ADDENDUM TO THE SITE CHARACTERIZATION/REMEDIAL INVESTIGATION REPORT AREA OF INTEREST 7

SUNOCO, INC. (R&M)
PHILADELPHIA ENERGY SOLUTIONS REFINING AND MARKETING LLC FACILITY
PHILADELPHIA, PENNSYLVANIA

Sunoco, Inc. (R&M)
3144 Passyunk Avenue
Philadelphia, Pennsylvania 19145

Prepared by:
Langan Engineering & Environmental Services, Inc.
30 South 17th Street
Suite 1300
Philadelphia, Pennsylvania 19103

and

Aquaterra Technologies, Inc.
122 South Church Street
West Chester, PA 19382

September 19, 2013
2574601

ADDENDUM TO THE SITE CHARACTERIZATION/REMEDIAL INVESTIGATION REPORT AOI 7

Prepared by:
Langan Engineering & Environmental Services, Inc.
30 South 17th Street
Suite 1300
Philadelphia, Pennsylvania 19103

and

Aquaterra Technologies, Inc.
122 South Church Street
West Chester, PA 19382

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIFFANI LYNN DOERR
GEOLOGIST
No.PG004577

Tiffani L. Doerr, P.G.
Senior Hydrogeologist
Aquaterra Technologies, Inc.
PG004577

Kevin J. McKeever, P.E., P.G.
Senior Project Manager

September 19, 2013
2574601

TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1
2.0 PADEP COMMENTS AND ASSOCIATED RESPONSES 1
3.0 ADDITIONAL SITE CHARACTERIZATION ACTIVITIES 4
3.1 SOIL BORINGS AND SAMPLING IN SWMU AREAS 5
3.2 SOIL BORINGS AND SAMPLING IN NON-SWMU AREAS 6
3.3 INDOOR AIR SAMPLING 6
4.0 CHARACTERIZATION RESULTS 6
4.1 SOIL ANALYTICAL RESULTS FOR SWMU AREAS 6
4.1.1 Shallow (0-2 ft bgs) Soil Samples 7
4.1.2 Deep (2-15 ft bgs) Soil Samples 8
4.2 SOIL ANALYTICAL RESULTS FOR NON-SWMU AREAS 9
4.2.1 Shallow (0-2 ft bgs) Soil Samples 9
4.2.2 Deep (2-15 ft bgs) Soil Samples 9
4.3 INDOOR AIR ANALYTICAL RESULTS 10
5.0 HUMAN HEALTH EXPOSURE ASSESSMENT/RISK ASSESSMENT 11
6.0 STATUS OF TANKS 12
7.0 CONCLUSIONS 13

TABLE OF CONTENTS (continued)

LIST OF TABLES

Table 1 Summary of Surface Soil Analytical Results
Table 2 Summary of Subsurface Soil Analytical Results
Table 3 Summary of Indoor Air Analytical Results

LIST OF FIGURES

Figure 1 Completed Activities Plan
Figure 2 Summary of Surface Soil Exceedances
Figure 3 Summary of Subsurface Soil Exceedances
Figure 4 Indoor Air Sample Locations – October 2012
Figure 5 Storage Tanks in AOI 7

LIST OF APPENDICES

Appendix A Report Notifications
Appendix B Soil Boring Logs
Appendix C Stantec Indoor Air Assessment Report
Appendix D Soil Analytical Reports (on CD)
Appendix E Supplemental Site Characterization Report for Aboveground Storage Tanks GP-270, GP-271, GP-275, GP-283, and LO-1000
Appendix F Development of Site Specific Standard and Risk Assessment
Appendix G Data Usability Assessment

1.0 INTRODUCTION

Langan Engineering and Environmental Services, Inc. (Langan) and Aquaterra Technologies, Inc. (Aquaterra), on behalf of Sunoco, Inc. (R&M) (Sunoco), has prepared this report Addendum in response to the Pennsylvania Department of Environmental Protection's (PADEP's) July 17, 2012 comment document regarding the Site Characterization Report/Remedial Investigation Report (SCR/RIR) for AOI 7, dated February 29, 2012 prepared by Langan. This report addendum addresses the PADEP's comments to the original AOI 7 SCR/RIR and also includes additional site characterization work completed in AOI 7 since submittal of the original SCR/RIR.

