Fluorobiphenyl	82		70		30-120
4-Terphenyl-d14	86		73		18-120

METALS

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-01 Date Collected: 01/17/22 11:00

Client ID: PB-663-15-14.5-15.0 Date Received: 01/17/22

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	50.6		mg/kg	3.35	0.180	1	01/19/22 07:00	01/19/22 13:06	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02
Client ID: PB-666-05
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 11:10
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	54.8		mg/kg	2.53	0.136	1	01/19/22 07:00	01/19/22 13:12	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03
Client ID: PB-666-08
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 11:25
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	258		mg/kg	2.83	0.152	1	01/19/22 07:00	01/19/22 13:16	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04 Date Collected: 01/17/22 11:35

Client ID: PB-666-09 Date Received: 01/17/22

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	9.66		mg/kg	2.69	0.144	1	01/19/22 07:00	01/19/22 13:21	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05
Client ID: PB-666-10
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 11:45
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	9.14		mg/kg	2.71	0.146	1	01/19/22 07:00	01/19/22 13:26	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS
Lab Number: L2202565
Project Number: 200.00135.005.03
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06
Client ID: PB-666-13
Sample Location: PHILADELPHIA, PA
Date Collected: 01/17/22 12:00
Date Received: 01/17/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	176		mg/kg	2.75	0.147	1	01/19/22 07:00	01/19/22 13:31	EPA 3050B	1,6010D	SV

Project Name: PHILADELPHIA REFINERY AST CLOS **Lab Number:** L2202565

Project Number: 200.00135.005.03 **Report Date:** 01/21/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG1595270-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	01/19/22 07:00	01/19/22 10:41	1,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1595270-2 SRM Lot Number: D113-540								
Lead, Total	85		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1595270-3 QC Sample: L2202783-06 Client ID: MS Sample												
Lead, Total	4.41	42.1	35.6	**74**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1595270-4 QC Sample: L2202783-06 Client ID: DUP Sample						
Lead, Total	4.41	4.36	mg/kg	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-01
Client ID: PB-663-15-14.5-15.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:00
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.6		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-02
Client ID: PB-666-05
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:10
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.0		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-03
Client ID: PB-666-08
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:25
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-04
Client ID: PB-666-09
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 01/17/22 11:35
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.5		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-05
Client ID: PB-666-10
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 11:45
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.5		%	0.100	NA	1	-	01/18/22 09:15	121,2540G	RI

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03
Lab Number: L2202565
Report Date: 01/21/22

SAMPLE RESULTS

Lab ID: L2202565-06
Client ID: PB-666-13
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 01/17/22 12:00
Date Received: 01/17/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.5		%	0.100	NA	1	-	01/18/22 09:33	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY AST CLOS

Project Number: 200.00135.005.03

Lab Number: L2202565

Report Date: 01/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1595057-1 QC Sample: L2202565-01 Client ID: PB-663-15-14.5-15.0						
Solids, Total	58.6	58.3	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 06 QC Batch ID: WG1595059-1 QC Sample: L2202591-01 Client ID: DUP Sample						
Solids, Total	70.6	67.5	%	4		20

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202565-01A	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-01B	Glass 60ml unpreserved split	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-02A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2202565-02B	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-02C	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-02D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-02F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2202565-03A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2202565-03B	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-03C	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-03D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-03F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2202565-04A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2202565-04B	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-04C	Vial water preserved	A	NA		3.2	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-04D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2202565-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2202565-04F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2202565-05A	Vial MeOH preserved	B	NA		3.1	Y	Absent		PA-8260HLW(14)
L2202565-05B	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY AST CLOS
Project Number: 200.00135.005.03

Lab Number: L2202565
Report Date: 01/21/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202565-05C	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-05D	Plastic 120ml unpreserved	B	NA		3.1	Y	Absent		TS(7)
L2202565-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.1	Y	Absent		PB-TI(180)
L2202565-05F	Glass 120ml/4oz unpreserved	B	NA		3.1	Y	Absent		PA-PAH(14)
L2202565-06A	Vial MeOH preserved	B	NA		3.1	Y	Absent		PA-8260HLW(14)
L2202565-06B	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-06C	Vial water preserved	B	NA		3.1	Y	Absent	18-JAN-22 04:48	PA-8260HLW(14)
L2202565-06D	Plastic 120ml unpreserved	B	NA		3.1	Y	Absent		TS(7)
L2202565-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.1	Y	Absent		PB-TI(180)
L2202565-06F	Glass 120ml/4oz unpreserved	B	NA		3.1	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY AST CLOS	**Lab Number:**	L2202565
Project Number:	200.00135.005.03	**Report Date:**	01/21/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2202565

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 01/18/22

ALPHA Job #: L2202565

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery - AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.005.03
Project Manager: William Schmidt
ALPHA Quote #: 13161

Turn-Around Time

☒ Standard ☑ Rush (ONLY IF PRE-APPROVED)
4-DAY TAT
Due Date: Time:

Report Information – Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3894

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist (see attached for compounds) Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP Shortlist 1-5 (see attached)	PADEP Shortlist 1 & 2 (see attached)	PADEP Shortlist 4 (see attached)	PADEP Shortlist 3-5 (see attached)	PADEP Shortlist 5 (see attached)	PADEP Shortlist 6 (see attached)	pH	Benzene	Cumene	Tetraethylene Glycol	VOC portion of PADEP Shortlist	LEAD	Sample Specific Comments	TOTAL # BOTTLES
02565-01	PB-663-15-14.5-15.0	1/17	1100	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	ONLY LEAD	1
-02	PB-666-05		1110	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-03	PB-666-08		1125	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-04	PB-666-09		1135	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-05	PB-666-10		1145	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-06	PB-666-13		1200	S	TS	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-07						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
Preservative	F	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	1/17 1538	STN AM	1/17/22 15:36
	1/17/22 1800		
	1-9-2100		1/18/22 0215
	1/19/22 0215		1/18/22 0215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(A-R) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L2300966
Client:	Terraphase Engineering Inc. 1100 East Hector Street Suite 416 Conshohocken, PA 19428
ATTN:	Nick Scala
Phone:	(215) 297-3502
Project Name:	FORMER PHILA REFINERY
Project Number:	P044.001.002
Report Date:	01/20/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2300966-01	TG01-MW-03-7.5-8.0	SOIL	AST CLOSURE	01/05/23 09:35	01/06/23
L2300966-02	TG01-MW-03-8.5-9.0	SOIL	AST CLOSURE	01/05/23 09:45	01/06/23
L2300966-03	PB-672-13R-7.0-7.5	SOIL	AST CLOSURE	01/05/23 11:40	01/06/23
L2300966-04	PB-672-13R-18.5-19.0	SOIL	AST CLOSURE	01/05/23 11:50	01/06/23
L2300966-05	PB-666-15R-5.5-6.0	SOIL	AST CLOSURE	01/05/23 12:20	01/06/23
L2300966-06	PB-663-11R-6.0-6.5	SOIL	AST CLOSURE	01/05/23 12:50	01/06/23
L2300966-07	PB-663-03R-3.5-4.0	SOIL	AST CLOSURE	01/05/23 13:25	01/06/23
L2300966-08	TG01-MW-01-7.5-8.0	SOIL	AST CLOSURE	01/05/23 14:05	01/06/23
L2300966-09	TG01-MW-01-7.5-8.0D	SOIL	AST CLOSURE	01/05/23 14:05	01/06/23
L2300966-10	TG01-MW-01-8.0-8.5	SOIL	AST CLOSURE	01/05/23 14:15	01/06/23
L2300966-11	TB-230105-1	WATER	AST CLOSURE	01/05/23 00:00	01/06/23

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

Case Narrative (continued)

Report Submission

January 20, 2023: This final report includes the results of the Volatile Organics and Total Lead analyses performed on L2300966-08, -09, and -10.

January 13, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics

L2300966-01: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2300966-01 (Low): The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (271%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2300966-10D2: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (232%) due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Semivolatile Organics

L2300966-06: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

Case Narrative (continued)

Total Metals

L2300966-09: The sample has an elevated detection limit due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 01/20/23

ORGANICS

VOLATILES

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-01
Client ID: TG01-MW-03-7.5-8.0
Sample Location: AST CLOSURE
Date Collected: 01/05/23 09:35
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 17:29
Analyst: JIC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.21	0.021	1
Benzene	0.12		mg/kg	0.053	0.018	1
Toluene	ND		mg/kg	0.10	0.057	1
p/m-Xylene	ND		mg/kg	0.21	0.059	1
o-Xylene	0.070	J	mg/kg	0.10	0.031	1
Xylenes, Total	0.070	J	mg/kg	0.10	0.031	1
Isopropylbenzene	1.4		mg/kg	0.10	0.012	1
1,3,5-Trimethylbenzene	0.26		mg/kg	0.21	0.020	1
1,2,4-Trimethylbenzene	0.48		mg/kg	0.21	0.035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-01
Client ID: TG01-MW-03-7.5-8.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 09:35
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/11/23 18:45
Analyst: AJK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	0.030		mg/kg	0.00084	0.00028	1
Toluene	ND		mg/kg	0.0017	0.00092	1
p/m-Xylene	0.0030	J	mg/kg	0.0034	0.00094	1
o-Xylene	0.0076		mg/kg	0.0017	0.00049	1
Xylenes, Total	0.011	J	mg/kg	0.0017	0.00049	1
Isopropylbenzene	0.17		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.030		mg/kg	0.0034	0.00032	1
1,2,4-Trimethylbenzene	0.051		mg/kg	0.0034	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	**271**	Q	70-130
Dibromofluoromethane	106		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-03 Date Collected: 01/05/23 11:40

Client ID: PB-672-13R-7.0-7.5 Date Received: 01/06/23

Sample Location: AST CLOSURE Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 01/09/23 17:52

Analyst: JIC

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	ND		mg/kg	0.00052	0.00017	1
Toluene	ND		mg/kg	0.0010	0.00057	1
p/m-Xylene	ND		mg/kg	0.0021	0.00058	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-05
Client ID: PB-666-15R-5.5-6.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 12:20
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 15:11
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
Toluene	ND		mg/kg	0.0011	0.00062	1
p/m-Xylene	ND		mg/kg	0.0023	0.00064	1
o-Xylene	ND		mg/kg	0.0011	0.00033	1
Xylenes, Total	ND		mg/kg	0.0011	0.00033	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	120		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-06
Client ID: PB-663-11R-6.0-6.5
Sample Location: AST CLOSURE

Date Collected: 01/05/23 12:50
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 15:38
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00044	1
Benzene	ND		mg/kg	0.0011	0.00037	1
Toluene	ND		mg/kg	0.0022	0.0012	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00064	1
Xylenes, Total	ND		mg/kg	0.0022	0.00064	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	75		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-07 Date Collected: 01/05/23 13:25

Client ID: PB-663-03R-3.5-4.0 Date Received: 01/06/23

Sample Location: AST CLOSURE Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 01/09/23 16:05

Analyst: JIC

Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00078	0.00026	1
Toluene	0.00085	J	mg/kg	0.0016	0.00084	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0016	0.00045	1
Xylenes, Total	ND		mg/kg	0.0016	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	121		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-08
Client ID: TG01-MW-01-7.5-8.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/16/23 15:32
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.20	0.020	1
Benzene	10.		mg/kg	0.050	0.017	1
Toluene	0.31		mg/kg	0.10	0.055	1
p/m-Xylene	1.2		mg/kg	0.20	0.056	1
o-Xylene	1.1		mg/kg	0.10	0.029	1
Xylenes, Total	2.3		mg/kg	0.10	0.029	1
Isopropylbenzene	0.97		mg/kg	0.10	0.011	1
1,3,5-Trimethylbenzene	1.4		mg/kg	0.20	0.020	1
1,2,4-Trimethylbenzene	5.6		mg/kg	0.20	0.034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-09 Date Collected: 01/05/23 14:05

Client ID: TG01-MW-01-7.5-8.0D Date Received: 01/06/23

Sample Location: AST CLOSURE Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 01/16/23 16:10

Analyst: JIC

Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.20	0.020	1
Benzene	9.5		mg/kg	0.049	0.016	1
Toluene	0.39		mg/kg	0.098	0.053	1
p/m-Xylene	1.5		mg/kg	0.20	0.055	1
o-Xylene	1.2		mg/kg	0.098	0.029	1
Xylenes, Total	2.7		mg/kg	0.098	0.029	1
Isopropylbenzene	0.26		mg/kg	0.098	0.011	1
1,3,5-Trimethylbenzene	1.4		mg/kg	0.20	0.019	1
1,2,4-Trimethylbenzene	6.0		mg/kg	0.20	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-10 D2 Date Collected: 01/05/23 14:15
Client ID: TG01-MW-01-8.0-8.5 Date Received: 01/06/23
Sample Location: AST CLOSURE Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/17/23 15:46
Analyst: AJK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.41	0.041	2
Benzene	0.79		mg/kg	0.10	0.034	2
Toluene	0.13	J	mg/kg	0.21	0.11	2
p/m-Xylene	1.8		mg/kg	0.41	0.12	2
o-Xylene	2.1		mg/kg	0.21	0.060	2
Xylenes, Total	3.9		mg/kg	0.21	0.060	2
Isopropylbenzene	94.	E	mg/kg	0.21	0.022	2
1,3,5-Trimethylbenzene	40.		mg/kg	0.41	0.040	2
1,2,4-Trimethylbenzene	100	E	mg/kg	0.41	0.069	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**232**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-10 D
Client ID: TG01-MW-01-8.0-8.5
Sample Location: AST CLOSURE

Date Collected: 01/05/23 14:15
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/16/23 16:49
Analyst: JIC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	92.		mg/kg	1.0	0.11	10
1,2,4-Trimethylbenzene	94.		mg/kg	2.1	0.34	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-11 Date Collected: 01/05/23 00:00

Client ID: TB-230105-1 Date Received: 01/06/23

Sample Location: AST CLOSURE Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8260D

Analytical Date: 01/07/23 15:08

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/07/23 13:35
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 11 Batch: WG1731384-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	0.75	0.20
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 14:43
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05-07 Batch: WG1731733-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	116		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 11:16
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1731910-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 11:16
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03 Batch: WG1731911-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/11/23 10:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1732326-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/16/23 14:15
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 08-10 Batch: WG1734239-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILA REFINERY **Lab Number:** L2300966

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/17/23 10:05
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 10 Batch: WG1734272-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Batch: WG1731384-3 WG1731384-4								
Methyl tert butyl ether	84		92		63-130	9		20
Benzene	95		98		70-130	3		20
Toluene	99		100		70-130	1		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	99		100		64-130	1		20
1,2,4-Trimethylbenzene	99		100		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		99		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	107		110		70-130
Dibromofluoromethane	94		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05-07 Batch: WG1731733-3 WG1731733-4								
Methyl tert butyl ether	92		94		66-130	2		30
Benzene	102		105		70-130	3		30
Toluene	94		95		70-130	1		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	99		101		70-130	2		30
Isopropylbenzene	93		95		70-130	2		30
1,3,5-Trimethylbenzene	95		96		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	95		94		70-130
4-Bromofluorobenzene	84		84		70-130
Dibromofluoromethane	109		110		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1731910-3 WG1731910-4								
Methyl tert butyl ether	91		92		66-130	1		30
Benzene	89		86		70-130	3		30
Toluene	89		85		70-130	5		30
p/m-Xylene	89		86		70-130	3		30
o-Xylene	87		84		70-130	4		30
Isopropylbenzene	91		86		70-130	6		30
1,3,5-Trimethylbenzene	92		88		70-130	4		30
1,2,4-Trimethylbenzene	88		84		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		101		70-130
Toluene-d8	106		105		70-130
4-Bromofluorobenzene	109		107		70-130
Dibromofluoromethane	95		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03 Batch: WG1731911-3 WG1731911-4								
Methyl tert butyl ether	91		92		66-130	1		30
Benzene	89		86		70-130	3		30
Toluene	89		85		70-130	5		30
p/m-Xylene	89		86		70-130	3		30
o-Xylene	87		84		70-130	4		30
Isopropylbenzene	91		86		70-130	6		30
1,3,5-Trimethylbenzene	92		88		70-130	4		30
1,2,4-Trimethylbenzene	88		84		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		101		70-130
Toluene-d8	106		105		70-130
4-Bromofluorobenzene	109		107		70-130
Dibromofluoromethane	95		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1732326-3 WG1732326-4								
Methyl tert butyl ether	85		90		66-130	6		30
Benzene	84		90		70-130	7		30
Toluene	74		79		70-130	7		30
p/m-Xylene	74		79		70-130	7		30
o-Xylene	76		81		70-130	6		30
Isopropylbenzene	72		75		70-130	4		30
1,3,5-Trimethylbenzene	72		76		70-130	5		30
1,2,4-Trimethylbenzene	72		76		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		103		70-130
Toluene-d8	94		95		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	101		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 08-10 Batch: WG1734239-3 WG1734239-4								
Methyl tert butyl ether	108		108		66-130	0		30
Benzene	105		103		70-130	2		30
Toluene	89		89		70-130	0		30
p/m-Xylene	90		89		70-130	1		30
o-Xylene	92		91		70-130	1		30
Isopropylbenzene	86		85		70-130	1		30
1,3,5-Trimethylbenzene	86		85		70-130	1		30
1,2,4-Trimethylbenzene	85		84		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	92		92		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	103		102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 10 Batch: WG1734272-3 WG1734272-4								
Methyl tert butyl ether	105		104		66-130	1		30
Benzene	106		104		70-130	2		30
Toluene	106		104		70-130	2		30
p/m-Xylene	107		104		70-130	3		30
o-Xylene	108		104		70-130	4		30
Isopropylbenzene	107		100		70-130	7		30
1,3,5-Trimethylbenzene	109		102		70-130	7		30
1,2,4-Trimethylbenzene	111		104		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		101		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	99		97		70-130
Dibromofluoromethane	98		97		70-130

SEMIVOLATILES

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-01
Client ID: TG01-MW-03-7.5-8.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 09:35
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/09/23 17:16
Analyst: SZ
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 16:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.7		mg/kg	0.049	0.030	1
Benzo(a)pyrene	0.17	J	mg/kg	0.20	0.060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	55		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-02
Client ID: TG01-MW-03-8.5-9.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 09:45
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/11/23 09:57
Analyst: MG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 01/10/23 00:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.051		mg/kg	0.047	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	53		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-03
Client ID: PB-672-13R-7.0-7.5
Sample Location: AST CLOSURE

Date Collected: 01/05/23 11:40
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/09/23 16:53
Analyst: SZ
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 16:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.037	0.023	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	77		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-05
Client ID: PB-666-15R-5.5-6.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 12:20
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/09/23 16:29
Analyst: SZ
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 16:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32		mg/kg	0.041	0.025	1
Benzo(a)pyrene	4.6		mg/kg	0.16	0.050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	77		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-06
Client ID: PB-663-11R-6.0-6.5
Sample Location: AST CLOSURE

Date Collected: 01/05/23 12:50
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/09/23 16:06
Analyst: SZ
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 16:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.13	0.082	1
Benzo(a)pyrene	ND		mg/kg	0.54	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	56		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-07
Client ID: PB-663-03R-3.5-4.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 13:25
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/09/23 15:42
Analyst: SZ
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 16:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.055	0.034	1
Benzo(a)pyrene	0.38		mg/kg	0.22	0.067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	54		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-08
Client ID: TG01-MW-01-7.5-8.0
Sample Location: AST CLOSURE

Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/11/23 08:47
Analyst: MG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 01/10/23 00:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.17		mg/kg	0.047	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	32		23-120
2-Fluorobiphenyl	45		30-120
4-Terphenyl-d14	56		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-09
Client ID: TG01-MW-01-7.5-8.0D
Sample Location: AST CLOSURE

Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/11/23 09:34
Analyst: MG
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 01/10/23 00:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.17		mg/kg	0.046	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	28		23-120
2-Fluorobiphenyl	46		30-120
4-Terphenyl-d14	51		18-120

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-10
Client ID: TG01-MW-01-8.0-8.5
Sample Location: AST CLOSURE

Date Collected: 01/05/23 14:15
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/11/23 09:10
Analyst: MG
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 01/10/23 00:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.6		mg/kg	0.049	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	60		18-120

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 01/09/23 15:19
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 01/07/23 16:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03,05-07 Batch: WG1731034-1					
Naphthalene	ND		mg/kg	0.032	0.020
Benzo(a)pyrene	ND		mg/kg	0.13	0.039

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	77		18-120

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 01/10/23 23:44
Analyst: MG

Extraction Method: EPA 3546
Extraction Date: 01/10/23 00:11

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,08-10 Batch: WG1731585-1					
Naphthalene	ND		mg/kg	0.033	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	83		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03,05-07 Batch: WG1731034-2 WG1731034-3								
Naphthalene	67		72		40-140	7		50
Benzo(a)pyrene	76		82		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	57		59		23-120
2-Fluorobiphenyl	77		77		30-120
4-Terphenyl-d14	76		79		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,08-10 Batch: WG1731585-2 WG1731585-3								
Naphthalene	61		62		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	55		56		23-120
2-Fluorobiphenyl	64		68		30-120
4-Terphenyl-d14	68		73		18-120

METALS

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-01
Client ID: TG01-MW-03-7.5-8.0
Sample Location: AST CLOSURE
Date Collected: 01/05/23 09:35
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	38.3		mg/kg	2.84	0.152	1	01/09/23 21:21	01/10/23 11:18	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-03
Client ID: PB-672-13R-7.0-7.5
Sample Location: AST CLOSURE
Date Collected: 01/05/23 11:40
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.2		mg/kg	2.23	0.120	1	01/09/23 21:21	01/10/23 11:21	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-05
Client ID: PB-666-15R-5.5-6.0
Sample Location: AST CLOSURE
Date Collected: 01/05/23 12:20
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	11000		mg/kg	12.0	0.643	5	01/09/23 21:21	01/10/23 12:22	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-06
Client ID: PB-663-11R-6.0-6.5
Sample Location: AST CLOSURE
Date Collected: 01/05/23 12:50
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	60.8		mg/kg	2.76	0.148	1	01/09/23 21:21	01/10/23 11:45	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-07
Client ID: PB-663-03R-3.5-4.0
Sample Location: AST CLOSURE
Date Collected: 01/05/23 13:25
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1150		mg/kg	3.16	0.169	1	01/09/23 21:21	01/10/23 11:48	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-08
Client ID: TG01-MW-01-7.5-8.0
Sample Location: AST CLOSURE
Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	90.8		mg/kg	2.67	0.143	1	01/16/23 10:54	01/16/23 18:05	EPA 3050B	1,6010D	DMB

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-09
Client ID: TG01-MW-01-7.5-8.0D
Sample Location: AST CLOSURE
Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	99.7	J	mg/kg	1380	74.1	500	01/16/23 10:54	01/17/23 07:32	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILA REFINERY
Lab Number: L2300966
Project Number: P044.001.002
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-10
Client ID: TG01-MW-01-8.0-8.5
Sample Location: AST CLOSURE
Date Collected: 01/05/23 14:15
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	190		mg/kg	2.90	0.156	1	01/16/23 10:54	01/16/23 21:56	EPA 3050B	1,6010D	GCL