Sunoco submitted a SCIR/RIR for AOI 7 on February 29, 2012 to the PADEP and United States Environmental Protection Agency (EPA) Region III. That report summarized the site characterization work completed between 2005 and 2012, as well as proposed remedial activities for AOI 7 based on the characterization. This SCR/RIR was submitted to the PADEP and the EPA in accordance with Sunoco's Work Plan for Sitewide Approach under the One Cleanup Program, dated September 16, 2011. The PADEP responded to the submittal of the SCR/RIR with a comment document on July 17, 2012, stating the issues that need to be addressed in order for Sunoco to obtain a release of liability under the Act 2 Program. In accordance with Act 2, Langan, on behalf of Sunoco, has prepared the required public and municipal notices as part of this Addendum to the report submittal. Appendix A includes a copy of the Act 2 report notices and their proof of receipt/publication for this Addendum. This Addendum to the SCR/RIR is comprised of two parts where the first part addresses the PADEP's comments to the SCR/RIR and the second part presents the additional site characterization activities conducted to address the PADEP's comments and amend the SCR/RIR.

Below are the comments received from the PADEP and the associated responses.

2.0 PADEP COMMENTS AND ASSOCIATED RESPONSES

1. ***The LNAPL in the vicinity of the No. 3 Separator area is located immediately adjacent to the Schuylkill River, and may be prevented from discharging to the river only by virtue of the structural integrity of the sheet pile bulkhead. If new evidence should appear to indicate that LNAPL has discharged or may be discharging to the Schuylkill River from this area, Sunoco will be responsible to***

investigate and remediate any environmental contamination that may have occurred due to the release of LNAPL from this area. The RIR indicates that Sunoco will design and implement a hydraulic control system in this area to recover the LNAPL in this area, and the proposed remedial system will be presented in the Cleanup Plan for the AOI-7. We concur with Sunoco's proposal.

Response

The construction of a total fluids hydraulic control system, which consists of 10 recovery wells, was completed by Sunoco on August 23, 2012. This system extracts water and oil along the sheet pile/bulkhead and between the sheet pile/bulkhead and the No. 3 Separator through the use of pneumatic submersible pumps. The extracted oil and water is pumped to an oil-water separator where the water is discharged to an onsite process sewer and the light non-aqueous phase liquid (LNAPL) is recovered and collected in a tank and recycled by the refinery. The system is currently operational and functioning as it was designed.

2. ***The sheet pile bulkhead should be recognized as an engineering control; therefore a Post Remediation Care Plan must be developed for the sheet pile bulkhead that will include periodic inspection for the structural integrity of the bulkhead. The UECA will ultimately require compliance with the PRCP for the bulkhead and other areas with engineering and /or hydraulic controls.***

Response

Sunoco agrees with the PADEP that the sheet pile wall/bulkhead along AOI 7 is an engineering control. Sunoco will include monitoring requirements for the sheet pile wall/bulkhead as part of the Post Remedial Care Plan (PRCP) to be included in the AOI 7 Cleanup Plan. In accordance with the Uniform Environmental Covenants Act (UECA), the Environmental Covenant (EC) to be prepared for the Site will include the PRCP monitoring requirements.

3. ***Contaminants of concern (COC) found in soil are benzene, 1, 2, 4 TMB, 1, 3, 5, TMB, naphthalene and lead. Based on the current and future intended non-residential use, site investigation was conducted for shallow soil only (0-2ft). Exposure assessment was also conducted for the COC that were above the non-residential direct contact MSCs found in shallow soil. The potential direct contact pathway for soil greater than two feet is described as incomplete based on Sunoco's existing permitting procedure (OSHA and personal protective***

equipment, PPE). The PRCP may need to incorporate this internal permit procedure. Please also note that a future termination of the existing Sunoco internal permit procedure may become a reopener of an Act 2 release. In order for site soil to be eligible for a release of liability under Act 2, additional soil investigation will be required for the 2-15 ft. interval (or soil to groundwater interface for the current scenario). Please follow the TGM on how to select a Cleanup Standard for soil medium for the non-residential scenario. Furthermore, the soil to groundwater pathway was not evaluated. The release of liability under Act 2 for soil will be granted only for those areas that has been investigated and remediated.

Response

Sunoco will include PES's existing Occupational Safety and Health Administration (OSHA) and personal protective equipment (PPE) permitting procedures for the Philadelphia refinery in the PRCP for AOI 7. Sunoco has informed PES that any future termination of the existing OSHA and PPE permitting procedures may become a reopener of an Act 2 release for AOI 7.

To characterize deeper soil at the refinery, Sunoco collected additional soil samples from the 2 to 15 feet (ft) soil interval or at the soil to groundwater interface at the site. A total of 31 deep soil samples were collected between 2 and 15 ft below ground surface (bgs) in accordance with the Act 2 Technical Guidance Manual (TGM) in November of 2012 and March of 2013. The boring locations are displayed in Figure 1. The surface soil results of these activities are presented in Table 1 and Figure 2. The subsurface soil results are presented in Table 2 and Figure 3. The soil sampling field procedures for the additional site characterization activities are included below.

4. ***Issues regarding investigation and closure of the five SWMUs, Nos. 87, 88, 89 (northwestern fill area), and Nos., 90, 91 (storage tank area), must be coordinated with the USEPA.***

Response

Sunoco has coordinated investigation and closure of the solid waste management units (SWMUs) 87, 88, 89, 90 and 91 through the completion of the additional soil sampling activities as described within this Addendum. This report is also being provided to EPA and issues regarding closure of the SWMUs in AOI 7 will be coordinated with EPA.

5. ***The calculated site specific standards (Appendix I, Table 1-2, and 1-3) for naphthalene and 1, 2, 4 TMB in soil medium are identical to the MSC for these compounds.***

Response

Sunoco acknowledges the calculated standards for these compounds are identical to the medium specific concentration (MSC). The applicable Statewide Health Standard established under Act 2 is determined through a process which compels comparison of the soil-to-groundwater numeric value to the direct contact numeric value and subsequent selection of the lower of the two. Given that the groundwater pathway is incomplete at AOI 7, the site-specific standard for non-carcinogens was calculated using PADEP's procedures and by adopting PADEP's default values (e.g., target risk, exposure frequency) for the evaluation of the ingestion and inhalation pathways. Consistent with the State's methodology, the lowest value derived from the most sensitive exposure pathway was selected as the site-specific standard. For naphthalene and 1,2,4-trimethylbenzene, the direct contact standard is lower than the soil-to-groundwater numeric value; therefore, it is identical to the MSC.

3.0 ADDITIONAL SITE CHARACTERIZATION ACTIVITIES

To address PADEP's comments above, and to further characterize AOI 7, Sunoco performed the following additional site characterization activities within AOI 7 in November of 2012 and March of 2013:

- The majority of the shallow soil samples stated above were collected within the five SWMUs (87, 88, 89, 90 and 91) to further characterize lead concentrations above the MSC in shallow soil from samples collected in June 2010. A total of 29 additional shallow soil samples were collected between 0 and 2 ft bgs.
- Deeper soil was characterized by collecting 31 deep soil samples between 2 and 15 ft bgs or at the groundwater interface.
- To investigate the potential vapor intrusion into indoor air pathway at occupied buildings in AOI 7, an indoor air sample was collected in the Maintenance Building 440. This building is the only occupied building in AOI 7 that is not under positive pressure.
- Newly-acquired soil data was evaluated from a human health exposure risk perspective.