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05-07 Batch: WG1731133-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	01/09/23 21:21	01/10/23 09:31	1,6010D	EGW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08-10 Batch: WG1733616-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	01/16/23 10:54	01/16/23 17:31	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05-07 Batch: WG1731133-2 SRM Lot Number: D116-540								
Lead, Total	99		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 08-10 Batch: WG1733616-2 SRM Lot Number: D116-540								
Lead, Total	96		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05-07 QC Batch ID: WG1731133-3 QC Sample: L2300870-07 Client ID: MS Sample												
Lead, Total	316	62.3	340	**38**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 08-10 QC Batch ID: WG1733616-3 QC Sample: L2302007-17 Client ID: MS Sample												
Lead, Total	80.0	50.6	116	**71**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05-07 QC Batch ID: WG1731133-4 QC Sample: L2300870-07 Client ID: DUP Sample						
Lead, Total	316	268	mg/kg	16		20
Total Metals - Mansfield Lab Associated sample(s): 08-10 QC Batch ID: WG1733616-4 QC Sample: L2302007-17 Client ID: DUP Sample						
Lead, Total	80.0	73.4	mg/kg	9		20

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2300966
Report Date: 01/20/23

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-10 QC Batch ID: WG1733616-6 QC Sample: L2302007-17 Client ID: DUP Sample						
Lead, Total	80.0	75.4	mg/kg	6		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-01
Client ID: TG01-MW-03-7.5-8.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 09:35
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.1		%	0.100	NA	1	-	01/08/23 19:03	121,2540G	MF

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-02
Client ID: TG01-MW-03-8.5-9.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 09:45
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.2		%	0.100	NA	1	-	01/10/23 08:39	121,2540G	ROI

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-03
Client ID: PB-672-13R-7.0-7.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 01/05/23 11:40
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.8		%	0.100	NA	1	-	01/08/23 19:03	121,2540G	MF

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-05
Client ID: PB-666-15R-5.5-6.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 12:20
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	01/08/23 19:03	121,2540G	MF

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-06
Client ID: PB-663-11R-6.0-6.5
Sample Location: AST CLOSURE
Date Collected: 01/05/23 12:50
Date Received: 01/06/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	01/08/23 19:03	121,2540G	MF

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-07
Client ID: PB-663-03R-3.5-4.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 13:25
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.6		%	0.100	NA	1	-	01/08/23 19:03	121,2540G	MF

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-08
Client ID: TG01-MW-01-7.5-8.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.3		%	0.100	NA	1	-	01/10/23 08:39	121,2540G	ROI

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-09
Client ID: TG01-MW-01-7.5-8.0D
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 14:05
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.8		%	0.100	NA	1	-	01/10/23 08:39	121,2540G	ROI

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002
Lab Number: L2300966
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300966-10
Client ID: TG01-MW-01-8.0-8.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 01/05/23 14:15
Date Received: 01/06/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.5		%	0.100	NA	1	-	01/10/23 08:39	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILA REFINERY

Project Number: P044.001.002

Lab Number: L2300966

Report Date: 01/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05-07 QC Batch ID: WG1731220-1 QC Sample: L2300907-01 Client ID: DUP Sample						
Solids, Total	90.8	90.2	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 02,08-10 QC Batch ID: WG1731677-1 QC Sample: L2301161-01 Client ID: DUP Sample						
Solids, Total	87.1	86.6	%	1		20

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300966-01A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300966-01B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300966-01C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300966-01D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-01F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-01X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300966-01Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260H(14),PA-8260HLW(14)
L2300966-01Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260H(14),PA-8260HLW(14)
L2300966-02A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-02B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-02C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-02D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		HOLD-WETCHEM(),TS(7)
L2300966-02E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-METAL(180)
L2300966-02F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14),HOLD-8270(14)
L2300966-02X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-02Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	HOLD-8260HLW(14)
L2300966-02Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	HOLD-8260HLW(14)
L2300966-03A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-03B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-03C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-03D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300966-03F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-03X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-03Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-03Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-04A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-04B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-04C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-04D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		HOLD-WETCHEM()
L2300966-04E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-METAL(180)
L2300966-04F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		HOLD-8270(14)
L2300966-04X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2300966-04Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	HOLD-8260HLW(14)
L2300966-04Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	HOLD-8260HLW(14)
L2300966-05A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-05B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-05C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-05D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-05F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-05X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-05Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-05Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-06A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-06B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-06C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-06D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-06F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300966-06X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-06Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-06Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-07A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-07B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-07C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-07D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-07F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-07X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-07Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-07Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-08A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-08B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-08C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-08D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-08E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-08F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-08X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-08Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-08Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-09A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-09B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-09C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-09D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-09E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-09F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-09X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILA REFINERY
Project Number: P044.001.002

Lab Number: L2300966
Report Date: 01/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300966-09Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-09Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-10A	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-10B	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-10C	5 gram Encore Sampler	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-10D	Plastic 2oz unpreserved for TS	A	NA		2.5	Y	Absent		TS(7)
L2300966-10E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		PB-TI(180)
L2300966-10F	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		PA-PAH(14)
L2300966-10X	Vial MeOH preserved split	A	NA		2.5	Y	Absent		PA-8260HLW(14)
L2300966-10Y	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-10Z	Vial Water preserved split	A	NA		2.5	Y	Absent	07-JAN-23 08:23	PA-8260HLW(14)
L2300966-11A	Vial HCl preserved	A	NA		2.5	Y	Absent		PA-8260(14)
L2300966-11B	Vial HCl preserved	A	NA		2.5	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILA REFINERY	**Lab Number:**	L2300966
Project Number:	P044.001.002	**Report Date:**	01/20/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd in Lab: 01/07/23

ALPHA Job #: L2300966

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 1100 E Hector St, ste 416
Conshohocken, PA 19428
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Phila Refinery AST Closure
Project Location:
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: 8260 - Benzene, Toluene, Xylenes, 1,3,5-TMB, Cumene, MTBE; 8270 - Benzo(a)Pyrene Quantification; 6020 - Lead

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260	8270	6020	Sample Specific Comments	TOTAL # BOTTLES
	~~T601-03-7.5-8.0~~ 2nd 1/6									
009606-01	T601-MW-03-7.5-8.0	1/5/23	935	SO	SMM	X	X	X		
-02	T601-MW-03-8.5-9.0	1/5/23	945	SO	SMM	"	"	"		
-03	PB-672-13R-7.0-7.5	1/5/23	1140	SO	SMM	X	X	X		
-04	PB-672-13R-18.5-19.0	1/5/23	1150	SO	SMM	"	"	"		
-05	PB-666-15R-5.5-6.0	1/5/23	1220	SO	SMM	X	X	X		
-06	PB-663-11R-6.0-6.5	1/5/23	1250	SO	SMM	X	X	X		
-07	PB-663-03R-3.5-4.0	1/5/23	1325	SO	SMM	X	X	X		
-08	T601-MW-01-7.5-8.0	1/5/23	1405	SO	SMM	"	"	"		
-09	T601-MW-01-7.5-8.0D	1/5/23	1405	SO	SMM	"	"	"		

Container Type																	
Preservative																	

Relinquished By:	Date/Time	Received By:	Date/Time
	1/6/23 1155	ST - FedEx	1/6/23 14:55
ST	1/6/23 1800		1/6/23 1800
	1/6/23 2100	NAL	1-6-23 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE _____ OF _____

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 01/07/23

ALPHA Job #: L2300966

Client Information

Client: Terraphase Engineering
Address: 1106 E Hector St, Ste 416
Conshohocken, PA 19428
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Drake Refinery
Project Location: Attleboro
Project #: P0141.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD@terraphase.com
Equis Format EDD

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260- Benzene, Toluene, Xylenes, 1,2,4-TMB, 1,3,5-TMB, MTBE	8270- Benzo(a)Pyrene, Naphthalene	6020- Lead	Sample Specific Comments	TOTAL # BOTTLES
009966 -10	TG01-MW-01-8.0-8.5		1415			H	H	H		
-11	TB-230105-1		1545			X				

SAMPLE HANDLING
Filtration _____
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type																							
Preservative																							

Relinquished By:	Date/Time	Received By:	Date/Time
	1/6/23 1455	STL AAL	1/6/23 14:55
	1/6/23 1800		1/6/23 1800
	1/6/23 2100	UPS	1.6.23 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

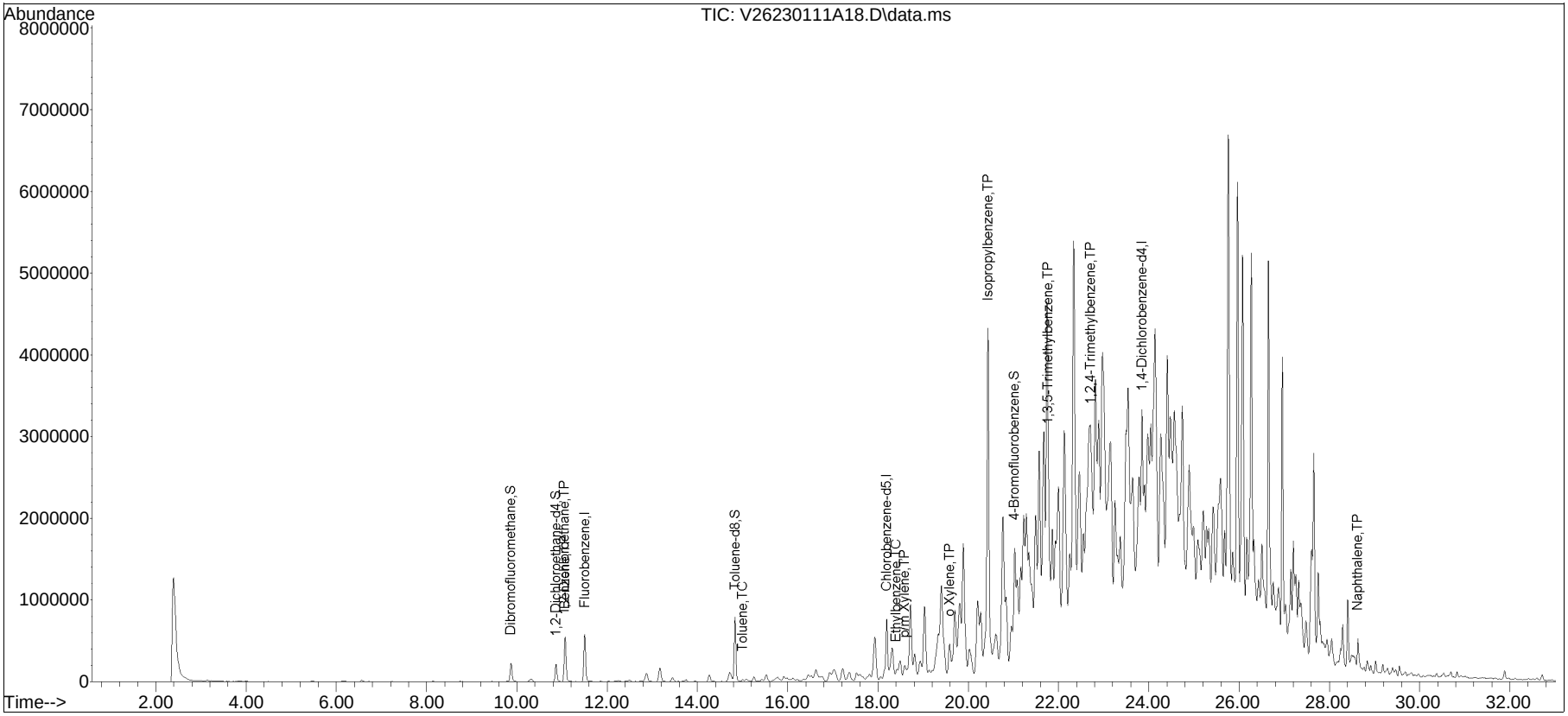
FORM NO: 01-01 (rev. 14-OCT-07)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA126\2023\230111A\
Data File : V26230111A18.D
Acq On : 11 Jan 2023 06:45 pm
Operator : VOA126:AJK
Sample : L2300966-01,31,4.42,5,,Z,R2F
Misc : WG1732326,ICAL19551
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jan 11 19:30:01 2023
Quant Method : I:\VOLATILES\VOA126\2023\230111A\V126_221202N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Dec 05 10:28:08 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list11A\V26230111A01.D•



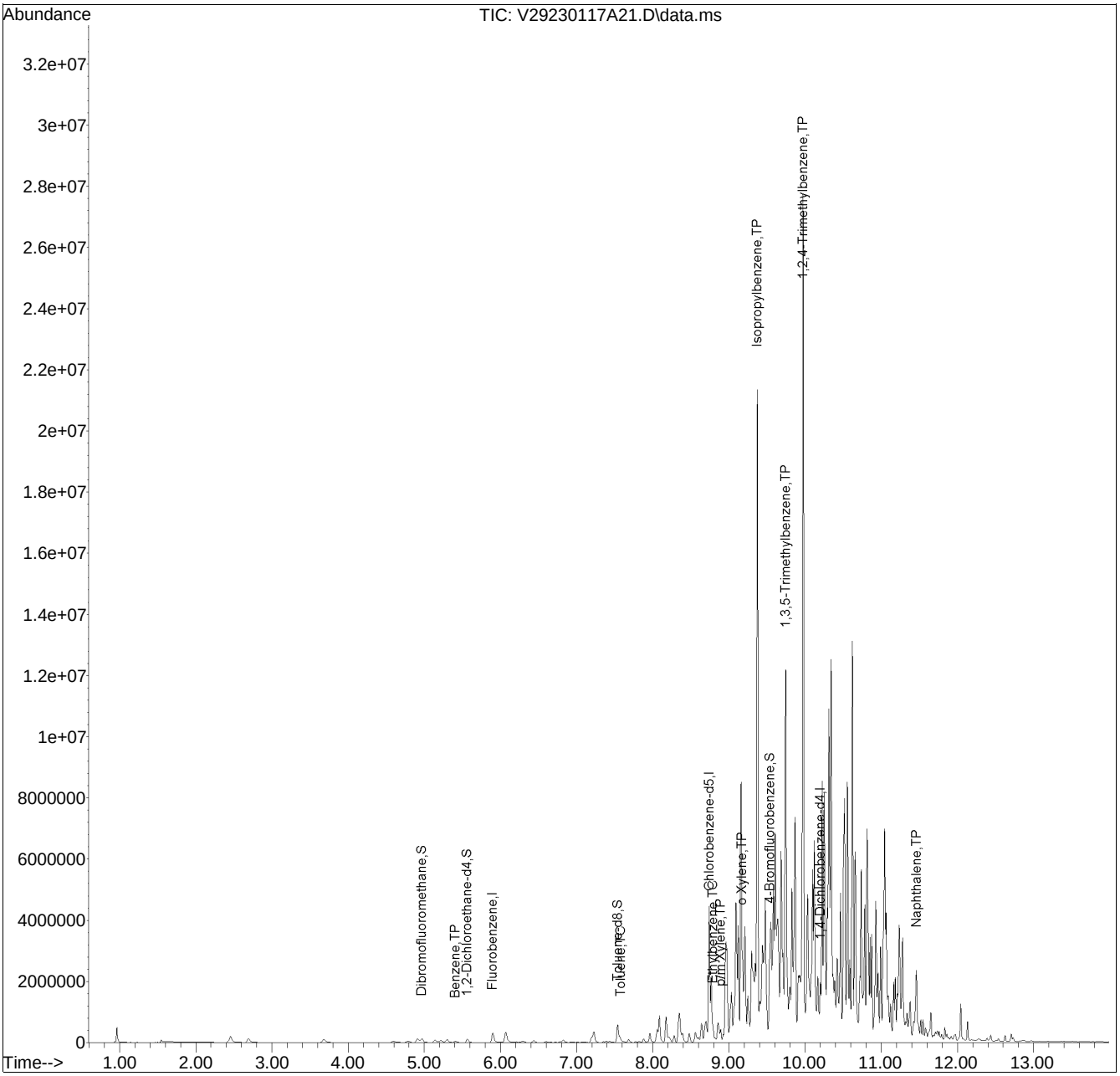
V126_221202N_8260.m Wed Jan 11 22:04:07 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2023\230117A\
Data File : V29230117A21.D
Acq On : 17 Jan 2023 03:46 pm
Operator : VOA129:AJK
Sample : l2300966-10d2,31h,4.82,5,0.05,,x,r2f
Misc : WG1734272,ICAL19631
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jan 17 21:50:32 2023
Quant Method : I:\VOLATILES\VOA129\2023\230117A\V129_221227N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Dec 30 10:37:19 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list17A\V29230117A01.D•



ANALYTICAL REPORT

Lab Number:	L2304491
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 108 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	02/02/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2304491
Report Date: 02/02/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2304491-01	TG02-MW-14-230125	WATER	3144 W. PASSYUNK AVE.	01/25/23 09:30	01/26/23
L2304491-02	TG02-MW-07-230125	WATER	3144 W. PASSYUNK AVE.	01/25/23 11:35	01/26/23
L2304491-03	TG01-MW-01-230125	WATER	3144 W. PASSYUNK AVE.	01/25/23 12:15	01/26/23
L2304491-04	TG01-MW-03-230125	WATER	3144 W. PASSYUNK AVE.	01/25/23 14:10	01/26/23
L2304491-05	TG01-MW-02-230126	WATER	3144 W. PASSYUNK AVE.	01/26/23 09:40	01/26/23
L2304491-06	TG02-MW-16-230126	WATER	3144 W. PASSYUNK AVE.	01/26/23 10:25	01/26/23
L2304491-07	TG01-MW-02-230126D	WATER	3144 W. PASSYUNK AVE.	01/26/23 09:40	01/26/23
L2304491-08	S-77P-230124	WATER	3144 W. PASSYUNK AVE.	01/24/23 15:20	01/26/23
L2304491-09	S-200-230124	WATER	3144 W. PASSYUNK AVE.	01/24/23 15:50	01/26/23
L2304491-10	FB-230126-1	WATER	3144 W. PASSYUNK AVE.	01/26/23 11:45	01/26/23
L2304491-11	FB-230126-2	WATER	3144 W. PASSYUNK AVE.	01/26/23 11:40	01/26/23
L2304491-12	TB-230126-1	WATER	3144 W. PASSYUNK AVE.	01/26/23 11:50	01/26/23
L2304491-13	TB-230126-2	WATER	3144 W. PASSYUNK AVE.	01/26/23 11:55	01/26/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2304491-04: The collection date and time on the chain of custody was 25-JAN-23 14:55; however, the collection date/time on the container label was 25-JAN-23 14:10. At the client's request, the collection date/time is reported as 25-JAN-23 14:10.

Volatile Organics

The WG1739352-6/-7 MS/MSD recoveries, performed on L2304491-03, are outside the acceptance criteria for toluene (0%/0%) and 1,2,4-trimethylbenzene (0%/0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

Microextractables

The WG1738819-3 MS recovery for 1,2-dibromoethane (132%), performed on L2304491-03, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

The WG1738819-3/-4 Laboratory Duplicate RPD for 1,2-dibromoethane (25%), performed on L2304491-03, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

Semivolatile Organics by SIM

The WG1738236-4/-5 MS/MSD recoveries, performed on L2304491-03, are outside the acceptance criteria for naphthalene (0%/0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

Dissolved Metals

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

Case Narrative (continued)

The WG1738040-3/-4 MS/MSD recoveries, performed on L2304491-03, are outside the acceptance criteria for lead (58%/58%). A post digestion spike was performed and was within acceptance criteria.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 02/02/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-01
Client ID: TG02-MW-14-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 09:30
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 18:19
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-01 D2 Date Collected: 01/25/23 09:30
Client ID: TG02-MW-14-230125 Date Received: 01/26/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 13:35
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	690	E	ug/l	2.5	0.42	2.5
Benzene	330		ug/l	1.2	0.40	2.5
1,2-Dichloroethane	ND		ug/l	1.2	0.33	2.5
Toluene	6.5		ug/l	1.9	0.51	2.5
1,2-Dibromoethane	ND		ug/l	5.0	0.48	2.5
Ethylbenzene	2.3		ug/l	1.2	0.42	2.5
p/m-Xylene	11		ug/l	2.5	0.83	2.5
o-Xylene	3.0		ug/l	2.5	0.98	2.5
Xylenes, Total	14		ug/l	2.5	0.83	2.5
1,3,5-Trimethylbenzene	8.2		ug/l	6.2	0.54	2.5
1,2,4-Trimethylbenzene	17		ug/l	6.2	0.48	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	78		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	89		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-01 D
Client ID: TG02-MW-14-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 09:30
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 13:14
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	710		ug/l	10	1.7	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	94		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-02
Client ID: TG02-MW-07-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 11:35
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 18:27
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-02 D
Client ID: TG02-MW-07-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 11:35
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 12:53
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	300		ug/l	5.0	0.83	5
Benzene	180		ug/l	2.5	0.80	5
1,2-Dichloroethane	ND		ug/l	2.5	0.66	5
Toluene	76		ug/l	3.8	1.0	5
1,2-Dibromoethane	ND		ug/l	10	0.96	5
Ethylbenzene	25		ug/l	2.5	0.84	5
p/m-Xylene	63		ug/l	5.0	1.7	5
o-Xylene	20		ug/l	5.0	2.0	5
Xylenes, Total	83		ug/l	5.0	1.7	5
1,3,5-Trimethylbenzene	7.5	J	ug/l	12	1.1	5
1,2,4-Trimethylbenzene	27		ug/l	12	0.96	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	88		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-03
Client ID: TG01-MW-01-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 12:15
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 18:36
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-03 D
Client ID: TG01-MW-01-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 12:15
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 12:13
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	10	1.7	10
Benzene	10		ug/l	5.0	1.6	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
Toluene	1200		ug/l	7.5	2.0	10
1,2-Dibromoethane	ND		ug/l	20	1.9	10
Ethylbenzene	150		ug/l	5.0	1.7	10
p/m-Xylene	1300		ug/l	10	3.3	10
o-Xylene	560		ug/l	10	3.9	10
Xylenes, Total	1900		ug/l	10	3.3	10
1,3,5-Trimethylbenzene	660		ug/l	25	2.2	10
1,2,4-Trimethylbenzene	1600		ug/l	25	1.9	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-04
Client ID: TG01-MW-03-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 14:10
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 18:44
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-04
Client ID: TG01-MW-03-230125
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/25/23 14:10
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 21:52
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	5.7		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	0.18	J	ug/l	0.50	0.17	1
p/m-Xylene	0.52	J	ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	0.52	J	ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	0.28	J	ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	0.51	J	ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	116		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-05
Client ID: TG01-MW-02-230126
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 09:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 18:52
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-05 Date Collected: 01/26/23 09:40
Client ID: TG01-MW-02-230126 Date Received: 01/26/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 22:17
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.44	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	16		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	114		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-06
Client ID: TG02-MW-16-230126
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 10:25
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:00
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-06 D
Client ID: TG02-MW-16-230126
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 10:25
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 22:42
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	410		ug/l	10	1.7	10
Benzene	460		ug/l	5.0	1.6	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
Toluene	450		ug/l	7.5	2.0	10
1,2-Dibromoethane	ND		ug/l	20	1.9	10
Ethylbenzene	460		ug/l	5.0	1.7	10
p/m-Xylene	1800		ug/l	10	3.3	10
o-Xylene	530		ug/l	10	3.9	10
Xylenes, Total	2300		ug/l	10	3.3	10
1,3,5-Trimethylbenzene	270		ug/l	25	2.2	10
1,2,4-Trimethylbenzene	740		ug/l	25	1.9	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	85		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-07
Client ID: TG01-MW-02-230126D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 09:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:08
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-07 Date Collected: 01/26/23 09:40
Client ID: TG01-MW-02-230126D Date Received: 01/26/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 23:06
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.44	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	17		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	0.38	J	ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	0.38	J	ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	0.31	J	ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	113		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-08
Client ID: S-77P-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:20
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-08 D
Client ID: S-77P-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:20
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 12:33
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	330		ug/l	2.5	0.42	2.5
Benzene	290		ug/l	1.2	0.40	2.5
1,2-Dichloroethane	ND		ug/l	1.2	0.33	2.5
Toluene	24		ug/l	1.9	0.51	2.5
1,2-Dibromoethane	ND		ug/l	5.0	0.48	2.5
Ethylbenzene	6.4		ug/l	1.2	0.42	2.5
p/m-Xylene	50		ug/l	2.5	0.83	2.5
o-Xylene	3.8		ug/l	2.5	0.98	2.5
Xylenes, Total	54		ug/l	2.5	0.83	2.5
1,3,5-Trimethylbenzene	1.7	J	ug/l	6.2	0.54	2.5
1,2,4-Trimethylbenzene	2.0	J	ug/l	6.2	0.48	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	88		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-09
Client ID: S-200-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:50
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:25
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-09 D
Client ID: S-200-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:50
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 23:55
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	200		ug/l	25	4.2	25
Benzene	4600		ug/l	12	4.0	25
1,2-Dichloroethane	ND		ug/l	12	3.3	25
Toluene	150		ug/l	19	5.1	25
1,2-Dibromoethane	ND		ug/l	50	4.8	25
Ethylbenzene	1100		ug/l	12	4.2	25
p/m-Xylene	1900		ug/l	25	8.3	25
o-Xylene	840		ug/l	25	9.8	25
Xylenes, Total	2700		ug/l	25	8.3	25
1,3,5-Trimethylbenzene	470		ug/l	62	5.4	25
1,2,4-Trimethylbenzene	1200		ug/l	62	4.8	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	95		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-10
Client ID: FB-230126-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:45
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:34
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-10 Date Collected: 01/26/23 11:45
Client ID: FB-230126-1 Date Received: 01/26/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 20:14
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	122		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-11
Client ID: FB-230126-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:42
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-11
Client ID: FB-230126-2
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/26/23 11:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/29/23 20:39
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	117		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-12
Client ID: TB-230126-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:50
Date Received: 01/26/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:51
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-12
Client ID: TB-230126-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:50
Date Received: 01/26/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 11:52
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-13
Client ID: TB-230126-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:55
Date Received: 01/26/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/30/23 19:59
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-13
Client ID: TB-230126-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:55
Date Received: 01/26/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/30/23 11:31
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	95		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 01/30/23 17:22
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/30/23 16:16

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-13 Batch: WG1738819-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/29/23 15:44
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04-07,09-11 Batch: WG1739125-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	123		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/30/23 10:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03,08,12-13 Batch: WG1739352-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-13 Batch: WG1738819-2								
1,2-Dibromoethane	110		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-07,09-11 Batch: WG1739125-3 WG1739125-4								
Methyl tert butyl ether	97		100		63-130	3		20
Benzene	96		99		70-130	3		20
1,2-Dichloroethane	110		110		70-130	0		20
Toluene	97		92		70-130	5		20
1,2-Dibromoethane	84		86		70-130	2		20
Ethylbenzene	100		97		70-130	3		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	94		94		64-130	0		20
1,2,4-Trimethylbenzene	91		92		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	115		115		70-130
Toluene-d8	100		97		70-130
4-Bromofluorobenzene	99		101		70-130
Dibromofluoromethane	110		113		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,08,12-13 Batch: WG1739352-3 WG1739352-4								
Methyl tert butyl ether	83		88		63-130	6		20
Benzene	99		99		70-130	0		20
1,2-Dichloroethane	84		91		70-130	8		20
Toluene	94		95		70-130	1		20
1,2-Dibromoethane	83		84		70-130	1		20
Ethylbenzene	100		98		70-130	2		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		99		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	82		91		70-130
Toluene-d8	97		99		70-130
4-Bromofluorobenzene	107		107		70-130
Dibromofluoromethane	97		105		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01-13 QC Batch ID: WG1738819-3 WG1738819-4 QC Sample: L2304491-03 Client ID: TG01-MW-01-230125													
1,2-Dibromoethane	ND	0.255	0.336	**132**	Q	0.261	104		80-120	**25**	Q	20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,08,12-13 QC Batch ID: WG1739352-6 WG1739352-7 QC Sample: L2304491-03 Client ID: TG01-MW-01-230125												
Methyl tert butyl ether	ND	100	96	96		100	100		63-130	4		20
Benzene	10	100	120	110		130	120		70-130	8		20
1,2-Dichloroethane	ND	100	98	98		100	100		70-130	2		20
Toluene	1200	100	1200	**0**	Q	1200	**0**	Q	70-130	0		20
1,2-Dibromoethane	ND	100	94	94		100	100		70-130	6		20
Ethylbenzene	150	100	240	90		250	100		70-130	4		20
p/m-Xylene	1300	200	1400	**50**	Q	1400	**50**	Q	70-130	0		20
o-Xylene	560	200	710	75		740	90		70-130	4		20
1,3,5-Trimethylbenzene	660	100	670	**10**	Q	680	**20**	Q	64-130	1		20
1,2,4-Trimethylbenzene	1600	100	1500	**0**	Q	1500	**0**	Q	70-130	0		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		85		70-130
4-Bromofluorobenzene	103		103		70-130
Dibromofluoromethane	97		99		70-130
Toluene-d8	96		96		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-01
Client ID: TG02-MW-14-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 09:30
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 15:42
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	7.3		ug/l	0.10	0.05	1
Fluorene	2.3		ug/l	0.10	0.01	1
Phenanthrene	1.3		ug/l	0.05	0.02	1
Anthracene	0.05	J	ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	115		23-120
2-Fluorobiphenyl	65		15-120
4-Terphenyl-d14	67		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-02
Client ID: TG02-MW-07-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 11:35
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 15:58
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	10		ug/l	0.10	0.05	1
Fluorene	1.5		ug/l	0.10	0.01	1
Phenanthrene	0.90		ug/l	0.05	0.02	1
Anthracene	0.11		ug/l	0.10	0.01	1
Pyrene	0.06	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	68		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-03
Client ID: TG01-MW-01-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 12:15
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 15:25
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	22		ug/l	0.10	0.05	1
Fluorene	0.39		ug/l	0.10	0.01	1
Phenanthrene	1.1		ug/l	0.05	0.02	1
Anthracene	0.33		ug/l	0.10	0.01	1
Pyrene	0.22		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**138**	Q	23-120
2-Fluorobiphenyl	65		15-120
4-Terphenyl-d14	76		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-04
Client ID: TG01-MW-03-230125
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/25/23 14:10
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 16:15
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.2		ug/l	0.10	0.05	1
Fluorene	0.20		ug/l	0.10	0.01	1
Phenanthrene	0.25		ug/l	0.05	0.02	1
Anthracene	0.28		ug/l	0.10	0.01	1
Pyrene	0.23		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.05	J	ug/l	0.05	0.02	1
Chrysene	0.03	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.04	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	59		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-05
Client ID: TG01-MW-02-230126
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 09:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 16:31
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.2		ug/l	0.10	0.05	1
Fluorene	0.11		ug/l	0.10	0.01	1
Phenanthrene	0.36		ug/l	0.05	0.02	1
Anthracene	0.14		ug/l	0.10	0.01	1
Pyrene	0.32		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.06		ug/l	0.05	0.02	1
Chrysene	0.07	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	57		15-120
4-Terphenyl-d14	57		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-06
Client ID: TG02-MW-16-230126
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 10:25
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 16:48
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	29		ug/l	0.10	0.05	1
Fluorene	1.1		ug/l	0.10	0.01	1
Phenanthrene	1.0		ug/l	0.05	0.02	1
Anthracene	0.10		ug/l	0.10	0.01	1
Pyrene	0.05	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**141**	Q	23-120
2-Fluorobiphenyl	72		15-120
4-Terphenyl-d14	75		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-07
Client ID: TG01-MW-02-230126D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 09:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 17:05
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.3		ug/l	0.10	0.05	1
Fluorene	0.11		ug/l	0.10	0.01	1
Phenanthrene	0.38		ug/l	0.05	0.02	1
Anthracene	0.13		ug/l	0.10	0.01	1
Pyrene	0.29		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.06		ug/l	0.05	0.02	1
Chrysene	0.07	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	52		15-120
4-Terphenyl-d14	52		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-08
Client ID: S-77P-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:20
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 17:21
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	4.5		ug/l	0.10	0.05	1
Fluorene	11		ug/l	0.10	0.01	1
Phenanthrene	7.4		ug/l	0.05	0.02	1
Anthracene	1.0		ug/l	0.10	0.01	1
Pyrene	0.33		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.04	J	ug/l	0.05	0.02	1
Chrysene	0.04	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**151**	Q	23-120
2-Fluorobiphenyl	77		15-120
4-Terphenyl-d14	76		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-09
Client ID: S-200-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:50
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 17:38
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	5000	E	ug/l	0.10	0.05	1
Fluorene	300	E	ug/l	0.10	0.01	1
Phenanthrene	960	E	ug/l	0.05	0.02	1
Anthracene	230	E	ug/l	0.10	0.01	1
Pyrene	430	E	ug/l	0.10	0.02	1
Benzo(a)anthracene	150	E	ug/l	0.05	0.02	1
Chrysene	140	E	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	110	E	ug/l	0.05	0.01	1
Benzo(a)pyrene	92	E	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	38		ug/l	0.10	0.01	1
Benzo(ghi)perylene	39		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**156**	Q	23-120
2-Fluorobiphenyl	96		15-120
4-Terphenyl-d14	81		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-09 D
Client ID: S-200-230124
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/24/23 15:50
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/01/23 16:45
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	6600		ug/l	10	4.9	100
Fluorene	470		ug/l	10	1.4	100
Phenanthrene	1100		ug/l	5.0	2.3	100
Anthracene	260		ug/l	10	1.4	100
Pyrene	430		ug/l	10	1.9	100
Benzo(a)anthracene	150		ug/l	5.0	2.0	100
Chrysene	150		ug/l	10	1.2	100
Benzo(b)fluoranthene	120		ug/l	5.0	1.2	100
Benzo(a)pyrene	95		ug/l	10	1.5	100

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-10
Client ID: FB-230126-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:45
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/02/23 08:23
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 02/01/23 18:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**128**	Q	23-120
2-Fluorobiphenyl	88		15-120
4-Terphenyl-d14	93		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-11
Client ID: FB-230126-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/26/23 11:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/02/23 08:39
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 02/01/23 18:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	72		15-120
4-Terphenyl-d14	74		41-149

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2304491

Project Number: P044.001.002 **Report Date:** 02/02/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 01/29/23 14:36
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/27/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-09 Batch: WG1738236-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	0.03	J	ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	64		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 02/02/23 07:34
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 02/01/23 18:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10-11 Batch: WG1739827-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	76		15-120
4-Terphenyl-d14	77		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-09 Batch: WG1738236-2 WG1738236-3								
Naphthalene	57		67		40-140	16		40
Fluorene	56		66		40-140	16		40
Phenanthrene	57		68		40-140	18		40
Anthracene	57		68		40-140	18		40
Pyrene	61		73		26-127	18		40
Benzo(a)anthracene	60		70		40-140	15		40
Chrysene	60		71		40-140	17		40
Benzo(b)fluoranthene	57		69		40-140	19		40
Benzo(a)pyrene	61		72		40-140	17		40
Indeno(1,2,3-cd)pyrene	71		82		40-140	14		40
Benzo(ghi)perylene	65		75		40-140	14		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	97		112		23-120
2-Fluorobiphenyl	57		66		15-120
4-Terphenyl-d14	58		70		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10-11 Batch: WG1739827-2 WG1739827-3								
Naphthalene	68		76		40-140	11		40
Fluorene	69		78		40-140	12		40
Phenanthrene	71		82		40-140	14		40
Anthracene	72		83		40-140	14		40
Pyrene	66		79		26-127	18		40
Benzo(a)anthracene	72		84		40-140	15		40
Chrysene	75		86		40-140	14		40
Benzo(b)fluoranthene	86		82		40-140	5		40
Benzo(a)pyrene	74		85		40-140	14		40
Indeno(1,2,3-cd)pyrene	76		93		40-140	20		40
Benzo(ghi)perylene	70		89		40-140	24		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	110		**124**	Q	23-120
2-Fluorobiphenyl	75		80		15-120
4-Terphenyl-d14	89		82		41-149

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-09 QC Batch ID: WG1738236-4 WG1738236-5 QC Sample: L2304491-03 Client ID: TG01-MW-01-230125												
Naphthalene	22	3.64	20	**0**	Q	20	**0**	Q	40-140	0		40
Fluorene	0.39	3.64	2.7	64		2.7	64		40-140	0		40
Phenanthrene	1.1	3.64	3.2	58		3.3	61		40-140	3		40
Anthracene	0.33	3.64	2.6	62		2.6	62		40-140	0		40
Pyrene	0.22	3.64	2.4	60		2.6	65		26-127	8		40
Benzo(a)anthracene	0.03J	3.64	2.2	61		2.2	61		40-140	0		40
Chrysene	0.02J	3.64	2.3	63		2.3	63		40-140	0		40
Benzo(b)fluoranthene	ND	3.64	1.9	52		2.0	55		40-140	5		40
Benzo(a)pyrene	ND	3.64	2.1	58		2.2	61		40-140	5		40
Indeno(1,2,3-cd)pyrene	ND	3.64	2.2	61		2.2	61		40-140	0		40
Benzo(ghi)perylene	ND	3.64	2.1	58		2.1	58		40-140	0		40

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2-Fluorobiphenyl	60		59		15-120
4-Terphenyl-d14	63		69		41-149
Nitrobenzene-d5	**125**	Q	114		23-120

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-01
Client ID: TG02-MW-14-230125
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/25/23 09:30
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.9584	J	ug/l	1.000	0.3430	1	01/27/23 23:37	01/29/23 23:59	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-02
Client ID: TG02-MW-07-230125
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/25/23 11:35
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	1.048		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:04	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-03
Client ID: TG01-MW-01-230125
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 01/25/23 12:15
Date Received: 01/26/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/29/23 23:25	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-04
Client ID: TG01-MW-03-230125
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 01/25/23 14:10
Date Received: 01/26/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	1.810		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:09	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-05
Client ID: TG01-MW-02-230126
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/26/23 09:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:13	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-06
Client ID: TG02-MW-16-230126
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/26/23 10:25
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	9.963		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:18	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-07
Client ID: TG01-MW-02-230126D
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/26/23 09:40
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:23	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-08
Client ID: S-77P-230124
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/24/23 15:20
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:28	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-09
Client ID: S-200-230124
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/24/23 15:50
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.8838	J	ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:33	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2304491
Project Number: P044.001.002
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-10
Client ID: FB-230126-1
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 01/26/23 11:45
Date Received: 01/26/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:38	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

SAMPLE RESULTS

Lab ID: L2304491-11
Client ID: FB-230126-2
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 01/26/23 11:40
Date Received: 01/26/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/30/23 00:52	EPA 3005A	1,6020B	WKP

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2304491
Report Date: 02/02/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-11 Batch: WG1738040-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/27/23 23:37	01/29/23 22:56	1,6020B	WKP

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2304491

Report Date: 02/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-11 Batch: WG1738040-2								
Lead, Dissolved	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2304491
Report Date: 02/02/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-11 QC Batch ID: WG1738040-3 WG1738040-4 QC Sample: L2304491-03 Client ID: TG01-MW-01-230125												
Lead, Dissolved	ND	530	309.8	**58**	Q	306.0	**58**	Q	75-125	1		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2304491
Report Date: 02/02/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2304491-01A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-01B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-01C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-01D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-01E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-01F	Plastic 250ml HNO3 preserved	B	<2	<2	4.2	Y	Absent		PB-6020S-PPB(180)
L2304491-01G	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-01H	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-02A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-02B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-02C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-02D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-02E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-02F	Plastic 250ml HNO3 preserved	B	<2	<2	4.2	Y	Absent		PB-6020S-PPB(180)
L2304491-02G	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-02H	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-03A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03A1	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03A2	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03B1	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03B2	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2304491-03C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03C1	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03C2	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-03D	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-03D1	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-03D2	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-03E	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-03E1	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-03E2	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-03F	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-03F1	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-03F2	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-03G	Amber 250ml unpreserved	A	12	12	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-03G1	Amber 250ml unpreserved	A	12	12	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-03G2	Amber 250ml unpreserved	A	12	12	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-03H	Amber 250ml unpreserved	A	12	12	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-03H1	Amber 250ml unpreserved	A	12	12	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-03H2	Amber 250ml unpreserved	A	12	12	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-04A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-04B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-04C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-04D	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-04E	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-04F	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-04G	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-04H	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-05A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-05B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2304491-05C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-05D	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-05E	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-05F	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-05G	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-05H	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-06A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-06B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-06C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-06D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-06E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-06F	Plastic 250ml HNO3 preserved	B	<2	<2	4.2	Y	Absent		PB-6020S-PPB(180)
L2304491-06G	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-06H	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-07A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-07B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-07C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-07D	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-07E	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-07F	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-07G	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-07H	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-08A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-08B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-08C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-08D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-08E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-08F	Plastic 250ml HNO3 preserved	B	<2	<2	4.2	Y	Absent		PB-6020S-PPB(180)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2304491-08G	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-08H	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-09A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-09B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-09C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-09D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-09E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-09F	Plastic 250ml HNO3 preserved	B	<2	<2	4.2	Y	Absent		PB-6020S-PPB(180)
L2304491-09G	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-09H	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-10A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-10B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-10C	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-10D	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-10E	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-10F	Plastic 250ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		PB-6020S-PPB(180)
L2304491-10G	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-10H	Amber 250ml unpreserved	A	7	7	5.1	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-11A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-11B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-11C	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-11D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-11E	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-11F	Plastic 250ml HNO3 preserved	B	<2	<2	4.2	Y	Absent		PB-6020S-PPB(180)
L2304491-11G	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-11H	Amber 250ml unpreserved	B	7	7	4.2	Y	Absent		PA-PAHSIM-LVI(7)
L2304491-12A	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)
L2304491-12B	Vial HCl preserved	A	NA		5.1	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2304491
Report Date: 02/02/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2304491-12C	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-12D	Vial Na2S2O3 preserved	A	NA		5.1	Y	Absent		8011(14)
L2304491-13A	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-13B	Vial HCl preserved	B	NA		4.2	Y	Absent		PA-8260(14)
L2304491-13C	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)
L2304491-13D	Vial Na2S2O3 preserved	B	NA		4.2	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2304491
Project Number:	P044.001.002	**Report Date:**	02/02/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 1/27/23

ALPHA Job #: L2304491

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 105 Princeton, NJ 08540
Phone: 215 297 3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: P044.001.002
Project #: 3144 Passyunk Avenue
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDO format EQ-13
email EDO@terraphase.com
* See attached Short Lists.

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: VOCs - Short List 1-6	SVOCs - Short List 1-6	Lead	Sample Specific Comments
044491-01	TG02-MW-14-230125	1/25/23	9:30	GW	KSO	X	X	X	
02	TG02-MW-07-230125	1/25/23	11:35	GW	KSO	X	X	X	
03	TG01-MW-01-230125	1/25/23	12:15	GW	SMM	X	X	X	
↓	TG01-MW-01-230125MS	1/25/23	12:15	GW	SMM	X	X	X	
↓	TG01-MW-01-230125MSD	1/25/23	12:15	GW	SMM	X	X	X	
04	TG01-MW-03-230125	1/25/23	14:55	GW	~~SMM~~ KSO	X	X	X	
05	TG01-MW-02-230126	1/26/23	9:40	GW	SMM	X	X	X	
06	TG02-MW-16-230126	1/26/23	10:25	GW	KSO	X	X	X	
07	TG01-MW-02-230126D	1/26/23	9:40	GW	SMM	X	X	X	
08	S-77P-230124	1/24/23	15:20	GW	KSO	X	X	X	

SAMPLE HANDLING

Filtration
☐ Done
☒ Not needed (Lead)
☐ Lab to do
Preservation Field filtered
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

Container Type															
Preservative															

Relinquished By:	Date/Time	Received By:	Date/Time
	1/26/23 12:45		1/26/23 1345
	1/26/23 1800		1/26/23 1800
	1/26/23 2100		1/26/23 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 1/27/23

ALPHA Job #: L2304491

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: ~~400 E Hr~~ 100 Canal Pointe Blvd
Princeton, NJ 08540
Phone: 215 297 3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 Passyunk Ave
Project #: P0414.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD format Ea-13
email EDD@terraphase.com
& see attached short list

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs Short List 1-6	SVOCs Short List 1-6	Lead	Sample Specific Comments	TOTAL # BOTTLES
04491-09	S-200-230124	1/24/23	15:50	GW	EAB	X	X	X		
10	FB-230126-1	1/26/23	11:45	FB	SMM	X	X	X		
11	FB-230126-2	1/26/23	11:40	FB	KJO	X	X	X		
12	TB-230126-1	1/26/23	11:50	TB	SMM	X				
13	TB-230126-2	1/26/23	11:55	TB	KJO	X				

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not needed (lead) Bioled filtered
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	1/26/23 12:45		1/26/23 1245
	1/26/23 1800		1/26/23 1800
	1/26/23 2100		1/26/23 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

- **Short List 1**. *Leaded Gasoline, Aviation Gasoline and Jet Fuel*: benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, and lead.
- **Short List 2**. *Unleaded Gasoline*: benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 3**. *Kerosene, Fuel Oil No. 1*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 4**. *Diesel Fuel and Fuel Oil No. 2*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethyl benzene, and 1,3,5-trimethyl benzene.
- **Short List 5**. *Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids*: benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene.
- **Short List 6**. *Waste Oil*: benzene, toluene, ethyl benzene, cumene, naphthalene (Method 8270), pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)pyrene, and lead.