To horizontally and vertically delineate and characterize soil within AOI 7, shallow and deep soil borings were advanced to facilitate the collection of soil samples for laboratory analysis. Soil borings were advanced using hand augers. All soils were screened using a photoionization detector (PID) and characterized for soil classification, structure, color, staining, odor, soil moisture, and soil texture by a geologist/environmental scientist/engineer. Soils collected within the SWMU areas were observed for the presence of leaded tank bottom materials in accordance with the existing leaded tank bottom investigation strategy. No leaded tank bottom materials were observed, therefore, none of the samples were analyzed for TCLP.

Soil samples were collected to represent discrete intervals, biased to any observed field evident impact (based on visual observations and PID readings) and/or at the soil/groundwater interface. If no PID readings were recorded or impacts were not observed, then a soil sample was collected from the shallow interval and at the deep interval at the soil/groundwater interface. Following the collection of soil samples, the boreholes were backfilled with removed soil and restored to the original ground surface. A geologic summary of each borehole can be found in Appendix B.

The additional investigation activities described above are discussed in the following sections.

3.1 Soil Borings and Sampling in SWMU Areas

In November 2012, a total of 37 additional soil borings (BH-12-44, BH-12-52 through BH-12-55, BH-12-59 through BH-12-67, BH-12-69, BH-12-70, BH-12-79 through BH-12-81, and BH-12-83 through BH-12-100) were attempted to be advanced within AOI 7 to further characterize shallow (0-2 ft bgs) and deep (2-15 ft bgs) soil in the SWMU areas. Of these 37 soil borings, 21 were able to be advanced and a total of 15 shallow and 19 deep soil samples were collected and submitted for laboratory analysis. Soil samples were submitted to Accutest Laboratories (Accutest) of Dayton, NJ for analysis of site COCs. The locations of the soil borings are shown on Figure 1.

In March 2013, five soil borings (BH-13-45, BH-13-46, BH-13-47, BH-13-48, BH-13-50) were advanced within AOI 7 to delineate previous samples collected in November 2012 that exceeded the MSC. From these five soil borings, a total of five shallow and three deep soil samples were collected and submitted to Accutest for laboratory analysis of site COCs. The locations of the soil borings are shown on Figure 1.

3.2 Soil Borings and Sampling in Non-SWMU Areas

In November 2012, a total of 14 additional soil borings (BH-12-42, BH-12-43, BH-12-56 through BH-12-58, BH-12-68, BH-12-72 through BH-12-78, and BH-12-82) were attempted to be advanced within AOI 7 to further characterize shallow (0-2 ft bgs) and deep (2-15 ft bgs) soil. From these 14 soil borings seven were able to be advanced and a total of nine shallow and nine deep soil samples were collected and submitted to Accutest for laboratory analysis of site COCs. The locations of the soil borings are shown on Figure 1.

3.3 Indoor Air Sampling

There are currently 16 occupied buildings in AOI 7 and one of these buildings is not under positive pressure (potential indoor air receptors). The building not under positive pressure is the Maintenance Building 440. The occupied buildings within AOI 7 are shown on Figure 2 and are operated by PES and regulated by OSHA. In October 2012, Stantec conducted indoor air and ambient air sampling at select buildings and locations throughout the PES facility. Stantec collected two indoor air samples from Maintenance Building 440. Information about the sample locations is included in Figure 4. One of the indoor air samples was collected from the 2nd floor, Room 221, and the other sample was collected from the 2nd floor meeting room.

The Stantec 2013 report is attached in Appendix C, and the results of the sampling in AOI 7 are discussed later in this report addendum.

4.0 CHARACTERIZATION RESULTS

4.1 Soil Analytical Results for SWMU Areas

Between November 2012 and March 2013, a total 42 soil samples were collected for analysis of site COCs from within the SWMU areas of AOI 7. Of the 42 soil samples analyzed, 20 were collected from 0-2 ft bgs (shallow soil samples) and the remaining 22 soil samples were collected from 2-15 ft bgs (deep soil samples). Results of the soil analysis are provided in Tables 1 and 2 and illustrated on Figures 3 and 4. A summary of the soil analytical results screened against the PADEP non-residential soil MSCs is

provided below and in Tables 3 and 4. The laboratory analytical reports are provided as Appendix D.

4.1.1 Shallow (0-2 ft bgs) Soil Samples

In November 2012, a total of 15 shallow soil samples were collected between 0 and 2 ft bgs. The 15 soil samples include: BH-12-46_0.5′, BH-12-47_1.5′, BH-12-67_2′, BH-12-68_1.5′, BH-12-69_2′, BH-12-70_2′, BH-12_79_1.0′, BH-12-83_1.0′, BH-12-85_1.5′, BH-12-87_1.0′, BH-12-91_0.5′, BH-12-92_0.5′, BH-12-94_1.0′, BH-12-98_1′, and BH-12-99_0.5′.

The shallow soil sample results were screened against the PADEP non-residential soil MSCs (0-2 ft bgs). Of the 15 shallow soil samples collected, a six samples exhibited COC concentrations above the PADEP non-residential soil MSCs. These six sample locations, and their corresponding results above the MSC, are shown in Figure 3 and are summarized below:

- BH-12-47_1.5′ – lead = 2060 mg/kg (milligrams per kilogram);
- BH-12-67_2′ – lead = 583 mg/kg;
- BH-12-79_1.0′ – lead = 498 mg/kg;
- BH-12-87_1.0′ – lead = 870 mg/kg;
- BH-12-94_1.0′ – lead = 1340 mg/kg; and
- BH-12-98_1′ – benzene = 0.53 mg/kg and lead = 955 mg/kg.

In March 2013, a total of five additional shallow soil samples were collected between 0 and 2 ft bgs. The five soil samples include: AOI7-BH-13-45_1.5-2_031313, AOI7_BH-13_46_1.5-2_031313, AOI7_BH-13-47_1.5-2_031313, AOI7-BH-13-48_1.5-2_031313, and AOI7-BH-13-50_0-0.5_031313. Of the five shallow soil samples collected, a three samples exhibited COC concentrations above their respective soil MSCs. These samples, as well as their results above the MSCs, are shown in Figure 3 and are summarized below:

- AOI7-BH-13-45_1.5-2_031313 – lead = 498 mg/kg;
- AOI7-BH-13-47_1.5-2_031313 – lead = 866 mg/kg; and
- AOI7-BH-13-48_1.5-2_031313 – benzene = 2.66 mg/kg.

4.1.2 Deep (2-15 ft bgs) Soil Samples

In November 2012, 19 deep soil samples were collected between 2 and 15 ft bgs in accordance with the Act 2 TGM. The 19 deep soil samples collected are as follows: BH-12-45_3.5' BH-12-48_3', BH-12-49_2.5', BH-12-53_2.5', BH-12-54_3', BH-12-55_2.5', BH-12-62_3', BH-12-64_2.5', BH-12-64_3', BH-12-67_3', BH-12-69_2.5', BH-12-70_4', BH-12-80_3.0', BH-12-83_3.0', BH-12-84_3.0', BH-12-85_3.0', BH-12-87_3.0', BH-12-88_2.5', and BH-12-100_3.0'.

The deep soil sample results were screened against the unsaturated PADEP non-residential soil MSCs (2-15 ft bgs). Of the 19 deep soil samples collected, eight deep soil samples had reported detections above their respective soil MSCs. These samples, as well as their results above the MSCs, are shown in Figure 4 and are summarized below:

- BH-12-45_3.5' – lead = 758 mg/kg;
- BH-12-48_3' – lead = 1530 mg/kg
- BH-12-53_2.5' – lead = 510 mg/kg;
- BH-12-54_3' – 1,3,5-TMB = 9.72 mg/kg;
- BH-12-64_2.5' – lead = 594 mg/kg;
- BH-12-67_3' – lead = 672 mg/kg;
- BH-12-85_3.0' – benzene = 2.35 mg/kg: and
- BH-12-87_3.0' – lead = 1110 mg/kg.