Serial_No:02022312:17

ANALYTICAL REPORT

Lab Number:	L2310384
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	03/07/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2310384
Report Date: 03/07/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2310384-01	TG01-MW-01-230227	WATER	3144 W. PASSYUNK AVE.	02/27/23 09:00	02/28/23
L2310384-02	TG01-MW-03-230227	WATER	3144 W. PASSYUNK AVE.	02/27/23 09:30	02/28/23
L2310384-03	TG01-MW-03-230227D	WATER	3144 W. PASSYUNK AVE.	02/27/23 09:30	02/28/23
L2310384-04	TG01-MW-02-230227	WATER	3144 W. PASSYUNK AVE.	02/27/23 11:25	02/28/23
L2310384-05	FB-230227-2	WATER	3144 W. PASSYUNK AVE.	02/27/23 12:00	02/28/23
L2310384-06	TB-230227-2	WATER	3144 W. PASSYUNK AVE.	02/27/23 00:00	02/28/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2310384
Project Number:	P044.001.002	**Report Date:**	03/07/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2310384
Project Number:	P044.001.002	**Report Date:**	03/07/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L2310384-03: The sample identified as "TG01-MW-03-230227" on the chain of custody was identified as "TG01-MW-03-230227-D" on the container label. At the client's request, the sample is reported as "TG01-MW-03-230227D".

Volatile Organics

L2310384-02D, -03D, and -04D: The sample has elevated detection limits due to the dilution required by the sample matrix. (foam)

The WG1751352-6/-7 MS/MSD recoveries, performed on L2310384-01, are outside the acceptance criteria for toluene (0%) and 1,2,4-trimethylbenzene (0%). The unacceptable percent recoveries are attributed to the elevated concentrations of target compounds present in the native sample.

Microextractables

The WG1749849-4 MS recovery for 1,2-dibromoethane (123%), performed on L2310384-01, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Dissolved Metals

The WG1749823-3/-4 MS/MSD recoveries, performed on L2310384-01, are outside the acceptance criteria for lead (54%/56%). A post digestion spike was performed and was within acceptance criteria.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 03/07/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-01
Client ID: TG01-MW-01-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:00
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 03/01/23 14:51
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2310384

Project Number: P044.001.002 **Report Date:** 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-01 D
Client ID: TG01-MW-01-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:00
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 03/03/23 16:53
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	10	1.7	10
Benzene	9.5		ug/l	5.0	1.6	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
Toluene	1300		ug/l	7.5	2.0	10
1,2-Dibromoethane	ND		ug/l	20	1.9	10
Ethylbenzene	150		ug/l	5.0	1.7	10
p/m-Xylene	1400		ug/l	10	3.3	10
o-Xylene	580		ug/l	10	3.9	10
Xylenes, Total	2000		ug/l	10	3.3	10
Isopropylbenzene	72		ug/l	5.0	1.9	10
1,3,5-Trimethylbenzene	670		ug/l	25	2.2	10
1,2,4-Trimethylbenzene	1700		ug/l	25	1.9	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-02
Client ID: TG01-MW-03-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 03/01/23 15:00
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2310384

Project Number: P044.001.002 **Report Date:** 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-02 D
Client ID: TG01-MW-03-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 03/03/23 17:17
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	10	1.7	10
Benzene	8.1		ug/l	5.0	1.6	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
Toluene	ND		ug/l	7.5	2.0	10
1,2-Dibromoethane	ND		ug/l	20	1.9	10
Ethylbenzene	ND		ug/l	5.0	1.7	10
p/m-Xylene	ND		ug/l	10	3.3	10
o-Xylene	ND		ug/l	10	3.9	10
Xylenes, Total	ND		ug/l	10	3.3	10
Isopropylbenzene	ND		ug/l	5.0	1.9	10
1,3,5-Trimethylbenzene	2.7	J	ug/l	25	2.2	10
1,2,4-Trimethylbenzene	7.5	J	ug/l	25	1.9	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-03
Client ID: TG01-MW-03-230227D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 03/01/23 15:08
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2310384

Project Number: P044.001.002 **Report Date:** 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-03 D
Client ID: TG01-MW-03-230227D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 03/03/23 17:41
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	5.0	0.83	5
Benzene	8.4		ug/l	2.5	0.80	5
1,2-Dichloroethane	ND		ug/l	2.5	0.66	5
Toluene	ND		ug/l	3.8	1.0	5
1,2-Dibromoethane	ND		ug/l	10	0.96	5
Ethylbenzene	ND		ug/l	2.5	0.84	5
p/m-Xylene	ND		ug/l	5.0	1.7	5
o-Xylene	ND		ug/l	5.0	2.0	5
Xylenes, Total	ND		ug/l	5.0	1.7	5
Isopropylbenzene	1.4	J	ug/l	2.5	0.94	5
1,3,5-Trimethylbenzene	ND		ug/l	12	1.1	5
1,2,4-Trimethylbenzene	1.5	J	ug/l	12	0.96	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-04
Client ID: TG01-MW-02-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 11:25
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 03/01/23 15:16
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2310384

Project Number: P044.001.002 **Report Date:** 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-04 D
Client ID: TG01-MW-02-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 11:25
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 03/03/23 18:05
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	10	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
Toluene	ND		ug/l	7.5	2.0	10
1,2-Dibromoethane	ND		ug/l	20	1.9	10
Ethylbenzene	ND		ug/l	5.0	1.7	10
p/m-Xylene	ND		ug/l	10	3.3	10
o-Xylene	ND		ug/l	10	3.9	10
Xylenes, Total	ND		ug/l	10	3.3	10
Isopropylbenzene	ND		ug/l	5.0	1.9	10
1,3,5-Trimethylbenzene	ND		ug/l	25	2.2	10
1,2,4-Trimethylbenzene	ND		ug/l	25	1.9	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-05
Client ID: FB-230227-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 12:00
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 03/01/23 15:25
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-05
Client ID: FB-230227-2
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 02/27/23 12:00
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 03/03/23 16:06
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-06
Client ID: TB-230227-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 00:00
Date Received: 02/28/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 03/01/23 15:33
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2310384

Project Number: P044.001.002 **Report Date:** 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-06 Date Collected: 02/27/23 00:00
Client ID: TB-230227-2 Date Received: 02/28/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 03/03/23 16:29
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	109		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 03/01/23 13:03
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 03/01/23 11:54

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-06 Batch: WG1749849-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2310384

Project Number: P044.001.002 **Report Date:** 03/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 03/03/23 10:08
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1751352-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2310384

Report Date: 03/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-06 Batch: WG1749849-2								
1,2-Dibromoethane	111		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2310384

Report Date: 03/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1751352-3 WG1751352-4								
Methyl tert butyl ether	90		100		63-130	11		20
Benzene	100		110		70-130	10		20
1,2-Dichloroethane	110		110		70-130	0		20
Toluene	100		110		70-130	10		20
1,2-Dibromoethane	100		110		70-130	10		20
Ethylbenzene	100		110		70-130	10		20
p/m-Xylene	100		110		70-130	10		20
o-Xylene	100		110		70-130	10		20
Isopropylbenzene	110		120		70-130	9		20
1,3,5-Trimethylbenzene	110		120		64-130	9		20
1,2,4-Trimethylbenzene	110		120		70-130	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		112		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	103		102		70-130
Dibromofluoromethane	96		96		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2310384

Report Date: 03/07/23

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1749849-3 WG1749849-4 QC Sample: L2310384-01 Client ID: TG01-MW-01-230227													
1,2-Dibromoethane	ND	0.244	0.270	111		0.306	**123**	Q	80-120	13		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1751352-6 WG1751352-7 QC Sample: L2310384-01 Client ID: TG01-MW-01-230227												
Methyl tert butyl ether	ND	100	100	100		100	100		63-130	0		20
Benzene	9.5	100	120	111		120	111		70-130	0		20
1,2-Dichloroethane	ND	100	110	110		110	110		70-130	0		20
Toluene	1300	100	1300	**0**	Q	1300	**0**	Q	70-130	0		20
1,2-Dibromoethane	ND	100	100	100		110	110		70-130	10		20
Ethylbenzene	150	100	250	100		250	100		70-130	0		20
p/m-Xylene	1400	200	1500	**50**	Q	1500	**50**	Q	70-130	0		20
o-Xylene	580	200	760	90		760	90		70-130	0		20
Isopropylbenzene	72	100	180	108		180	108		70-130	0		20
1,3,5-Trimethylbenzene	670	100	720	**50**	Q	710	**40**	Q	64-130	1		20
1,2,4-Trimethylbenzene	1700	100	1600	**0**	Q	1700	**0**	Q	70-130	6		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		110		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	95		97		70-130
Toluene-d8	102		102		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-01
Client ID: TG01-MW-01-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:00
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 03/03/23 14:48
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 03/02/23 08:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	26		ug/l	0.10	0.05	1
Fluorene	0.07	J	ug/l	0.10	0.01	1
Phenanthrene	0.08		ug/l	0.05	0.02	1
Anthracene	0.09	J	ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.07		ug/l	0.05	0.02	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**132**	Q	23-120
2-Fluorobiphenyl	87		15-120
4-Terphenyl-d14	105		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-02
Client ID: TG01-MW-03-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 03/03/23 16:11
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 03/02/23 08:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.7		ug/l	0.10	0.05	1
Fluorene	0.20		ug/l	0.10	0.01	1
Phenanthrene	0.56		ug/l	0.05	0.02	1
Anthracene	0.37		ug/l	0.10	0.01	1
Pyrene	0.34		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.12		ug/l	0.05	0.02	1
Chrysene	0.07	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.07		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.05	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.04	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.03	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	87		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-03
Client ID: TG01-MW-03-230227D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 03/03/23 16:27
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 03/02/23 08:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.4		ug/l	0.10	0.05	1
Fluorene	0.19		ug/l	0.10	0.01	1
Phenanthrene	0.47		ug/l	0.05	0.02	1
Anthracene	0.31		ug/l	0.10	0.01	1
Pyrene	0.30		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.13		ug/l	0.05	0.02	1
Chrysene	0.06	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.07		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.05	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.04	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.03	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	78		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-04
Client ID: TG01-MW-02-230227
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 11:25
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 03/03/23 16:44
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 03/02/23 08:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	4.6		ug/l	0.10	0.05	1
Fluorene	0.17		ug/l	0.10	0.01	1
Phenanthrene	0.22		ug/l	0.05	0.02	1
Anthracene	0.29		ug/l	0.10	0.01	1
Pyrene	0.58		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.23		ug/l	0.05	0.02	1
Chrysene	0.25		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.08		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.09	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.05	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.05	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	61		15-120
4-Terphenyl-d14	84		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-05
Client ID: FB-230227-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/27/23 12:00
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 03/03/23 17:01
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 03/02/23 08:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	104		23-120
2-Fluorobiphenyl	67		15-120
4-Terphenyl-d14	82		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 03/07/23 10:26
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 03/02/23 08:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05 Batch: WG1750258-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	0.01	J	ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	56		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05 Batch: WG1750258-2 WG1750258-3								
Naphthalene	72		72		40-140	0		40
Fluorene	80		74		40-140	8		40
Phenanthrene	83		77		40-140	8		40
Anthracene	85		78		40-140	9		40
Pyrene	102		93		26-127	9		40
Benzo(a)anthracene	89		83		40-140	7		40
Chrysene	86		78		40-140	10		40
Benzo(b)fluoranthene	94		82		40-140	14		40
Benzo(a)pyrene	92		85		40-140	8		40
Indeno(1,2,3-cd)pyrene	104		94		40-140	10		40
Benzo(ghi)perylene	96		86		40-140	11		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	119		111		23-120
2-Fluorobiphenyl	76		72		15-120
4-Terphenyl-d14	97		88		41-149

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2310384

Report Date: 03/07/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Client ID: TG01-MW-01-230227	Associated sample(s): 01-05		QC Batch ID: WG1750258-4			WG1750258-5			QC Sample: L2310384-01			
Naphthalene	26	18.2	36	55		36	55		40-140	0		40
Fluorene	0.07J	18.2	14	77		14	77		40-140	0		40
Phenanthrene	0.08	18.2	14	77		15	82		40-140	7		40
Anthracene	0.09J	18.2	14	77		15	83		40-140	7		40
Pyrene	ND	18.2	15	83		15	83		26-127	0		40
Benzo(a)anthracene	0.07	18.2	10	55		11	60		40-140	10		40
Chrysene	0.02J	18.2	11	61		12	66		40-140	9		40
Benzo(b)fluoranthene	0.02J	18.2	9.7	53		10	55		40-140	3		40
Benzo(a)pyrene	ND	18.2	9.7	53		11	61		40-140	13		40
Indeno(1,2,3-cd)pyrene	0.02J	18.2	12	66		12	66		40-140	0		40
Benzo(ghi)perylene	0.02J	18.2	10	55		11	61		40-140	10		40

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2-Fluorobiphenyl	74		76		15-120
4-Terphenyl-d14	86		88		41-149
Nitrobenzene-d5	**216**	Q	**216**	Q	23-120

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-01
Client ID: TG01-MW-01-230227
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/27/23 09:00
Date Received: 02/28/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	03/01/23 11:00	03/01/23 22:17	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2310384
Project Number: P044.001.002
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-02
Client ID: TG01-MW-03-230227
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.4222	J	ug/l	1.000	0.3430	1	03/01/23 11:00	03/02/23 00:17	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-03
Client ID: TG01-MW-03-230227D
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/27/23 09:30
Date Received: 02/28/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.4186	J	ug/l	1.000	0.3430	1	03/01/23 11:00	03/02/23 00:22	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-04
Client ID: TG01-MW-02-230227
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/27/23 11:25
Date Received: 02/28/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	03/01/23 11:00	03/02/23 00:27	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

SAMPLE RESULTS

Lab ID: L2310384-05
Client ID: FB-230227-2
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/27/23 12:00
Date Received: 02/28/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	03/01/23 11:00	03/01/23 23:47	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2310384
Report Date: 03/07/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1749823-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	03/01/23 11:00	03/01/23 21:43	1,6020B	NTB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2310384

Report Date: 03/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1749823-2								
Lead, Dissolved	98		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2310384
Report Date: 03/07/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1749823-3 WG1749823-4 QC Sample: L2310384-01 Client ID: TG01-MW-01-230227												
Lead, Dissolved	ND	530	286.9	**54**	Q	297.9	**56**	Q	75-125	4		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2310384
Report Date: 03/07/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2310384-01A	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01A1	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01A2	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01B	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01B1	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01B2	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01C	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01C1	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01C2	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-01D	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-01D1	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-01D2	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-01E	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-01E1	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-01E2	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-01F	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-01F1	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-01F2	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-01G	Amber 250ml unpreserved	A	12	12	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-01G1	Amber 250ml unpreserved	A	12	12	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-01G2	Amber 250ml unpreserved	A	12	12	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-01H	Amber 250ml unpreserved	A	12	12	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-01H1	Amber 250ml unpreserved	A	12	12	3.8	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2310384
Report Date: 03/07/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2310384-01H2	Amber 250ml unpreserved	A	12	12	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-02A	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-02B	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-02C	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-02D	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-02E	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-02F	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-02G	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-02H	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-03A	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-03B	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-03C	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-03D	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-03E	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-03F	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-03G	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-03H	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-04A	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-04B	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-04C	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-04D	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-04E	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-04F	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-04G	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-04H	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-05A	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-05B	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-05C	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2310384
Report Date: 03/07/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2310384-05D	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-05E	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-05F	Plastic 250ml HNO3 preserved	A	<2	<2	3.8	Y	Absent		PB-6020S-PPB(180)
L2310384-05G	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-05H	Amber 250ml unpreserved	A	7	7	3.8	Y	Absent		PA-PAHSIM-LVI(7)
L2310384-06A	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-06B	Vial HCl preserved	A	NA		3.8	Y	Absent		PA-8260(14)
L2310384-06C	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)
L2310384-06D	Vial Na2S2O3 preserved	A	NA		3.8	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2310384
Project Number:	P044.001.002	**Report Date:**	03/07/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2310384
Project Number:	P044.001.002	**Report Date:**	03/07/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2310384
Project Number:	P044.001.002	**Report Date:**	03/07/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2310384
Project Number:	P044.001.002	**Report Date:**	03/07/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

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Date Rec'd in Lab: 3/1/23

ALPHA Job #: L2310384

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 110, Princeton NJ 08540
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 Passyunk Ave.
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD @ terraphase.com
Equis EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not needed (lead field filtered)
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: VOCs - Short List 1-6	SVOCs - Short List 1-6	Lead	Sample Specific Comments	TOTAL # BOTTLES
10384-01	TG01-MW-01-230227	2/27/23	9:00	GW	KJO	X	X	X		
	TG01-MW-01-230227MS	2/27/23	9:00	GW	KJO	X	X	X		
	TG01-MW-01-230227MSD	2/27/23	9:00	GW	KJO	X	X	X		
02	TG01-MW-03-230227	2/27/23	9:30	GW	SMM	X	X	X		
03	TG01-MW-05-230227	2/27/23	9:30	GW	SMM	X	X	X		
04	TG01-MW-02-230227	2/27/23	11:25	GW	KJO	X	X	X		
05	FB-230227-2	2/27/23	12:00	FB	KJO	X	X	X		
06	TB-230227-2	2/27/23	12:10	TB	KJO	X				

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	2/28/23 0930	AAL	2-28-23 0930
Paul Mazzella	2-28-23 1230	Paul Mazzella	2/28/23 1645
Paul Mazzella	2/28/23		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 14-OCT-07)

- **Short List 1**. *Leaded Gasoline, Aviation Gasoline and Jet Fuel*: benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, and lead.
- **Short List 2**. *Unleaded Gasoline*: benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 3**. *Kerosene, Fuel Oil No. 1*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 4**. *Diesel Fuel and Fuel Oil No. 2*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethyl benzene, and 1,3,5-trimethyl benzene.
- **Short List 5**. *Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids*: benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene.
- **Short List 6**. *Waste Oil*: benzene, toluene, ethyl benzene, cumene, naphthalene (Method 8270), pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)pyrene, and lead.

Serial_No:03072317:07

Appendix H

Release Notifications

July 2, 2021

Mr. Ron Estel
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, PA 19401

sent via UPS – Delivery Confirmation

Subject: **Philadelphia Energy Solutions Refining and Marketing, LLC**
PADEP Notification of Release Form – Tank Group 1
PADEP Facility ID #51-33620 – Point Breeze Refinery
Incident No. 56446
3144 W. Passyunk Avenue
Philadelphia, PA 19141

Dear Mr. Estel:

Enclosed please find a copy of the Pennsylvania Department of Environmental Protection's (PADEP) Notification of Release Form for the Philadelphia Energy Solutions Refining and Marketing, LLC (PESRM) Point Breeze Refinery. The PADEP was notified via telephone on June 23, 2021 that Aboveground Storage Tank (AST) Site Assessment sampling, performed in Tank Group 1, identified constituents in soil at concentrations greater than the applicable PADEP Medium Specific Concentrations (MSCs). Specifically, concentrations greater than applicable MSCs were identified at the following ATSs: PB-668 (008A), PB-666 (043A), and PB-663 (074A).

Please contact me at kevin.long@terraphase.com / 609-236-8171 x93 or Nick Scala at nick.scala@terraphase.com / 609-236-8171 x92 with any questions.

Sincerely,

for Terraphase Engineering Inc.

Kevin Long
Principal Consultant

Nicholas Scala, PG, LSRP
Principal Geologist

KL/NS:cs

Enclosure: PAEP Notification of Release Form (Tank Group 01)

cc: Anne Garr (agarr@hilcoglobal.com)
Joseph Jeray (jjeray@hilcoglobal.com)
Stephanie Eggert (seggert@hilcoglobal.com)
Charles Barksdale (cbarksdale@hilcoglobal.com)
Gary Bowman (gbowman@NorthStar.com)
Bob Armstrong (rarmstrong@NorthStar.com)
Lisa Strobridge (PADEP)
Ralph DiPietro (Philadelphia L & I)

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33620

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:

PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	North-central Region	Northeast Region
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Point Breeze
Facility I.D. Number: 51-33620
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☐		☐ [S]	☐ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) Heavy/Light Gas Oil	☒	UNKNOWN	☐ [S]	☒ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 06 (m) / 23 (d) / 2021 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 06 (m) / 23 (d) / 2021 (y) Office: Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: ___ (m) / ___ (d) / ___ (y) Municipality: Philadelphia
Date: ___ (m) / ___ (d) / ___ (y) Municipality: ___

Source (Mark All That Apply ☒):

- Tank (DEP Assigned Nos. 008A, 043A, 074A) ☒
- Piping System (Aboveground Regulated) ☒
- Piping System (Underground Regulated) ☐
- Piping System (Non-Regulated) ☐
- Dispenser/Dispensing Equipment ☐
- Spill Prevention Equipment ☐
- Submersible Turbine Pump Head/Fittings ☐
- Containment/Sump Failure ☐
- Other (Specify) ☐
- Unknown ☐

Cause (Mark All That Apply ☒):

- Faulty Installation ☐
- Corrosion ☐
- Physical/Mechanical Failure ☐
- Spill During Delivery ☐
- Overfill at Delivery ☐
- Vehicle Gas Tank Overfill ☐
- Product Delivery Hose Rupture ☐
- Accident/Natural Disaster ☐
- Other (Specify) ☐
- Unknown ☐

How Discovered (Mark All That Apply ☒):

- During Closure ☒
- Lining Installation ☐
- Routine Leak Detection ☐
- Third Party Inspection ☐
- Tightness Testing Activities ☐
- Visible Product or Odor Reports ☐
- Water in Tank ☐
- Construction ☐
- Upgrade/Repair ☐
- Supply Well Sample Results ☐
- Monitoring Well Sample Results ☐
- Property Transfer ☐
- Other (Specify) Site Assessment Sampling ☒
- Unknown ☐

Environmental Media Affected and Impacts (Mark All That Apply ☒):

- Soil ☒
- Sediment ☐
- Surface Water ☐
- Ground Water ☐
- Bedrock ☐
- Water Supplies ☐
- Vapors/Product in Buildings ☐
- Vapors/Product in Sewer/Utility Lines ☐
- Ecological Receptors ☐

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☐	☐
Free Product Recovered	☐	☐	☐	☒
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 06 (m) / 23 (d) / 2021 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Site Assessment Sampling Results

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 06 (m) / 23 (d) / 2021 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☐ Ponded Product
- ☐ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Site Assessment Sampling Results

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. This notification is provided to PADEP to report that the Site Assessment sampling performed in Tank Group 01 has identified chemical concentrations in soil at levels above applicable Statewide Health Medium Specific Concentrations (MSCs).The following chemicals were detected in soil samples at concentrations greater than the applicable MSCs: benzene, toluene, 1,2,4-trimethylbenzene, benzo(a)pyrene, benzo(b)fluoranthene, naphthalene, and lead. Site characterization will be performed to understand the nature and extent of these concentrations above MSCs and to further assess whether these conditions actually reflect a release to the environment from these ASTs.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Anne Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Owner or Operator

07/ 01 / 2021
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number

Appendix I

Site Assessment and Site Characterization Soil and Groundwater Analytical Results

Table I1
Summary of BDH Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-663-01 PB-663-01-SS01 3.0 - 3.5 5/19/2021	PB-663-02 PB-663-02-SS01 3.0 - 3.5 5/19/2021	PB-663-03 PB-663-03-SS01 2.0 - 2.5 5/19/2021	PB-663-03 PB-663-03R-3.5-4.0 3.5 - 4.0 1/5/2023	PB-663-04 PB-663-04-SS01 3.0 - 3.5 5/19/2021	PB-663-05 PB-663-05-SS01 3.5 - 4.0 5/19/2021	PB-663-06 PB-663-06-SS01 2.5 - 3.0 5/19/2021	PB-663-07 PB-663-07-SS01 3.0 - 3.5 5/19/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.001)	0.1 (0.056)	0.27 (0.055)	ND (0.00078)	0.00048 J (0.00087)	ND (0.00083)	0.02 J (0.038)	ND (0.00067)
Cumene	10000	10000	2500	ND (0.002)	0.022 J (0.11)	0.014 J (0.11)	ND (0.0016)	ND (0.0017)	ND (0.0016)	ND (0.0016)	ND (0.0013)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.001)	ND (0.056)	ND (0.00064)	NA	ND (0.00087)	ND (0.00083)	ND (0.0008)	ND (0.00067)
1,2-Dichloroethane	85	98	0.5	ND (0.002)	ND (0.11)	ND (0.0013)	NA	ND (0.0017)	ND (0.0016)	ND (0.0016)	ND (0.0013)
Ethyl Benzene	880	1000	70	ND (0.002)	0.038 J (0.11)	0.034 J (0.11)	NA	ND (0.0017)	ND (0.0016)	0.018 J (0.077)	ND (0.0013)
Methyl tert-butyl ether	8500	9800	2	ND (0.004)	ND (0.22)	ND (0.0026)	ND (0.0031)	ND (0.0035)	ND (0.0033)	ND (0.0032)	ND (0.0027)
Toluene	10000	10000	100	0.0025 (0.002)	4.4 (0.11)	2.8 (0.11)	0.00085 J (0.0016)	0.0011 J (0.0017)	ND (0.0016)	1.9 (0.077)	ND (0.0013)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.004)	0.17 J (0.22)	0.097 J (0.22)	ND (0.0031)	ND (0.0035)	ND (0.0033)	0.063 J (0.15)	ND (0.0027)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.004)	0.092 J (0.22)	0.039 J (0.22)	ND (0.0031)	ND (0.0035)	ND (0.0033)	0.017 J (0.15)	ND (0.0027)
Xylenes (total)	7900	9100	1000	ND (0.004)	0.268 J (0.22)	0.143 J (0.22)	ND (0.0031)	ND (0.0035)	ND (0.0033)	0.087 J (0.15)	ND (0.0027)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	3.4 (0.19)	0.072 (0.02)	7.7 (0.48)	NA	0.059 (0.0097)	0.13 (0.02)	0.87 (0.081)	0.15 (0.035)
Benzo(a)anthracene	130	190000	340	9 (0.19)	0.7 (0.02)	22 (0.48)	NA	0.045 (0.0097)	0.42 (0.02)	5.3 (0.081)	0.19 (0.035)
Benzo(a)pyrene	91	190000	46	7.8 (0.19)	0.67 (0.02)	18 (0.48)	0.38 (0.22)	0.1 (0.0097)	0.57 (0.02)	4.8 (0.081)	0.12 (0.035)
Benzo(b)fluoranthene	76	190000	170	10 (0.19)	0.98 (0.02)	23 (0.48)	NA	0.13 (0.0097)	0.79 (0.02)	6.6 (0.081)	0.21 (0.035)
Benzo(g,h,i)perylene	190000	190000	180	4.8 (0.19)	0.47 (0.02)	10 (0.48)	NA	0.12 (0.0097)	0.53 (0.02)	3 (0.081)	0.17 (0.035)
Chrysene	760	190000	230	7 (0.19)	0.62 (0.02)	18 (0.48)	NA	0.043 (0.0097)	0.36 (0.02)	4.3 (0.081)	0.19 (0.035)
Fluorene	130000	190000	3800	1.3 (0.19)	0.0096 J (0.02)	3.3 (0.48)	NA	0.05 (0.0097)	0.014 J (0.02)	0.17 (0.081)	0.0042 J (0.035)
Naphthalene	66	77	25	1.2 (0.19)	0.1 (0.02)	0.92 (0.48)	ND (0.055)	0.23 (0.0097)	0.052 (0.02)	0.22 (0.081)	0.014 J (0.035)
Phenanthrene	190000	190000	10000	13 (0.19)	0.35 (0.02)	30 (0.48)	NA	0.062 (0.0097)	0.91 (0.02)	3 (0.081)	0.49 (0.035)
Pyrene	96000	190000	2200	14 (0.19)	0.81 (0.02)	33 (0.48)	NA	0.034 (0.0097)	0.56 (0.02)	6.4 (0.081)	0.37 (0.035)
Metals											
Lead	1000	190000	450	1470 (2.84)	7180 (15.1)	3380 (2.79)	1150 (3.16)	461 (2.78)	23.1 (3.04)	27.7 (2.45)	1420 (2.05)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table I1
Summary of BDH Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-663-08 PB-663-08-SS01 3.0 - 3.5 5/20/2021	PB-663-08 DUP-02 3.0 - 3.5 5/20/2021 Field Duplicate	PB-663-09 PB-663-09-SS01 3.0 - 3.5 5/20/2021	PB-663-10 PB-663-10-SS01 3.0 - 3.5 5/20/2021	PB-663-11 PB-663-11-SS01 1.5 - 2.0 5/18/2021	PB-663-11 PB-663-11R-6.0-6.5 6.0 - 6.5 1/5/2023	PB-663-12 PB-663-12-SS01 3.0 - 3.5 5/20/2021	PB-663-13 PB-663-13-SS01 3.0 - 3.5 5/20/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.00072)	ND (0.0008)	ND (0.00089)	ND (0.0008)	0.00063 (0.00063)	ND (0.0011)	ND (0.00092)	ND (0.0005)
Cumene	10000	10000	2500	ND (0.0014)	ND (0.0016)	ND (0.0018)	ND (0.0016)	0.0011 J (0.0013)	ND (0.0022)	ND (0.0018)	ND (0.001)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.00072)	ND (0.0008)	ND (0.00089)	ND (0.0008)	ND (0.00063)	NA	ND (0.00092)	ND (0.0005)
1,2-Dichloroethane	85	98	0.5	ND (0.0014)	ND (0.0016)	ND (0.0018)	ND (0.0016)	ND (0.0013)	NA	ND (0.0018)	ND (0.001)
Ethyl Benzene	880	1000	70	ND (0.0014)	ND (0.0016)	ND (0.0018)	ND (0.0016)	0.0033 (0.0013)	NA	ND (0.0018)	ND (0.001)
Methyl tert-butyl ether	8500	9800	2	ND (0.0029)	ND (0.0032)	ND (0.0036)	ND (0.0032)	ND (0.0025)	ND (0.0044)	ND (0.0037)	ND (0.002)
Toluene	10000	10000	100	ND (0.0014)	ND (0.0016)	ND (0.0018)	ND (0.0016)	0.0062 (0.0013)	ND (0.0022)	ND (0.0018)	ND (0.001)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0029)	ND (0.0032)	ND (0.0036)	ND (0.0032)	0.035 (0.0025)	ND (0.0044)	ND (0.0037)	ND (0.002)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0029)	ND (0.0032)	ND (0.0036)	ND (0.0032)	0.011 (0.0025)	ND (0.0044)	ND (0.0037)	ND (0.002)
Xylenes (total)	7900	9100	1000	ND (0.0029)	ND (0.0032)	ND (0.0036)	ND (0.0032)	0.031 J (0.0025)	ND (0.0044)	ND (0.0037)	ND (0.002)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	0.32 (0.036)	0.034 (0.0088)	0.85 (0.072)	0.17 (0.016)	28 (1.8)	NA	0.032 (0.01)	0.0078 (0.0077)
Benzo(a)anthracene	130	190000	340	1.2 (0.036)	0.15 (0.0088)	0.34 (0.072)	0.11 (0.016)	57 (1.8)	NA	0.022 (0.01)	0.055 (0.0077)
Benzo(a)pyrene	91	190000	46	0.96 (0.036)	0.11 (0.0088)	0.37 (0.072)	0.096 (0.016)	46 (1.8)	ND (0.54)	0.017 (0.01)	0.024 (0.0077)
Benzo(b)fluoranthene	76	190000	170	1.3 (0.036)	0.14 (0.0088)	0.56 (0.072)	0.13 (0.016)	55 (1.8)	NA	0.024 (0.01)	0.04 (0.0077)
Benzo(g,h,i)perylene	190000	190000	180	0.59 (0.036)	0.062 (0.0088)	0.38 (0.072)	0.079 (0.016)	25 (1.8)	NA	0.013 (0.01)	0.0084 (0.0077)
Chrysene	760	190000	230	0.84 (0.036)	0.11 (0.0088)	0.32 (0.072)	0.087 (0.016)	46 (1.8)	NA	0.016 (0.01)	0.038 (0.0077)
Fluorene	130000	190000	3800	0.082 (0.036)	0.0066 J (0.0088)	0.1 (0.072)	0.27 (0.016)	11 (1.8)	NA	0.037 (0.01)	0.0018 J (0.0077)
Naphthalene	66	77	25	0.089 (0.036)	0.0055 J (0.0088)	0.014 J (0.072)	0.098 (0.016)	6.1 (1.8)	ND (0.13)	0.014 (0.01)	0.0019 J (0.0077)
Phenanthrene	190000	190000	10000	1.1 (0.036)	0.15 (0.0088)	2.4 (0.072)	1 (0.016)	100 (1.8)	NA	0.14 (0.01)	0.015 (0.0077)
Pyrene	96000	190000	2200	1.5 (0.036)	0.22 (0.0088)	2.4 (0.072)	0.4 (0.016)	87 (1.8)	NA	0.067 (0.01)	0.053 (0.0077)
Metals											
Lead	1000	190000	450	28.7 (2.13)	54.9 (2.63)	2010 (2.16)	3420 (2.27)	1010 (2.64)	60.8 (2.76)	2430 (2.97)	73.6 (2.27)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
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Table I1
Summary of BDH Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-663-14 PB-663-14-SS01 1.0 - 1.5 5/20/2021	PB-663-15 PB-663-15-0.0-0.5 0.0 - 0.5 11/30/2021	PB-663-15 PB-663-15-3.0-3.5 3.0 - 3.5 11/30/2021	PB-663-15 PB-663-15-6.0-6.5 6.0 - 6.5 11/30/2021	PB-663-15 PB-663-15-14.5-15.0 14.5 - 15.0 1/17/2022	PB-663-16 PB-663-16-0.0-0.5 0.0 - 0.5 12/1/2021	PB-663-16 PB-663-16-3.0-3.5 3.0 - 3.5 12/1/2021	PB-663-16 PB-663-16-6.0-6.5 6.0 - 6.5 12/1/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	0.028 (0.0011)	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	10000	2500	0.0026 (0.0022)	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.0011)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	98	0.5	ND (0.0022)	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	0.016 (0.0022)	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.0044)	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	10000	100	0.071 (0.0022)	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	5400	300	0.014 (0.0044)	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	0.0043 J (0.0044)	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	9100	1000	0.072 J (0.0044)	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	6.2 (0.48)	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	14 (0.48)	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	18 (0.48)	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	190000	170	19 (0.48)	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	12 (0.48)	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	11 (0.48)	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	2.6 (0.48)	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	1.1 (0.48)	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	190000	10000	19 (0.48)	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	24 (0.48)	NA	NA	NA	NA	NA	NA	NA
Metals											
Lead	1000	190000	450	34.4 (2.74)	785 (2.55)	834 (2.46)	1060 (2.4)	50.6 (3.35)	621 (3.02)	234 (2.53)	87.1 (2.71)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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J - Estimated Concentration

Table I1
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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-663-17 PB-663-17-0.0-0.5 0.0 - 0.5 12/1/2021	PB-663-17 PB-663-17-6.0-6.5 6.0 - 6.5 12/1/2021	PB-666-01 PB-666-01-SS01 3.5 - 4.0 5/18/2021	PB-666-02 PB-666-02-SS01 2.0 - 2.5 5/18/2021	PB-666-03 PB-666-03-SS01 1.0 - 1.5 5/18/2021	PB-666-04 PB-666-04-SS01 1.5 - 2.0 5/18/2021	PB-666-05 PB-666-05-SS01 3.0 - 3.5 1/17/2022	PB-666-06 PB-666-06-SS01 3.5 - 4.0 5/19/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	NA	NA	ND (0.00047)	ND (0.00053)	ND (0.0009)	0.015 J (0.025)	ND (0.0007)	ND (0.00077)
Cumene	10000	10000	2500	NA	NA	ND (0.00095)	ND (0.0011)	ND (0.0018)	0.024 J (0.05)	ND (0.0014)	ND (0.0015)
1,2-Dibromoethane	3.7	4.2	0.005	NA	NA	ND (0.00047)	ND (0.00053)	ND (0.0009)	ND (0.00061)	ND (0.0007)	ND (0.00077)
1,2-Dichloroethane	85	98	0.5	NA	NA	ND (0.00095)	ND (0.0011)	ND (0.0018)	ND (0.0012)	ND (0.0014)	ND (0.0015)
Ethyl Benzene	880	1000	70	NA	NA	ND (0.00095)	ND (0.0011)	ND (0.0018)	0.052 (0.05)	ND (0.0014)	ND (0.0015)
Methyl tert-butyl ether	8500	9800	2	NA	NA	ND (0.0019)	ND (0.0021)	ND (0.0036)	ND (0.0024)	ND (0.0028)	ND (0.0031)
Toluene	10000	10000	100	NA	NA	ND (0.00095)	ND (0.0011)	ND (0.0018)	0.057 (0.05)	ND (0.0014)	ND (0.0015)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	ND (0.0019)	ND (0.0021)	ND (0.0036)	1.3 (0.1)	0.0011 J (0.0028)	ND (0.0031)
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	ND (0.0019)	ND (0.0021)	ND (0.0036)	0.61 (0.1)	0.00074 J (0.0028)	ND (0.0031)
Xylenes (total)	7900	9100	1000	NA	NA	ND (0.0019)	ND (0.0021)	ND (0.0036)	0.45 J (0.1)	ND (0.0028)	ND (0.0031)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	NA	NA	0.086 (0.038)	ND (0.3)	0.23 (0.025)	ND (0.073)	ND (0.39)	7.5 (0.57)
Benzo(a)anthracene	130	190000	340	NA	NA	0.36 (0.038)	1 (0.3)	1.5 (0.025)	0.17 (0.073)	0.4 (0.39)	34 (0.57)
Benzo(a)pyrene	91	190000	46	NA	NA	0.3 (0.038)	1 (0.3)	1.4 (0.025)	0.33 (0.073)	0.35 J (0.52)	36 (0.57)
Benzo(b)fluoranthene	76	190000	170	NA	NA	0.4 (0.038)	1.4 (0.3)	1.8 (0.025)	0.23 (0.073)	0.4 (0.39)	47 (0.57)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	0.13 (0.038)	2.8 (0.3)	0.72 (0.025)	7.2 (0.073)	0.21 J (0.52)	29 (0.57)
Chrysene	760	190000	230	NA	NA	0.25 (0.038)	0.74 (0.3)	1.2 (0.025)	0.12 (0.073)	0.22 J (0.39)	27 (0.57)
Fluorene	130000	190000	3800	NA	NA	0.025 J (0.038)	0.05 J (0.3)	0.048 (0.025)	0.02 J (0.073)	ND (0.64)	1.2 (0.57)
Naphthalene	66	77	25	NA	NA	0.025 J (0.038)	ND (0.3)	0.26 (0.025)	0.12 (0.073)	ND (0.64)	0.55 J (0.57)
Phenanthrene	190000	190000	10000	NA	NA	0.29 (0.038)	0.6 (0.3)	1 (0.025)	0.19 (0.073)	0.099 J (0.39)	22 (0.57)
Pyrene	96000	190000	2200	NA	NA	0.48 (0.038)	0.95 (0.3)	1.9 (0.025)	0.17 (0.073)	0.55 (0.39)	39 (0.57)
Metals											
Lead	1000	190000	450	508 (2.92)	156 (2.79)	653 (2.22)	910 (2.18)	8660 (7.1)	4310 (4.34)	54.8 (2.53)	2200 (3.49)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-666-07 PB-666-07-SS01 3.5 - 4.0 5/18/2021	PB-666-08 PB-666-08-SS01 4.5 - 5.0 1/17/2022	PB-666-09 PB-666-09-SS01 3.0 - 3.5 1/17/2022	PB-666-10 PB-666-10-SS01 3.0 - 3.5 1/17/2022	PB-666-11 PB-666-11R-0.0-0.5 0.0 - 0.5 11/29/2021	PB-666-11 PB-666-11-SS01 3.5 - 4.0 5/18/2021	PB-666-11 PB-666-11R-6.0-6.5 6.0 - 6.5 11/29/2021	PB-666-12 PB-666-12R-0.0-0.5 0.0 - 0.5 11/29/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.058)	ND (0.0008)	0.002 (0.00074)	0.0017 (0.00092)	0.0013 (0.00078)	3.6 (0.058)	0.00088 (0.00065)	NA
Cumene	10000	10000	2500	0.15 (0.12)	0.00058 J (0.0016)	0.0002 J (0.0015)	0.00051 J (0.0018)	ND (0.0016)	7.1 (0.12)	ND (0.0013)	NA
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.058)	ND (0.0008)	ND (0.00074)	ND (0.00092)	NA	ND (0.058)	NA	NA
1,2-Dichloroethane	85	98	0.5	ND (0.12)	ND (0.0016)	ND (0.0015)	ND (0.0018)	NA	ND (0.12)	NA	NA
Ethyl Benzene	880	1000	70	0.041 J (0.12)	0.00083 J (0.0016)	ND (0.0015)	ND (0.0018)	NA	0.28 (0.12)	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.23)	ND (0.0032)	ND (0.0029)	ND (0.0037)	ND (0.0031)	ND (0.23)	ND (0.0026)	NA
Toluene	10000	10000	100	ND (0.12)	0.0051 (0.0016)	ND (0.0015)	0.0038 (0.0018)	ND (0.0016)	0.095 J (0.12)	ND (0.0013)	NA
1,2,4-Trimethylbenzene	4700	5400	300	6.4 (0.23)	0.0065 (0.0032)	0.00089 J (0.0029)	ND (0.0037)	ND (0.0031)	0.22 J (0.23)	ND (0.0026)	NA
1,3,5-Trimethylbenzene	4700	5400	93	5.5 (0.23)	0.0043 (0.0032)	0.00044 J (0.0029)	ND (0.0037)	ND (0.0031)	0.061 J (0.23)	ND (0.0026)	NA
Xylenes (total)	7900	9100	1000	0.77 J (0.23)	0.0097 J (0.0032)	0.00173 J (0.0029)	ND (0.0037)	ND (0.0031)	0.368 J (0.23)	ND (0.0026)	NA
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	ND (0.048)	ND (0.43)	ND (0.14)	ND (0.4)	NA	41 (4.2)	NA	NA
Benzo(a)anthracene	130	190000	340	0.0098 J (0.048)	ND (0.43)	ND (0.14)	ND (0.4)	NA	130 (4.2)	NA	NA
Benzo(a)pyrene	91	190000	46	0.006 J (0.048)	ND (0.57)	ND (0.18)	ND (0.53)	34 (0.8)	140 (4.2)	12 (5.2)	20 (0.93)
Benzo(b)fluoranthene	76	190000	170	0.0091 J (0.048)	ND (0.43)	ND (0.14)	ND (0.4)	57 (1.2)	170 (4.2)	18 (3.9)	31 (0.7)
Benzo(g,h,i)perylene	190000	190000	180	0.12 (0.048)	ND (0.57)	ND (0.18)	ND (0.53)	NA	84 (4.2)	NA	NA
Chrysene	760	190000	230	0.018 J (0.048)	ND (0.43)	ND (0.14)	ND (0.4)	NA	110 (4.2)	NA	NA
Fluorene	130000	190000	3800	ND (0.048)	ND (0.71)	ND (0.23)	ND (0.66)	NA	18 (4.2)	NA	NA
Naphthalene	66	77	25	0.4 (0.048)	ND (0.71)	ND (0.23)	ND (0.66)	1.1 (1)	1.4 J (4.2)	1.2 J (6.6)	0.84 J (1.2)
Phenanthrene	190000	190000	10000	0.54 (0.048)	ND (0.43)	ND (0.14)	ND (0.4)	NA	72 (4.2)	NA	NA
Pyrene	96000	190000	2200	0.066 (0.048)	ND (0.43)	ND (0.14)	ND (0.4)	NA	180 (4.2)	NA	NA
Metals											
Lead	1000	190000	450	49.7 (2.88)	258 (2.83)	9.66 (2.69)	9.14 (2.71)	NA	253 (2.49)	NA	2460 (2.68)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-666-12 PB-666-12-SS01 2.5 - 3.0 5/18/2021	PB-666-12 PB-666-12R-6.0-6.5 6.0 - 6.5 11/29/2021	PB-666-12 TG01-MW-03-7.5-8.0 7.5 - 8.0 1/5/2023	PB-666-12 TG01-MW-03-8.5-9.0 8.5 - 9.0 1/5/2023	PB-666-13 PB-666-13-SS01 4.5 - 5.0 1/17/2022	PB-666-14 PB-666-14-SS01 4.0 - 4.5 5/18/2021	PB-666-15 PB-666-15-SS01 3.5 - 4.0 5/18/2021	PB-666-15 PB-666-15R-5.5-6.0 5.5 - 6.0 1/5/2023
Volatile Organic Compounds											
Benzene	280	330	0.5	0.45 (0.061)	NA	0.12 (0.053)	NA	0.0034 (0.0009)	0.0013 (0.00059)	ND (0.00048)	ND (0.00057)
Cumene	10000	10000	2500	1.2 (0.12)	NA	1.4 (0.1)	NA	0.0015 J (0.0018)	0.0011 J (0.0012)	ND (0.00096)	ND (0.0011)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.061)	NA	NA	NA	ND (0.0009)	ND (0.00059)	ND (0.00048)	NA
1,2-Dichloroethane	85	98	0.5	ND (0.12)	NA	NA	NA	ND (0.0018)	ND (0.0012)	ND (0.00096)	NA
Ethyl Benzene	880	1000	70	2 (0.12)	NA	NA	NA	ND (0.0018)	0.02 (0.0012)	ND (0.00096)	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.24)	NA	ND (0.21)	NA	ND (0.0036)	ND (0.0023)	ND (0.0019)	ND (0.0023)
Toluene	10000	10000	100	2.6 (0.12)	NA	ND (0.1)	NA	ND (0.0018)	0.0023 (0.0012)	ND (0.00096)	ND (0.0011)
1,2,4-Trimethylbenzene	4700	5400	300	20 (0.24)	NA	0.48 (0.21)	NA	ND (0.0036)	0.0011 J (0.0023)	ND (0.0019)	ND (0.0023)
1,3,5-Trimethylbenzene	4700	5400	93	11 (0.24)	NA	0.26 (0.21)	NA	ND (0.0036)	0.00048 J (0.0023)	ND (0.0019)	ND (0.0023)
Xylenes (total)	7900	9100	1000	24.1 J (0.24)	NA	0.175 J (0.21)	NA	ND (0.0036)	0.09 J (0.0023)	ND (0.0019)	ND (0.0023)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	74 (4.8)	NA	NA	NA	ND (0.41)	7.9 (0.42)	0.81 J (5)	NA
Benzo(a)anthracene	130	190000	340	110 (4.8)	NA	NA	NA	0.3 J (0.41)	19 (0.42)	15 (5)	NA
Benzo(a)pyrene	91	190000	46	90 (4.8)	0.25 (0.18)	0.17 J (0.2)	NA	0.57 (0.55)	16 (0.42)	38 (5)	4.6 (0.16)
Benzo(b)fluoranthene	76	190000	170	120 (4.8)	0.32 (0.13)	NA	NA	0.91 (0.41)	20 (0.42)	18 (5)	NA
Benzo(g,h,i)perylene	190000	190000	180	50 (4.8)	NA	NA	NA	1.3 (0.55)	8.1 (0.42)	19 (5)	NA
Chrysene	760	190000	230	86 (4.8)	NA	NA	NA	0.28 J (0.41)	15 (0.42)	53 (5)	NA
Fluorene	130000	190000	3800	53 (4.8)	NA	NA	NA	ND (0.69)	3.1 (0.42)	ND (5)	NA
Naphthalene	66	77	25	160 (4.8)	0.054 J (0.22)	1.7 (0.049)	0.051 (0.047)	ND (0.69)	1.4 (0.42)	1.8 J (5)	0.32 (0.041)
Phenanthrene	190000	190000	10000	270 (4.8)	NA	NA	NA	ND (0.41)	30 (0.42)	1.2 J (5)	NA
Pyrene	96000	190000	2200	190 (4.8)	NA	NA	NA	0.52 (0.41)	28 (0.42)	47 (5)	NA
Metals											
Lead	1000	190000	450	6170 (5.64)	307 (2.69)	38.3 (2.84)	NA	176 (2.75)	103 (2.42)	784 (2.5)	11000 (12)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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J - Estimated Concentration

Table I1
Summary of BDH Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-666-16 PB-666-16-SS01 3.0 - 3.5 5/18/2021	PB-666-17 PB-666-17-SS01 3.5 - 4.0 5/18/2021	PB-666-18 PB-666-18-SS01 3.0 - 3.5 5/18/2021	PB-666-19 PB-666-19-SS01 3.0 - 3.5 5/18/2021	PB-666-20 PB-666-20R-0.0-0.5 0.0 - 0.5 12/1/2021	PB-666-20 PB-666-20-SS01 3.5 - 4.0 5/18/2021	PB-666-20 PB-666-20R-6.0-6.5 6.0 - 6.5 12/1/2021	PB-666-21 PB-666-21R-0.0-0.5 0.0 - 0.5 12/1/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.00056)	ND (0.00073)	0.00037 J (0.00077)	ND (0.00067)	ND (0.00089)	5.8 (0.15)	ND (0.00084)	NA
Cumene	10000	10000	2500	ND (0.0011)	ND (0.0014)	ND (0.0015)	ND (0.0013)	ND (0.0018)	0.81 (0.3)	ND (0.0017)	NA
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.00056)	ND (0.00073)	ND (0.00077)	ND (0.00067)	NA	ND (0.15)	NA	NA
1,2-Dichloroethane	85	98	0.5	ND (0.0011)	ND (0.0014)	ND (0.0015)	ND (0.0013)	NA	ND (0.3)	NA	NA
Ethyl Benzene	880	1000	70	ND (0.0011)	ND (0.0014)	ND (0.0015)	ND (0.0013)	NA	1.9 (0.3)	NA	NA
Methyl tert-butyl ether	8500	9800	2	ND (0.0022)	ND (0.0029)	ND (0.0031)	ND (0.0027)	ND (0.0036)	ND (0.61)	ND (0.0034)	NA
Toluene	10000	10000	100	ND (0.0011)	ND (0.0014)	ND (0.0015)	0.0013 (0.0013)	0.0043 (0.0018)	1500 (12)	0.0062 (0.0017)	NA
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0022)	ND (0.0029)	ND (0.0031)	ND (0.0027)	ND (0.0036)	6.6 (0.61)	ND (0.0034)	NA
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0022)	ND (0.0029)	ND (0.0031)	ND (0.0027)	ND (0.0036)	3.5 (0.61)	ND (0.0034)	NA
Xylenes (total)	7900	9100	1000	ND (0.0022)	ND (0.0029)	ND (0.0031)	ND (0.0027)	ND (0.0036)	12.3 J (0.61)	ND (0.0034)	NA
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	4.6 (0.4)	0.089 (0.019)	0.0085 (0.0083)	0.0095 (0.0093)	NA	0.015 (0.0093)	NA	NA
Benzo(a)anthracene	130	190000	340	18 (0.4)	0.28 (0.019)	0.035 (0.0083)	0.036 (0.0093)	NA	0.018 (0.0093)	NA	NA
Benzo(a)pyrene	91	190000	46	15 (0.4)	0.24 (0.019)	0.029 (0.0083)	0.043 (0.0093)	NA	0.013 (0.0093)	NA	NA
Benzo(b)fluoranthene	76	190000	170	20 (0.4)	0.32 (0.019)	0.031 (0.0083)	0.068 (0.0093)	NA	0.017 (0.0093)	NA	NA
Benzo(g,h,i)perylene	190000	190000	180	8.6 (0.4)	0.12 (0.019)	0.016 (0.0083)	0.047 (0.0093)	NA	ND (0.0093)	NA	NA
Chrysene	760	190000	230	14 (0.4)	0.21 (0.019)	0.045 (0.0083)	0.036 (0.0093)	NA	0.012 (0.0093)	NA	NA
Fluorene	130000	190000	3800	1.3 (0.4)	0.022 (0.019)	0.0032 J (0.0083)	0.002 J (0.0093)	NA	ND (0.0093)	NA	NA
Naphthalene	66	77	25	1.8 (0.4)	0.021 (0.019)	0.0022 J (0.0083)	0.0098 (0.0093)	ND (0.0071)	0.034 (0.0093)	ND (0.0067)	NA
Phenanthrene	190000	190000	10000	17 (0.4)	0.3 (0.019)	0.031 (0.0083)	0.026 (0.0093)	NA	0.051 (0.0093)	NA	NA
Pyrene	96000	190000	2200	25 (0.4)	0.4 (0.019)	0.046 (0.0083)	0.04 (0.0093)	NA	0.027 (0.0093)	NA	NA
Metals											
Lead	1000	190000	450	5200 (4.75)	456 (2.85)	375 (2.45)	60.3 (2.8)	NA	105 (2.7)	NA	3340 (2.38)

Notes:
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3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-666-21 PB-666-21-SS01 4.5 - 5.0 5/18/2021	PB-666-21 DUP-01 4.5 - 5.0 5/18/2021 Field Duplicate	PB-666-21 PB-666-21R-6.0-6.5 6.0 - 6.5 12/1/2021	PB-666-21 PB-666-21R-14.5-15.0 14.5 - 15.0 12/1/2021	PB-666-22 PB-666-22-SS01 4.5 - 5.0 5/18/2021	PB-666-23 PB-666-23-SS01 4.5 - 5.0 5/19/2021	PB-666-24 PB-666-24-SS01 3.5 - 4.0 5/19/2021	PB-666-25 PB-666-25-SS01 3.0 - 3.5 5/19/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	0.067 J (0.088)	ND (0.00065)	NA	NA	ND (0.0013)	ND (0.00087)	0.0064 (0.0006)	ND (0.00053)
Cumene	10000	10000	2500	ND (0.18)	ND (0.0013)	NA	NA	0.0039 (0.0026)	ND (0.0017)	0.003 (0.0012)	ND (0.0011)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.088)	ND (0.00065)	NA	NA	ND (0.0013)	ND (0.00087)	ND (0.0006)	ND (0.00053)
1,2-Dichloroethane	85	98	0.5	ND (0.18)	ND (0.0013)	NA	NA	ND (0.0026)	ND (0.0017)	ND (0.0012)	ND (0.0011)
Ethyl Benzene	880	1000	70	0.048 J (0.18)	ND (0.0013)	NA	NA	0.00056 J (0.0026)	ND (0.0017)	0.025 (0.0012)	ND (0.0011)
Methyl tert-butyl ether	8500	9800	2	ND (0.35)	ND (0.0026)	NA	NA	ND (0.0053)	ND (0.0035)	ND (0.0024)	ND (0.0021)
Toluene	10000	10000	100	0.1 J (0.18)	0.003 (0.0013)	NA	NA	ND (0.0026)	ND (0.0017)	0.0032 (0.0012)	ND (0.0011)
1,2,4-Trimethylbenzene	4700	5400	300	0.088 J (0.35)	ND (0.0026)	NA	NA	0.0014 J (0.0053)	ND (0.0035)	0.091 (0.0024)	ND (0.0021)
1,3,5-Trimethylbenzene	4700	5400	93	0.044 J (0.35)	ND (0.0026)	NA	NA	ND (0.0053)	ND (0.0035)	0.019 (0.0024)	ND (0.0021)
Xylenes (total)	7900	9100	1000	0.19 J (0.35)	ND (0.0026)	NA	NA	ND (0.0053)	ND (0.0035)	0.027 J (0.0024)	ND (0.0021)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	0.0034 J (0.012)	0.057 (0.0086)	NA	NA	ND (0.06)	0.0046 J (0.0099)	1.5 (0.2)	0.056 (0.0076)
Benzo(a)anthracene	130	190000	340	0.031 (0.012)	0.13 (0.0086)	NA	NA	0.59 (0.06)	0.017 (0.0099)	2.3 (0.2)	0.27 (0.0076)
Benzo(a)pyrene	91	190000	46	0.037 (0.012)	0.11 (0.0086)	NA	NA	0.31 (0.06)	0.013 (0.0099)	1.6 (0.2)	0.26 (0.0076)
Benzo(b)fluoranthene	76	190000	170	0.061 (0.012)	0.15 (0.0086)	NA	NA	0.17 (0.06)	0.014 (0.0099)	0.85 (0.2)	0.31 (0.0076)
Benzo(g,h,i)perylene	190000	190000	180	0.032 (0.012)	0.054 (0.0086)	NA	NA	0.11 (0.06)	0.0074 J (0.0099)	0.61 (0.2)	0.16 (0.0076)
Chrysene	760	190000	230	0.029 (0.012)	0.089 (0.0086)	NA	NA	0.99 (0.06)	0.013 (0.0099)	3.3 (0.2)	0.24 (0.0076)
Fluorene	130000	190000	3800	ND (0.012)	0.037 (0.0086)	NA	NA	2.5 (0.06)	0.0046 J (0.0099)	2.9 (0.2)	0.029 (0.0076)
Naphthalene	66	77	25	0.0034 J (0.012)	0.039 (0.0086)	NA	NA	ND (0.06)	0.019 (0.0099)	5.7 (0.2)	0.07 (0.0076)
Phenanthrene	190000	190000	10000	0.0063 J (0.012)	0.13 (0.0086)	NA	NA	1.6 (0.06)	0.024 (0.0099)	8 (0.2)	0.2 (0.0076)
Pyrene	96000	190000	2200	0.023 (0.012)	0.15 (0.0086)	NA	NA	1.8 (0.06)	0.017 (0.0099)	4.5 (0.2)	0.36 (0.0076)
Metals											
Lead	1000	190000	450	16800 (18.2)	12100 (12.8)	8990 (9.01)	19.3 (11.8)	89 (3.65)	66.3 (2.88)	385 (2.3)	205 (2.31)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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Table I1
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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-666-26 PB-666-26-0.0-0.5 0.0 - 0.5 11/30/2021	PB-666-26 PB-666-26-3.5-4.0 3.5 - 4.0 11/30/2021	PB-666-26 PB-666-26-6.0-6.5 6.0 - 6.5 11/30/2021	PB-666-27 PB-666-27-0.0-0.5 0.0 - 0.5 11/30/2021	PB-666-27 PB-666-27-3.5-4.0 3.5 - 4.0 11/30/2021	PB-666-27 PB-666-27-6.0-6.5 6.0 - 6.5 11/30/2021	PB-666-28 PB-666-28-0.0-0.5 0.0 - 0.5 11/30/2021	PB-666-28 PB-666-28-2.5-3.0 2.5 - 3.0 11/30/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	NA	NA	NA	0.00045 J (0.00085)	0.0016 IS (0.00075)	0.0039 IS (0.0012)	NA	NA
Cumene	10000	10000	2500	NA	NA	NA	0.00067 J (0.0017)	0.017 IS (0.0015)	0.026 IS (0.0024)	NA	NA
1,2-Dibromoethane	3.7	4.2	0.005	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	98	0.5	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	ND (0.0034)	ND,IS (0.003)	ND,IS (0.0049)	NA	NA
Toluene	10000	10000	100	NA	NA	NA	0.021 (0.0017)	0.3 IS (0.0015)	0.56 IS (0.0024)	NA	NA
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	0.015 (0.0034)	0.26 IS (0.003)	0.32 IS (0.0049)	NA	NA
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	0.0076 (0.0034)	0.1 IS (0.003)	0.13 IS (0.0049)	NA	NA
Xylenes (total)	7900	9100	1000	NA	NA	NA	0.0209 J (0.0034)	0.51 J (0.003)	0.7 J (0.0049)	NA	NA
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	190000	46	NA	NA	NA	ND (1.1)	0.36 J (0.4)	1.4 (0.4)	1 (0.2)	ND (0.2)
Benzo(b)fluoranthene	76	190000	170	NA	NA	NA	ND (0.86)	0.52 (0.3)	1.8 (0.3)	1.5 (0.15)	ND (0.15)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	190000	230	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	190000	3800	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	77	25	NA	NA	NA	ND (1.4)	0.081 J (0.49)	0.22 J (0.5)	0.16 J (0.26)	ND (0.26)
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	190000	2200	NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Lead	1000	190000	450	21.7 (2.65)	141 (2.76)	21.9 (2.86)	NA	NA	NA	392 (3.04)	25.5 (3.05)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-666-28 PB-666-28-6.0-6.5 6.0 - 6.5 11/30/2021	PB-666-29 PB-666-29-0.0-0.5 0.0 - 0.5 11/29/2021	PB-666-29 PB-666-29-3.5-4.0 3.5 - 4.0 11/29/2021	PB-666-29 PB-666-29-6.0-6.5 6.0 - 6.5 11/29/2021	PB-668-01 PB-668-01-SS01 3.0 - 3.5 5/19/2021	PB-668-02 PB-668-02-SS01 3.0 - 3.5 5/19/2021	PB-668-03 PB-668-03-SS01 1.5 - 2.0 5/19/2021	PB-668-04 PB-668-04-SS01 3.0 - 3.5 5/19/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	NA	ND (0.00078)	ND (0.00093)	ND (0.00079)	ND (0.00087)	ND (0.00074)	ND (0.001)	ND (0.00066)
Cumene	10000	10000	2500	NA	ND (0.0016)	ND (0.0019)	ND (0.0016)	ND (0.0017)	ND (0.0015)	0.00042 J (0.002)	ND (0.0013)
1,2-Dibromoethane	3.7	4.2	0.005	NA	NA	NA	NA	ND (0.00087)	ND (0.00074)	ND (0.001)	ND (0.00066)
1,2-Dichloroethane	85	98	0.5	NA	NA	NA	NA	ND (0.0017)	ND (0.0015)	ND (0.002)	ND (0.0013)
Ethyl Benzene	880	1000	70	NA	NA	NA	NA	ND (0.0017)	ND (0.0015)	0.00084 J (0.002)	ND (0.0013)
Methyl tert-butyl ether	8500	9800	2	NA	ND (0.0031)	ND (0.0037)	ND (0.0032)	ND (0.0035)	ND (0.003)	ND (0.0041)	ND (0.0026)
Toluene	10000	10000	100	NA	0.0014 J (0.0016)	ND (0.0019)	ND (0.0016)	ND (0.0017)	ND (0.0015)	ND (0.002)	ND (0.0013)
1,2,4-Trimethylbenzene	4700	5400	300	NA	ND (0.0031)	ND (0.0037)	ND (0.0032)	ND (0.0035)	0.012 (0.003)	0.0078 (0.0041)	ND (0.0026)
1,3,5-Trimethylbenzene	4700	5400	93	NA	ND (0.0031)	ND (0.0037)	ND (0.0032)	0.00045 J (0.0035)	0.006 (0.003)	0.012 (0.0041)	ND (0.0026)
Xylenes (total)	7900	9100	1000	NA	ND (0.0031)	ND (0.0037)	ND (0.0032)	ND (0.0035)	0.0035 J (0.003)	0.0082 J (0.0041)	ND (0.0026)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	NA	NA	NA	NA	0.0089 J (0.0095)	0.0077 J (0.012)	0.35 (0.2)	0.003 J (0.0074)
Benzo(a)anthracene	130	190000	340	NA	NA	NA	NA	0.0028 J (0.0095)	0.046 (0.012)	0.18 J (0.2)	0.01 (0.0074)
Benzo(a)pyrene	91	190000	46	ND (0.18)	0.37 (0.19)	1 (0.85)	ND (0.19)	0.0062 J (0.0095)	0.04 (0.012)	0.13 J (0.2)	0.011 (0.0074)
Benzo(b)fluoranthene	76	190000	170	ND (0.14)	0.45 (0.14)	1.4 (0.64)	0.051 J (0.14)	0.0073 J (0.0095)	0.055 (0.012)	0.14 J (0.2)	0.017 (0.0074)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	NA	0.0054 J (0.0095)	0.026 (0.012)	0.09 J (0.2)	0.013 (0.0074)
Chrysene	760	190000	230	NA	NA	NA	NA	0.0024 J (0.0095)	0.039 (0.012)	0.27 (0.2)	0.01 (0.0074)
Fluorene	130000	190000	3800	NA	NA	NA	NA	0.018 (0.0095)	0.0022 J (0.012)	0.58 (0.2)	0.0011 J (0.0074)
Naphthalene	66	77	25	ND (0.23)	ND (0.24)	ND (1.1)	ND (0.24)	0.026 (0.0095)	0.25 (0.012)	0.14 J (0.2)	0.012 (0.0074)
Phenanthrene	190000	190000	10000	NA	NA	NA	NA	0.045 (0.0095)	0.034 (0.012)	0.86 (0.2)	0.0096 (0.0074)
Pyrene	96000	190000	2200	NA	NA	NA	NA	0.02 (0.0095)	0.059 (0.012)	0.65 (0.2)	0.015 (0.0074)
Metals											
Lead	1000	190000	450	34.7 (2.73)	NA	NA	NA	26.9 (2.84)	1600 (3.75)	483 (2.8)	192 (2.22)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-668-05 PB-668-05-SS01 3.0 - 3.5 5/19/2021	PB-668-06 PB-668-06R-0.0-0.5 0.0 - 0.5 11/30/2021	PB-668-06 PB-668-06-SS01 2.5 - 3.0 5/19/2021	PB-668-06 PB-668-06R-6.0-6.5 6.0 - 6.5 11/30/2021	PB-668-06 TG01-MW-01-7.5-8.0 7.5 - 8.0 1/5/2023	PB-668-06 TG01-MW-01-7.5-8.0D 7.5 - 8.0 1/5/2023 Field Duplicate	PB-668-06 TG01-MW-01-8.0-8.5 8.0 - 8.5 1/5/2023	PB-668-07 PB-668-07-SS01 3.0 - 3.5 5/19/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.0011)	NA	0.36 (0.066)	NA	10 (0.05)	9.5 (0.049)	0.79 (0.1)	ND (0.0012)
Cumene	10000	10000	2500	ND (0.0022)	NA	1.5 (0.13)	NA	0.97 (0.1)	0.26 (0.098)	92 (1)	ND (0.0024)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.0011)	NA	ND (0.066)	NA	NA	NA	NA	ND (0.0012)
1,2-Dichloroethane	85	98	0.5	ND (0.0022)	NA	ND (0.13)	NA	NA	NA	NA	ND (0.0024)
Ethyl Benzene	880	1000	70	ND (0.0022)	NA	1.3 (0.13)	NA	NA	NA	NA	ND (0.0024)
Methyl tert-butyl ether	8500	9800	2	ND (0.0044)	NA	ND (0.26)	NA	ND (0.2)	ND (0.2)	ND (0.41)	ND (0.0048)
Toluene	10000	10000	100	ND (0.0022)	NA	2.7 (0.13)	NA	0.31 (0.1)	0.39 (0.098)	0.13 J (0.21)	ND (0.0024)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0044)	NA	38 (0.26)	NA	5.6 (0.2)	6 (0.2)	94 (2.1)	ND (0.0048)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0044)	NA	13 (0.26)	NA	1.4 (0.2)	1.4 (0.2)	40 (0.41)	ND (0.0048)
Xylenes (total)	7900	9100	1000	ND (0.0044)	NA	13 J (0.26)	NA	2.3 J (0.2)	2.7 J (0.2)	3.9 J (0.41)	ND (0.0048)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	ND (0.047)	NA	58 (3.9)	NA	NA	NA	NA	ND (0.048)
Benzo(a)anthracene	130	190000	340	0.0068 J (0.047)	NA	120 (3.9)	NA	NA	NA	NA	0.0051 J (0.048)
Benzo(a)pyrene	91	190000	46	ND (0.047)	0.94 (0.4)	76 (3.9)	ND (0.19)	NA	NA	NA	ND (0.048)
Benzo(b)fluoranthene	76	190000	170	0.0052 J (0.047)	1.3 (0.3)	120 (3.9)	0.043 J (0.14)	NA	NA	NA	ND (0.048)
Benzo(g,h,i)perylene	190000	190000	180	ND (0.047)	NA	48 (3.9)	NA	NA	NA	NA	ND (0.048)
Chrysene	760	190000	230	0.0045 J (0.047)	NA	90 (3.9)	NA	NA	NA	NA	ND (0.048)
Fluorene	130000	190000	3800	ND (0.047)	NA	25 (3.9)	NA	NA	NA	NA	ND (0.048)
Naphthalene	66	77	25	0.053 (0.047)	0.15 J (0.5)	150 (3.9)	ND (0.24)	0.17 (0.047)	0.17 (0.046)	1.6 (0.049)	ND (0.048)
Phenanthrene	190000	190000	10000	0.0082 J (0.047)	NA	320 (3.9)	NA	NA	NA	NA	ND (0.048)
Pyrene	96000	190000	2200	0.0052 J (0.047)	NA	190 (3.9)	NA	NA	NA	NA	ND (0.048)
Metals											
Lead	1000	190000	450	156 (2.86)	NA	195 (2.87)	NA	90.8 (2.67)	99.7 J (1380)	190 (2.9)	87 (2.85)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
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J - Estimated Concentration

Table I1
Summary of BDH Soil Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-668-08 PB-668-08-0.0-0.5 0.0 - 0.5 11/30/2021	PB-668-08 PB-668-08-2.5-3.0 2.5 - 3.0 11/30/2021	PB-668-08 PB-668-08-6.0-6.5 6.0 - 6.5 11/30/2021	PB-672-01 PB-672-01-SS01 3.0 - 3.5 5/20/2021	PB-672-02 PB-672-02-SS01 3.0 - 3.5 5/20/2021	PB-672-03 PB-672-03-SS01 3.0 - 3.5 5/20/2021	PB-672-04 PB-672-04-SS01 3.0 - 3.5 5/20/2021	PB-672-05 PB-672-05-SS01 3.0 - 3.5 5/20/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	NA	NA	NA	ND (0.00051)	ND (0.0005)	ND (0.00058)	ND (0.00043)	ND (0.0006)
Cumene	10000	10000	2500	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.00086)	ND (0.0012)
1,2-Dibromoethane	3.7	4.2	0.005	NA	NA	NA	ND (0.00051)	ND (0.0005)	ND (0.00058)	ND (0.00043)	ND (0.0006)
1,2-Dichloroethane	85	98	0.5	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.00086)	ND (0.0012)
Ethyl Benzene	880	1000	70	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.00086)	ND (0.0012)
Methyl tert-butyl ether	8500	9800	2	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.0023)	ND (0.0017)	ND (0.0024)
Toluene	10000	10000	100	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.00086)	ND (0.0012)
1,2,4-Trimethylbenzene	4700	5400	300	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.0023)	ND (0.0017)	ND (0.0024)
1,3,5-Trimethylbenzene	4700	5400	93	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.0023)	ND (0.0017)	ND (0.0024)
Xylenes (total)	7900	9100	1000	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.0023)	ND (0.0017)	ND (0.0024)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	NA	NA	NA	0.054 (0.0075)	0.53 (0.076)	3.8 (0.2)	0.017 (0.0078)	0.071 (0.038)
Benzo(a)anthracene	130	190000	340	NA	NA	NA	0.2 (0.0075)	2 (0.076)	7.9 (0.2)	0.094 (0.0078)	0.8 (0.038)
Benzo(a)pyrene	91	190000	46	3.8 (0.52)	3.7 (0.28)	ND (0.39)	0.18 (0.0075)	1.7 (0.076)	6.5 (0.2)	0.083 (0.0078)	0.78 (0.038)
Benzo(b)fluoranthene	76	190000	170	5.1 (0.39)	4.9 (0.21)	0.24 J (0.29)	0.25 (0.0075)	2.2 (0.076)	8.1 (0.2)	0.1 (0.0078)	0.92 (0.038)
Benzo(g,h,i)perylene	190000	190000	180	NA	NA	NA	0.12 (0.0075)	1 (0.076)	3.3 (0.2)	0.042 (0.0078)	0.45 (0.038)
Chrysene	760	190000	230	NA	NA	NA	0.15 (0.0075)	1.8 (0.076)	6.6 (0.2)	0.068 (0.0078)	0.64 (0.038)
Fluorene	130000	190000	3800	NA	NA	NA	0.017 (0.0075)	0.14 (0.076)	1.8 (0.2)	0.0035 J (0.0078)	0.0089 J (0.038)
Naphthalene	66	77	25	0.54 J (0.64)	0.32 J (0.36)	0.51 (0.49)	0.0068 J (0.0075)	0.035 J (0.076)	2.4 (0.2)	0.011 (0.0078)	ND (0.038)
Phenanthrene	190000	190000	10000	NA	NA	NA	0.21 (0.0075)	2.9 (0.076)	15 (0.2)	0.078 (0.0078)	0.099 (0.038)
Pyrene	96000	190000	2200	NA	NA	NA	0.28 (0.0075)	3.7 (0.076)	14 (0.2)	0.12 (0.0078)	1.1 (0.038)
Metals											
Lead	1000	190000	450	NA	NA	NA	52.1 (2.28)	16.8 (2.26)	23.4 (2.31)	12.1 (2.21)	14.4 (2.3)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-672-06 PB-672-06-SS01 4.5 - 5.0 5/20/2021	PB-672-07 PB-672-07-SS01 3.0 - 3.5 5/20/2021	PB-672-08 PB-672-08-SS01 3.0 - 3.5 5/20/2021	PB-672-09 PB-672-09-SS01 3.0 - 3.5 5/20/2021	PB-672-10 PB-672-10-SS01 3.0 - 3.5 5/20/2021	PB-672-11 PB-672-11-SS01 3.5 - 4.0 5/20/2021	PB-672-12 PB-672-12-SS01 4.5 - 5.0 5/20/2021	PB-672-13 PB-672-13-SS01 4.5 - 5.0 5/20/2021
Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.00048)	ND (0.00074)	ND (0.00051)	ND (0.00047)	ND (0.00049)	0.00043 (0.00043)	ND (0.00054)	ND (0.00063)
Cumene	10000	10000	2500	ND (0.00096)	ND (0.0015)	ND (0.001)	ND (0.00094)	ND (0.00097)	ND (0.00086)	ND (0.0011)	0.00026 J (0.0013)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.00048)	ND (0.00074)	ND (0.00051)	ND (0.00047)	ND (0.00049)	ND (0.00043)	ND (0.00054)	ND (0.00063)
1,2-Dichloroethane	85	98	0.5	ND (0.00096)	ND (0.0015)	ND (0.001)	ND (0.00094)	ND (0.00097)	ND (0.00086)	ND (0.0011)	ND (0.0013)
Ethyl Benzene	880	1000	70	ND (0.00096)	ND (0.0015)	ND (0.001)	ND (0.00094)	ND (0.00097)	ND (0.00086)	ND (0.0011)	0.00032 J (0.0013)
Methyl tert-butyl ether	8500	9800	2	ND (0.0019)	ND (0.003)	ND (0.002)	ND (0.0019)	ND (0.0019)	ND (0.0017)	ND (0.0021)	ND (0.0025)
Toluene	10000	10000	100	ND (0.00096)	ND (0.0015)	ND (0.001)	ND (0.00094)	ND (0.00097)	ND (0.00086)	ND (0.0011)	ND (0.0013)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0019)	ND (0.003)	ND (0.002)	ND (0.0019)	ND (0.0019)	ND (0.0017)	ND (0.0021)	0.0028 (0.0025)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0019)	ND (0.003)	ND (0.002)	ND (0.0019)	ND (0.0019)	ND (0.0017)	ND (0.0021)	0.0011 J (0.0025)
Xylenes (total)	7900	9100	1000	ND (0.0019)	ND (0.003)	ND (0.002)	ND (0.0019)	ND (0.0019)	ND (0.0017)	ND (0.0021)	0.00174 J (0.0025)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	0.00098 J (0.0076)	0.014 (0.0077)	0.68 (0.039)	0.0021 J (0.0078)	ND (0.0076)	ND (0.016)	0.08 (0.0076)	0.14 J (0.15)
Benzo(a)anthracene	130	190000	340	0.0013 J (0.0076)	0.16 (0.0077)	1.4 (0.039)	0.013 (0.0078)	0.0015 J (0.0076)	0.0061 J (0.016)	0.24 (0.0076)	0.47 (0.15)
Benzo(a)pyrene	91	190000	46	0.0011 J (0.0076)	0.15 (0.0077)	1.1 (0.039)	0.023 (0.0078)	0.0022 J (0.0076)	0.0054 J (0.016)	0.22 (0.0076)	0.48 (0.15)
Benzo(b)fluoranthene	76	190000	170	0.0016 J (0.0076)	0.21 (0.0077)	1.2 (0.039)	0.032 (0.0078)	0.0032 J (0.0076)	0.0069 J (0.016)	0.28 (0.0076)	0.58 (0.15)
Benzo(g,h,i)perylene	190000	190000	180	0.0017 J (0.0076)	0.1 (0.0077)	0.58 (0.039)	0.023 (0.0078)	0.0046 J (0.0076)	0.0031 J (0.016)	0.11 (0.0076)	0.27 (0.15)
Chrysene	760	190000	230	0.00087 J (0.0076)	0.13 (0.0077)	1.2 (0.039)	0.012 (0.0078)	0.00096 J (0.0076)	0.0048 J (0.016)	0.18 (0.0076)	0.4 (0.15)
Fluorene	130000	190000	3800	0.001 J (0.0076)	0.0012 J (0.0077)	0.19 (0.039)	ND (0.0078)	ND (0.0076)	ND (0.016)	0.059 (0.0076)	0.73 (0.15)
Naphthalene	66	77	25	ND (0.0076)	0.0037 J (0.0077)	0.02 J (0.039)	0.0023 J (0.0078)	ND (0.0076)	ND (0.016)	0.044 (0.0076)	8.1 (0.15)
Phenanthrene	190000	190000	10000	0.0045 J (0.0076)	0.058 (0.0077)	2.6 (0.039)	0.0018 J (0.0078)	0.00084 J (0.0076)	0.0039 J (0.016)	0.34 (0.0076)	0.58 (0.15)
Pyrene	96000	190000	2200	0.0025 J (0.0076)	0.22 (0.0077)	2.7 (0.039)	0.012 (0.0078)	0.0011 J (0.0076)	0.0076 J (0.016)	0.33 (0.0076)	0.62 (0.15)
Metals											
Lead	1000	190000	450	16.6 (2.23)	20.4 (2.24)	22.8 (2.33)	24.5 (2.22)	20.7 (2.26)	16.2 (2.35)	133 (2.28)	14.2 (2.3)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

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Tank Group 01
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Volatile Organic Compounds											
Benzene	280	330	0.5	ND (0.00052)	ND (0.00058)	ND (0.00049)	ND (0.00044)	ND (0.0005)	ND (0.00065)	ND (0.00048)	ND (0.00056)
Cumene	10000	10000	2500	ND (0.001)	ND (0.0012)	ND (0.00098)	ND (0.00088)	ND (0.001)	ND (0.0013)	ND (0.00096)	ND (0.0011)
1,2-Dibromoethane	3.7	4.2	0.005	NA	ND (0.00058)	ND (0.00049)	ND (0.00044)	ND (0.0005)	ND (0.00065)	ND (0.00048)	ND (0.00056)
1,2-Dichloroethane	85	98	0.5	NA	ND (0.0012)	ND (0.00098)	ND (0.00088)	ND (0.001)	ND (0.0013)	ND (0.00096)	ND (0.0011)
Ethyl Benzene	880	1000	70	NA	ND (0.0012)	ND (0.00098)	ND (0.00088)	ND (0.001)	ND (0.0013)	ND (0.00096)	ND (0.0011)
Methyl tert-butyl ether	8500	9800	2	ND (0.0021)	ND (0.0023)	ND (0.002)	ND (0.0018)	ND (0.002)	ND (0.0026)	ND (0.0019)	ND (0.0022)
Toluene	10000	10000	100	ND (0.001)	ND (0.0012)	ND (0.00098)	ND (0.00088)	ND (0.001)	ND (0.0013)	ND (0.00096)	ND (0.0011)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0021)	ND (0.0023)	ND (0.002)	ND (0.0018)	ND (0.002)	ND (0.0026)	ND (0.0019)	ND (0.0022)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0021)	ND (0.0023)	ND (0.002)	ND (0.0018)	ND (0.002)	ND (0.0026)	ND (0.0019)	ND (0.0022)
Xylenes (total)	7900	9100	1000	ND (0.0021)	ND (0.0023)	ND (0.002)	ND (0.0018)	ND (0.002)	ND (0.0026)	ND (0.0019)	ND (0.0022)
Semivolatile Organic Compounds											
Anthracene	190000	190000	350	NA	0.073 (0.015)	0.0076 J (0.0079)	0.00082 J (0.0078)	0.028 (0.0081)	0.013 (0.0083)	0.001 J (0.008)	2.5 (0.16)
Benzo(a)anthracene	130	190000	340	NA	0.24 (0.015)	0.036 (0.0079)	0.0045 J (0.0078)	0.11 (0.0081)	0.069 (0.0083)	0.0069 J (0.008)	7 (0.16)
Benzo(a)pyrene	91	190000	46	ND (0.15)	0.24 (0.015)	0.03 (0.0079)	0.0029 J (0.0078)	0.086 (0.0081)	0.056 (0.0083)	0.0053 J (0.008)	4.6 (0.16)
Benzo(b)fluoranthene	76	190000	170	NA	0.26 (0.015)	0.042 (0.0079)	0.0043 J (0.0078)	0.11 (0.0081)	0.068 (0.0083)	0.0068 J (0.008)	6 (0.16)
Benzo(g,h,i)perylene	190000	190000	180	NA	0.12 (0.015)	0.015 (0.0079)	0.002 J (0.0078)	0.054 (0.0081)	0.036 (0.0083)	0.0038 J (0.008)	1.9 (0.16)
Chrysene	760	190000	230	NA	0.16 (0.015)	0.032 (0.0079)	0.0036 J (0.0078)	0.088 (0.0081)	0.057 (0.0083)	0.0048 J (0.008)	5.1 (0.16)
Fluorene	130000	190000	3800	NA	0.039 (0.015)	0.002 J (0.0079)	ND (0.0078)	0.011 (0.0081)	0.0039 J (0.0083)	ND (0.008)	0.66 (0.16)
Naphthalene	66	77	25	ND (0.037)	0.028 (0.015)	0.005 J (0.0079)	0.0019 J (0.0078)	0.011 (0.0081)	0.05 (0.0083)	0.0017 J (0.008)	0.15 J (0.16)
Phenanthrene	190000	190000	10000	NA	0.22 (0.015)	0.026 (0.0079)	0.0035 J (0.0078)	0.12 (0.0081)	0.041 (0.0083)	0.0049 J (0.008)	6.7 (0.16)
Pyrene	96000	190000	2200	NA	0.3 (0.015)	0.048 (0.0079)	0.0055 J (0.0078)	0.18 (0.0081)	0.086 (0.0083)	0.01 (0.008)	8.8 (0.16)
Metals											
Lead	1000	190000	450	14.2 (2.23)	128 (2.29)	18.1 (2.31)	34.5 (2.29)	80.6 (2.41)	21.3 (2.42)	21.1 (2.27)	45.4 (2.28)

Notes:
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2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
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Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Sample ID Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact MSC for Surface Soil (0-2 ft)	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	PB-672-21 PB-672-21-SS01 2.0 - 2.5 5/20/2021	PB-672-22 PB-672-22-SS01 1.0 - 1.5 5/20/2021	PB-672-23 PB-672-23-SS01 2.0 - 2.5 5/21/2021
Volatile Organic Compounds						
Benzene	280	330	0.5	0.0014 (0.00052)	ND (0.00057)	0.00082 J (0.00089)
Cumene	10000	10000	2500	ND (0.001)	ND (0.0011)	ND (0.0018)
1,2-Dibromoethane	3.7	4.2	0.005	ND (0.00052)	ND (0.00057)	ND (0.00089)
1,2-Dichloroethane	85	98	0.5	ND (0.001)	ND (0.0011)	ND (0.0018)
Ethyl Benzene	880	1000	70	0.00029 J (0.001)	ND (0.0011)	ND (0.0018)
Methyl tert-butyl ether	8500	9800	2	ND (0.0021)	ND (0.0023)	ND (0.0036)
Toluene	10000	10000	100	0.0019 (0.001)	ND (0.0011)	ND (0.0018)
1,2,4-Trimethylbenzene	4700	5400	300	ND (0.0021)	0.0008 J (0.0023)	ND (0.0036)
1,3,5-Trimethylbenzene	4700	5400	93	ND (0.0021)	0.001 J (0.0028)	ND (0.0036)
Xylenes (total)	7900	9100	1000	0.00177 J (0.0021)	0.00172 J (0.0023)	ND (0.0036)
Semivolatile Organic Compounds						
Anthracene	190000	190000	350	0.0044 J (0.0077)	0.23 (0.04)	0.034 J (0.094)
Benzo(a)anthracene	130	190000	340	0.02 (0.0077)	1.5 (0.04)	0.28 (0.094)
Benzo(a)pyrene	91	190000	46	0.022 (0.0077)	1.3 (0.04)	0.52 (0.094)
Benzo(b)fluoranthene	76	190000	170	0.024 (0.0077)	1.5 (0.04)	0.37 (0.094)
Benzo(g,h,i)perylene	190000	190000	180	0.017 (0.0077)	1 (0.04)	0.56 (0.094)
Chrysene	760	190000	230	0.019 (0.0077)	1.2 (0.04)	0.43 (0.094)
Fluorene	130000	190000	3800	0.0042 J (0.0077)	0.05 (0.04)	0.024 J (0.094)
Naphthalene	66	77	25	0.0069 J (0.0077)	0.17 (0.04)	0.1 (0.094)
Phenanthrene	190000	190000	10000	0.02 (0.0077)	0.87 (0.04)	0.16 (0.094)
Pyrene	96000	190000	2200	0.03 (0.0077)	2 (0.04)	0.2 (0.094)
Metals						
Lead	1000	190000	450	15.2 (2.2)	292 (2.37)	153 (2.72)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Grey shaded surface soil concentrations exceed the Non-Res Direct Contact MSCs for Surface Soil (0-2 ft) and grey shaded subsurface concentrations exceed the Non-Res Direct Contact MSCs for Subsurface Soil (2-15 ft).
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table I2
Summary of BDH Soil QAQC Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Sample ID	TB-210518	TB-210520	TB-210521	TB-211129	TB-211130	TB-211201	TB-230105-1
Sample Date	5/18/2021	5/20/2021	5/21/2021	11/29/2021	11/30/2021	12/1/2021	1/5/2023
Comments	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Volatile Organic Compounds	ND	ND	ND	ND	ND	ND	ND

Note:
1 Only compounds with at least one detection are shown.
Abbreviation:
ND - Not Detected

Table I3
Summary of BDH Groundwater Analytical Results
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location		Non-Res	TG01-MW-01	TG01-MW-01	TG01-MW-02	TG01-MW-02	TG01-MW-02	TG01-MW-03	TG01-MW-03	TG01-MW-03
Sample ID		Groundwater	TG01-MW-01-230125	TG01-MW-01-230227	TG01-MW-02-230126	TG01-MW-02-230126D	TG01-MW-02-230227	TG01-MW-03-230125	TG01-MW-03-230227	TG01-MW-03-230227D
Sample Date		Used Aquifer	1/25/2023	2/27/2023	1/26/2023	1/26/2023	2/27/2023	1/25/2023	2/27/2023	2/27/2023
Comments		(TDS ≤ 2500)				Field Duplicate				Field Duplicate
Volatile Organic Compounds										
Benzene		0.005	0.01 (0.005)	0.0095 (0.005)	0.00044 J (0.0005)	0.00044 J (0.0005)	ND (0.005)	0.0057 (0.0005)	0.0081 (0.005)	0.0084 (0.0025)
Cumene		3.5	0.071 (0.005)	0.072 (0.005)	ND (0.0005)	ND (0.0005)	ND (0.005)	0.0012 (0.0005)	ND (0.005)	0.0014 J (0.0025)
1,2-Dibromoethane		0.00005	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
1,2-Dichloroethane		0.005	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.005)	ND (0.0025)
Ethyl Benzene		0.7	0.15 (0.005)	0.15 (0.005)	ND (0.0005)	ND (0.0005)	ND (0.005)	0.00018 J (0.0005)	ND (0.005)	ND (0.0025)
Methyl tert-butyl ether		0.02	ND (0.01)	ND (0.01)	ND (0.001)	ND (0.001)	ND (0.01)	ND (0.001)	ND (0.01)	ND (0.005)
Toluene		1	1.2 (0.0075)	1.3 (0.0075)	0.016 (0.00075)	0.017 (0.00075)	ND (0.0075)	ND (0.00075)	ND (0.0075)	ND (0.0038)
1,2,4-Trimethylbenzene		0.53	1.6 (0.025)	1.7 (0.025)	ND (0.0025)	0.00031 J (0.0025)	ND (0.025)	0.00051 J (0.0025)	0.0075 J (0.025)	0.0015 J (0.012)
1,3,5-Trimethylbenzene		0.53	0.66 (0.025)	0.67 (0.025)	ND (0.0025)	ND (0.0025)	ND (0.025)	0.00028 J (0.0025)	0.0027 J (0.025)	ND (0.012)
Xylenes (total)		10	1.86 J (0.01)	1.98 J (0.01)	ND (0.001)	0.00088 J (0.001)	ND (0.01)	0.00102 J (0.001)	ND (0.01)	ND (0.005)
Semivolatile Organic Compounds										
Anthracene		0.066	0.00033 (0.0001)	0.00009 J (0.0001)	0.00014 (0.0001)	0.00013 (0.0001)	0.00029 (0.0001)	0.00028 (0.0001)	0.00037 (0.0001)	0.00031 (0.0001)
Benzo(a)anthracene		0.0039	0.00003 J (0.00005)	0.00007 (0.00005)	0.00006 (0.00005)	0.00006 (0.00005)	0.00023 (0.00005)	0.00005 J (0.00005)	0.00012 (0.00005)	0.00013 (0.00005)
Benzo(a)pyrene		0.0002	ND (0.0001)	ND (0.0001)	0.00002 J (0.0001)	0.00003 J (0.0001)	0.00009 J (0.0001)	0.00002 J (0.0001)	0.00005 J (0.0001)	0.00005 J (0.0001)
Benzo(b)fluoranthene		0.0012	ND (0.00005)	0.00002 J (0.00005)	0.00002 J (0.00005)	0.00003 J (0.00005)	0.00008 (0.00005)	0.00004 J (0.00005)	0.00007 (0.00005)	0.00007 (0.00005)
Benzo(g,h,i)perylene		0.00026	ND (0.0001)	0.00002 J (0.0001)	ND (0.0001)	0.00002 J (0.0001)	0.00005 J (0.0001)	0.00002 J (0.0001)	0.00003 J (0.0001)	0.00003 J (0.0001)
Chrysene		0.0019	0.00002 J (0.0001)	0.00002 J (0.0001)	0.00007 J (0.0001)	0.00007 J (0.0001)	0.00025 (0.0001)	0.00003 J (0.0001)	0.00007 J (0.0001)	0.00006 J (0.0001)
Fluorene		1.9	0.00039 (0.0001)	0.00007 J (0.0001)	0.00011 (0.0001)	0.00011 (0.0001)	0.00017 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)	0.00019 (0.0001)
Indeno(1,2,3-cd)pyrene		0.0023	ND (0.0001)	0.00002 J (0.0001)	ND (0.0001)	ND (0.0001)	0.00005 J (0.0001)	0.00002 J (0.0001)	0.00004 J (0.0001)	0.00004 J (0.0001)
Naphthalene		0.1	0.022 (0.0001)	0.026 (0.0001)	0.0012 (0.0001)	0.0013 (0.0001)	0.0046 (0.0001)	0.0012 (0.0001)	0.0017 (0.0001)	0.0014 (0.0001)
Phenanthrene		1.1	0.0011 (0.00005)	0.00008 (0.00005)	0.00036 (0.00005)	0.00038 (0.00005)	0.00022 (0.00005)	0.00025 (0.00005)	0.00056 (0.00005)	0.00047 (0.00005)
Pyrene		0.13	0.00022 (0.0001)	ND (0.0001)	0.00032 (0.0001)	0.00029 (0.0001)	0.00058 (0.0001)	0.00023 (0.0001)	0.00034 (0.0001)	0.0003 (0.0001)
Metals										
Lead		0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.00181 (0.001)	0.0004222 J (0.001)	0.0004186 J (0.001)

Notes:
1 All concentrations reported in mg/L (ppm); detection limits in parentheses.
2 Dissolved lead results are shown.
3 Underlined concentrations exceed the Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSCs.

Abbreviations:
ND - Not Detected
J - Estimated Concentration

Table I4

Summary of BDH Groundwater QAQC Analytical Results

Tank Group 01

Bellwether District Holdings, LLC, Philadelphia, PA

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Sample ID	**FB-230126-1**	**TB-230126-1**	**FB-230126-2**	**TB-230126-2**	**FB-230227-2**	**TB-230227-2**
Sample Date	**1/26/2023**	**1/26/2023**	**1/26/2023**	**1/26/2023**	**2/27/2023**	**2/27/2023**
Comments	**Field Blank**	**Trip Blank**	**Field Blank**	**Trip Blank**	**Field Blank**	**Trip Blank**
Volatile Organic Compounds	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds						
Benzo(b)fluoranthene	ND (0.00005)	NA	ND (0.00005)	NA	0.00002 J (0.00005)	NA
Benzo(g,h,i)perylene	ND (0.0001)	NA	ND (0.0001)	NA	0.00002 J (0.0001)	NA
Phenanthrene	0.00003 J (0.00005)	NA	ND (0.00005)	NA	ND (0.00005)	NA
Metals	ND	NA	ND	NA	ND	NA

Notes:

1 All concentrations reported in mg/L (ppm); detection limits in parentheses.

2 Only compounds with at least one detection are shown.

Abbreviations:

ND - Not Detected

NA - Not Analyzed

J - Estimated Concentration

Table I5
Quality Control Methodology
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Multiple VOC Runs Data Quality	Solution
If the surrogate recoveries for one run are **within acceptance criteria** and the other run has **3-4 surrogates outside of acceptance criteria**:	The run with surrogate recoveries within acceptance criteria is selected as reportable.
If the surrogate recoveries for one run are **within acceptance criteria** and has some **detections** and the other run has **1-2 surrogates outside of acceptance criteria**:	The run with surrogate recoveries within acceptance criteria is selected as reportable.
If one run has surrogate recoveries **within acceptance critera** but is **non-detect** and the other run has **1-2 surrogates outside of acceptance** criteria but has **detections**:	The run with detections is selected as reportable and the run with non-detects is not reported.
If both runs have **detections** and **surrogate recoveries outside of acceptance criteria**:	The run with more surrogates recoveries outside acceptance criteria is not reported and the run with fewer surrogate recoveries outside of acceptance criteria is selected as reportable.
If one run has surrogate recoveries **outside of acceptance critera** but is **non-detect** and the other run has **1-2 more surrogates outside of acceptance** criteria but has **detections**:	The run with detections is selected as reportable and the run with non-detects is not reported.
If both runs have the **same number of surrogates** with recovery outside the acceptance criteria:	If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable .
If two VOC runs are reported and there are no QC issues for both runs:	If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable .

Table I6
Quality Control Checklist
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

	Keyfile-Related		EDD-Related											
							Multiple Results							
Date Sampled	Check Lab Login and Keyfile	Check COC/Field Notes Uploaded	Check Sample IDs	Check Analyte List Reported	Review EDD for Issues	Check Dates, Matrix and Sample Type	Reported	Surrogate Recovery	Data Qualifiers	Reasonable Limits	Other	Resolved	Check for Concerning Qualifiers	Comments
5/18/2021	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2126144-05 (PB-666-04-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. Where both results detected, the higher is reported; if one result is detected and one is non-detect, the detection is reported; if both results non-detect, the lower reporting limits are reported. L2126144-16 (PB-666-21-SS01): VOCs reported for two runs. The internal standard (IS) response for 1,4-dichlorobenzene-d4 (38%) and the surrogate recovery for 4-bromofluorobenzene (159%) were outside the acceptance criteria in the low-level analysis. The low run is not reportable and the high run is reported.
5/19/2021	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2126411-12 (PB-663-03-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. Where both results detected, the higher is reported; if one result is detected and one is non-detect, the detection is reported; if both results non-detect, the lower reporting limits are reported. L2126411-15 (PB-663-06-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. Where both results detected, the higher is reported; if one result is detected and one is non-detect, the detection is reported; if both results non-detect, the lower reporting limits are reported.
5/20/2021	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2126821-06 (PB-663-14-SS01): VOCs reported for two runs. The initial run surrogate recovery for 4-bromofluorobenzene (137%) was outside the acceptance criteria. The initial run is not reportable and the reanalysis is reported. L2126821-28 (PB-672-22-SS01): VOCs reported for two runs. The internal standard (IS) response for 1,4-dichlorobenzene-d4 (46%) and the surrogate recovery for 4-bromofluorobenzene (131%) were outside the acceptance criteria; however, re-analysis achieved similar results: 1,4-dichlorobenzene-d4 (33%) and 4-bromofluorobenzene (137%). If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable.
5/21/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
11/29/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
11/29/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
11/30/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
12/1/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
12/1/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
1/17/2022	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
12/1/2021	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
1/17/2022	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
1/5/2023	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2300870-05 (CTSP-05-SS01-1.0): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies. Surrogate recoveries for the following samples are outside the acceptance criteria; however, the samples were not re-analyzed due to coelution with an obvious interference. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable. L2300870-11 (CTSP-11-SS01-3.0): VOCs reported for two runs. The IS response for fluorobenzene (264%) and the surrogate recoveries for toluene-d8 (173%), 4-bromofluorobenzene (1700%), and dibromofluoromethane (32%), were outside the acceptance criteria due to obvious interferences. The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable. L2300870-13 (CTSP-13-SS01-2.5): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies. Surrogate recoveries for the following samples are outside the acceptance criteria; however, the samples were not re-analyzed due to coelution with an obvious interference. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable. L2300870-14 (CTSP-14-SS01-2.0): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies. Surrogate recoveries for the following samples are outside the acceptance criteria; however, the samples were not re-analyzed due to coelution with an obvious interference. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable. L2300870-16 (CTSP-16-SS01-4.0): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies. Surrogate recoveries for the following samples are outside the acceptance criteria; however, the samples were not re-analyzed due to coelution with an obvious interference. The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable.
1/5/2023, 1/6/2023	Pass	Pass	Pass	Pass	Pass	Pass	No*						Pass	DBA
1/5/2023	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2300966-01 (TG01-MW-03-7.5-8.0): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable.
1/24/2023, 1/25/2023, 1/26/2023	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	1,2-Dibromomethane reported for two runs for all samples. If both results are non-detect, the lower reporting limit is selected as reportable.
2/27/2023	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	1,2-Dibromomethane reported for two runs for all samples. If both results are non-detect, the lower reporting limit is selected as reportable.

Table I7
Soil RPD Calculations
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Code	Sample Name	Sample Date	Chem Group	PARAMNAME	CASRN	Total or Dissolved	RPD	Ratio	Primary Result	Primary Qualifier	Primary Limit	Duplicate Result	Duplicate Qualifier	Duplicate Limit	Average Result	Average Qualifier	Average Limit	Result Unit
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	Benzene	71-43-2	T	11%	1.1		U	7.20E-04		U	8.00E-04		U	7.60E-04	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	Cumene	98-82-8	T	13%	1.1		U	1.40E-03		U	1.60E-03		U	1.50E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	1,2-Dibromoethane	106-93-4	T	11%	1.1		U	7.20E-04		U	8.00E-04		U	7.60E-04	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	1,2-Dichloroethane	107-06-2	T	13%	1.1		U	1.40E-03		U	1.60E-03		U	1.50E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	Ethyl Benzene	100-41-4	T	13%	1.1		U	1.40E-03		U	1.60E-03		U	1.50E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	Methyl tert-butyl ether	1634-04-4	T	10%	1.1		U	2.90E-03		U	3.20E-03		U	3.05E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	Toluene	108-88-3	T	13%	1.1		U	1.40E-03		U	1.60E-03		U	1.50E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	1,2,4-Trimethylbenzene	95-63-6	T	10%	1.1		U	2.90E-03		U	3.20E-03		U	3.05E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	1,3,5-Trimethylbenzene	108-67-8	T	10%	1.1		U	2.90E-03		U	3.20E-03		U	3.05E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	VOC	Xylenes (total)	1330-20-7	T	10%	1.1		U	2.90E-03		U	3.20E-03		U	3.05E-03	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Anthracene	120-12-7	T	162%	9.4	3.20E-01		3.60E-02	3.40E-02		8.80E-03	1.77E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Benzo(a)anthracene	56-55-3	T	156%	8.0	1.20E+00		3.60E-02	1.50E-01		8.80E-03	6.75E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Benzo(a)pyrene	50-32-8	T	159%	8.7	9.60E-01		3.60E-02	1.10E-01		8.80E-03	5.35E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Benzo(b)fluoranthene	205-99-2	T	161%	9.3	1.30E+00		3.60E-02	1.40E-01		8.80E-03	7.20E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Benzo(g,h,i)perylene	191-24-2	T	162%	9.5	5.90E-01		3.60E-02	6.20E-02		8.80E-03	3.26E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Chrysene	218-01-9	T	154%	7.6	8.40E-01		3.60E-02	1.10E-01		8.80E-03	4.75E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Fluorene	86-73-7	T	170%	12.4	8.20E-02		3.60E-02	6.60E-03	J	8.80E-03	4.43E-02	J	2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Naphthalene	91-20-3	T	177%	16.2	8.90E-02		3.60E-02	5.50E-03	J	8.80E-03	4.73E-02	J	2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Phenanthrene	85-01-8	T	152%	7.3	1.10E+00		3.60E-02	1.50E-01		8.80E-03	6.25E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	SVOC	Pyrene	129-00-0	T	149%	6.8	1.50E+00		3.60E-02	2.20E-01		8.80E-03	8.60E-01		2.24E-02	mg/kg
PB-663-08	PB-663-08-SS01	5/20/2021	INORG	Lead	7439-92-1	T	63%	1.9	2.87E+01		2.13E+00	5.49E+01		2.63E+00	4.18E+01		2.38E+00	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	Benzene	71-43-2	T	196%	103.1	6.70E-02	J	8.80E-02		U	6.50E-04	3.37E-02	J	4.43E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	Cumene	98-82-8	T	197%	138.5		U	1.80E-01		U	1.30E-03		U	9.07E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	1,2-Dibromoethane	106-93-4	T	197%	135.4		U	8.80E-02		U	6.50E-04		U	4.43E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	1,2-Dichloroethane	107-06-2	T	197%	138.5		U	1.80E-01		U	1.30E-03		U	9.07E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	Ethyl Benzene	100-41-4	T	189%	36.9	4.80E-02	J	1.80E-01		U	1.30E-03	2.43E-02	J	9.07E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	Methyl tert-butyl ether	1634-04-4	T	197%	134.6		U	3.50E-01		U	2.60E-03		U	1.76E-01	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	Toluene	108-88-3	T	188%	33.3	1.00E-01	J	1.80E-01	3.00E-03		1.30E-03	5.15E-02	J	9.07E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	1,2,4-Trimethylbenzene	95-63-6	T	189%	33.8	8.80E-02	J	3.50E-01		U	2.60E-03	4.47E-02	J	1.76E-01	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	1,3,5-Trimethylbenzene	108-67-8	T	178%	16.9	4.40E-02	J	3.50E-01		U	2.60E-03	2.27E-02	J	1.76E-01	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	VOC	Xylenes (total)	1330-20-7	T	195%	73.1	1.90E-01	J	3.50E-01		U	2.60E-03	9.57E-02	J	1.76E-01	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Anthracene	120-12-7	T	177%	16.8	3.40E-03	J	1.20E-02	5.70E-02		8.60E-03	3.02E-02	J	1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Benzo(a)anthracene	56-55-3	T	123%	4.2	3.10E-02		1.20E-02	1.30E-01		8.60E-03	8.05E-02		1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Benzo(a)pyrene	50-32-8	T	99%	3.0	3.70E-02		1.20E-02	1.10E-01		8.60E-03	7.35E-02		1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Benzo(b)fluoranthene	205-99-2	T	84%	2.5	6.10E-02		1.20E-02	1.50E-01		8.60E-03	1.06E-01		1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Benzo(g,h,i)perylene	191-24-2	T	51%	1.7	3.20E-02		1.20E-02	5.40E-02		8.60E-03	4.30E-02		1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Chrysene	218-01-9	T	102%	3.1	2.90E-02		1.20E-02	8.90E-02		8.60E-03	5.90E-02		1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Fluorene	86-73-7	T	102%	3.1		U	1.20E-02	3.70E-02		8.60E-03	2.15E-02	J	1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Naphthalene	91-20-3	T	168%	11.5	3.40E-03	J	1.20E-02	3.90E-02		8.60E-03	2.12E-02	J	1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Phenanthrene	85-01-8	T	182%	20.6	6.30E-03	J	1.20E-02	1.30E-01		8.60E-03	6.82E-02	J	1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	SVOC	Pyrene	129-00-0	T	147%	6.5	2.30E-02		1.20E-02	1.50E-01		8.60E-03	8.65E-02		1.03E-02	mg/kg
PB-666-21	PB-666-21-SS01	5/18/2021	INORG	Lead	7439-92-1	T	33%	1.4	1.68E+04		1.82E+01	1.21E+04		1.28E+01	1.45E+04		1.55E+01	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	Benzene	71-43-2	T	5%	1.1	1.00E+01		5.00E-02	9.50E+00		4.90E-02	9.75E+00		4.95E-02	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	Cumene	98-82-8	T	115%	3.7	9.70E-01		1.00E-01	2.60E-01		9.80E-02	6.15E-01		9.90E-02	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	0%	1.0		U	2.00E-01		U	2.00E-01		U	2.00E-01	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	Toluene	108-88-3	T	23%	1.3	3.10E-01		1.00E-01	3.90E-01		9.80E-02	3.50E-01		9.90E-02	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	7%	1.1	5.60E+00		2.00E-01	6.00E+00		2.00E-01	5.80E+00		2.00E-01	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	0%	1.0	1.40E+00		2.00E-01	1.40E+00		2.00E-01	1.40E+00		2.00E-01	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	VOC	Xylenes (total)	1330-20-7	T	16%	1.2	2.30E+00	J	2.00E-01	2.70E+00	J	2.00E-01	2.50E+00	J	2.00E-01	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	SVOC	Naphthalene	91-20-3	T	0%	1.0	1.70E-01		4.70E-02	1.70E-01		4.60E-02	1.70E-01		4.65E-02	mg/kg
PB-668-06	TG01-MW-01-7.5-8.0	1/5/2023	INORG	Lead	7439-92-1	T	9%	1.1	9.08E+01		2.67E+00	9.97E+01	J	1.38E+03	9.53E+01	J	6.91E+02	mg/kg

Table I8
Groundwater RPD Calculations
Tank Group 01
Bellwether District Holdings, LLC, Philadelphia, PA

Location Code	Sample Name	Sample Date	Chem Group	PARAMNAME	CASRN	Total or Dissolved	RPD	Ratio	Primary Result	Primary Qualifier	Primary Limit	Duplicate Result	Duplicate Qualifier	Duplicate Limit	Average Result	Average Qualifier	Average Limit	Result Unit
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	Benzene	71-43-2	T	0%	1.0	4.40E-04	J	5.00E-04	4.40E-04	J	5.00E-04	4.40E-04	J	5.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	Cumene	98-82-8	T	0%	1.0		U	5.00E-04		U	5.00E-04		U	5.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	1,2-Dibromoethane	106-93-4	T	0%	1.0		U	1.00E-05		U	1.00E-05		U	1.00E-05	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	1,2-Dichloroethane	107-06-2	T	0%	1.0		U	5.00E-04		U	5.00E-04		U	5.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	Ethyl Benzene	100-41-4	T	0%	1.0		U	5.00E-04		U	5.00E-04		U	5.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	0%	1.0		U	1.00E-03		U	1.00E-03		U	1.00E-03	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	Toluene	108-88-3	T	6%	1.1	1.60E-02		7.50E-04	1.70E-02		7.50E-04	1.65E-02		7.50E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	156%	8.1		U	2.50E-03	3.10E-04	J	2.50E-03	7.80E-04	J	2.50E-03	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	0%	1.0		U	2.50E-03		U	2.50E-03		U	2.50E-03	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	VOC	Xylenes (total)	1330-20-7	T	13%	1.1		U	1.00E-03	8.80E-04	J	1.00E-03	6.90E-04	J	1.00E-03	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Anthracene	120-12-7	T	7%	1.1	1.40E-04		1.00E-04	1.30E-04		1.00E-04	1.35E-04		1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Benzo(a)anthracene	56-55-3	T	0%	1.0	6.00E-05		5.00E-05	6.00E-05		5.00E-05	6.00E-05		5.00E-05	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Benzo(a)pyrene	50-32-8	T	40%	1.5	2.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	2.50E-05	J	1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Benzo(b)fluoranthene	205-99-2	T	40%	1.5	2.00E-05	J	5.00E-05	3.00E-05	J	5.00E-05	2.50E-05	J	5.00E-05	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Benzo(g,h,i)perylene	191-24-2	T	133%	5.0		U	1.00E-04	2.00E-05	J	1.00E-04	3.50E-05	J	1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Chrysene	218-01-9	T	0%	1.0	7.00E-05	J	1.00E-04	7.00E-05	J	1.00E-04	7.00E-05	J	1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Fluorene	86-73-7	T	0%	1.0	1.10E-04		1.00E-04	1.10E-04		1.00E-04	1.10E-04		1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	0%	1.0		U	1.00E-04		U	1.00E-04		U	1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Naphthalene	91-20-3	T	8%	1.1	1.20E-03		1.00E-04	1.30E-03		1.00E-04	1.25E-03		1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Phenanthrene	85-01-8	T	5%	1.1	3.60E-04		5.00E-05	3.80E-04		5.00E-05	3.70E-04		5.00E-05	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	SVOC	Pyrene	129-00-0	T	10%	1.1	3.20E-04		1.00E-04	2.90E-04		1.00E-04	3.05E-04		1.00E-04	MG/L
TG01-MW-02	TG01-MW-02-230126	1/26/2023	INORG	Lead	7439-92-1	D	0%	1.0		U	1.00E-03		U	1.00E-03		U	1.00E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	Benzene	71-43-2	T	4%	1.0	8.10E-03		5.00E-03	8.40E-03		2.50E-03	8.25E-03		3.75E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	Cumene	98-82-8	T	113%	3.6		U	5.00E-03	1.40E-03	J	2.50E-03	1.95E-03	J	3.75E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	1,2-Dibromoethane	106-93-4	T	0%	1.0		U	1.00E-05		U	1.00E-05		U	1.00E-05	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	1,2-Dichloroethane	107-06-2	T	67%	2.0		U	5.00E-03		U	2.50E-03		U	3.75E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	Ethyl Benzene	100-41-4	T	67%	2.0		U	5.00E-03		U	2.50E-03		U	3.75E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	67%	2.0		U	1.00E-02		U	5.00E-03		U	7.50E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	Toluene	108-88-3	T	65%	2.0		U	7.50E-03		U	3.80E-03		U	5.65E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	133%	5.0	7.50E-03	J	2.50E-02	1.50E-03	J	1.20E-02	4.50E-03	J	1.85E-02	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	127%	4.4	2.70E-03	J	2.50E-02		U	1.20E-02	4.35E-03	J	1.85E-02	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	VOC	Xylenes (total)	1330-20-7	T	67%	2.0		U	1.00E-02		U	5.00E-03		U	7.50E-03	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Anthracene	120-12-7	T	18%	1.2	3.70E-04		1.00E-04	3.10E-04		1.00E-04	3.40E-04		1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Benzo(a)anthracene	56-55-3	T	8%	1.1	1.20E-04		5.00E-05	1.30E-04		5.00E-05	1.25E-04		5.00E-05	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Benzo(a)pyrene	50-32-8	T	0%	1.0	5.00E-05	J	1.00E-04	5.00E-05	J	1.00E-04	5.00E-05	J	1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Benzo(b)fluoranthene	205-99-2	T	0%	1.0	7.00E-05		5.00E-05	7.00E-05		5.00E-05	7.00E-05		5.00E-05	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Benzo(g,h,i)perylene	191-24-2	T	0%	1.0	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Chrysene	218-01-9	T	15%	1.2	7.00E-05	J	1.00E-04	6.00E-05	J	1.00E-04	6.50E-05	J	1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Fluorene	86-73-7	T	5%	1.1	2.00E-04		1.00E-04	1.90E-04		1.00E-04	1.95E-04		1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	0%	1.0	4.00E-05	J	1.00E-04	4.00E-05	J	1.00E-04	4.00E-05	J	1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Naphthalene	91-20-3	T	19%	1.2	1.70E-03		1.00E-04	1.40E-03		1.00E-04	1.55E-03		1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Phenanthrene	85-01-8	T	17%	1.2	5.60E-04		5.00E-05	4.70E-04		5.00E-05	5.15E-04		5.00E-05	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	SVOC	Pyrene	129-00-0	T	13%	1.1	3.40E-04		1.00E-04	3.00E-04		1.00E-04	3.20E-04		1.00E-04	MG/L
TG01-MW-03	TG01-MW-03-230227	2/27/2023	INORG	Lead	7439-92-1	D	1%	1.0	4.22E-04	J	1.00E-03	4.19E-04	J	1.00E-03	4.20E-04	J	1.00E-03	MG/L