In March 2013, a total of 3 deep soil samples were collected between 2 and 15 ft bgs in accordance with the PADEP's TGM. The 3 soil samples include: AOI7-BH-13-45_2-2.5_031313, AOI7-BH-13-47_2.5-3_031313, and AOI7-BH-13-48_2.5-3_031313.

All three deep soil sample collected in 2013 had reported detections above their respective soil MSCs. These samples, as well as their results above the MSCs, are shown in Figure 4 and are summarized below:

- AOI7-BH-13-45_2-2.5_031313 – lead = 753 mg/kg;
- AOI7-BH-12-47_2.5-3_031313 – lead = 567 mg/kg; and
- AOI7-BH-13-48_2.5-3_031313 – benzene = 0.845 mg/kg.

4.2 Soil Analytical Results for Non-SWMU Areas

In November 2012, a total 18 soil samples were collected for analysis of site COCs from Non-SWMU areas within AOI 7. There were no soil samples collected in March 2013 in Non-SWMU areas within AOI 7 because further delineation was not necessary. Of the 18 soil samples analyzed, nine were collected from 0-2 ft bgs (shallow soil samples) and the remaining nine soil samples were collected from 2-15 ft bgs (deep soil samples). Results of the soil analysis are provided in Tables 1 and 2 and illustrated on Figures 3 and 4. A summary of the soil analytical results screened against the PADEP non-residential soil MSCs is provided below and in Tables 3 and 4. The laboratory analytical reports are provided as Appendix D.

4.2.1 Shallow (0-2 ft bgs) Soil Samples

In November 2012, a total of nine shallow soil samples were collected between 0 and 2 ft bgs in accordance with the PADEP's TGM. The nine soil samples include: BH-12-56_2', BH-12-68_1.5', BH-12-74_1', BH-12-75_1', BH-75_2', BH-12-76_1, BH-12-78_1.0', BH-12-78_2.0', and BH-12-82_1.0'.

The shallow soil sample results were screened against the PADEP non-residential soil MSCs (0-2 ft bgs). Of the nine shallow soil samples collected, a two samples exhibited COC concentrations above the MSC. These two soil samples, and their corresponding results above the MSC, are shown in Figure 3 and are summarized below:

- BH-12-56_2' – lead = 743 mg/kg; and
- BH-12-75_2' – lead = 551 mg/kg.

4.2.2 Deep (2-15 ft bgs) Soil Samples

In November 2012, a total of nine deep soil samples were collected between 2 and 15 ft bgs in accordance with the Act 2 TGM. The nine soil samples collected are as follows: BH-12-43_2.5', BH-12-58_3', BH-12-58_4', BH-12-68_3', BH-12-72_3.5', BH-12-73_5', BH-12-74_4', BH-12-76_3', and BH-12-77_3'.

The deep soil sample results were screened against the unsaturated PADEP non-residential soil MSCs (2-15 ft bgs). Of the nine deep soil samples collected, two deep soil samples exhibited COC concentrations above their respective soil MSCs. These samples, as well as their results above the MSCs, are shown in Figure 4 and are summarized below:

- BH-12-58_4' – lead = 467 mg/kg; and
- BH-12-74_4' – lead = 538 mg/kg.

4.3 Indoor Air Analytical Results

Stantec collected two indoor air samples from the one occupied building (Maintenance Building 440) within AOI 7 that is not under positive pressure. The results of the indoor air samples were compared to the OSHA permissible exposure limits (PELs) because the facility and these buildings are regulated by OSHA. The results are as follows:

- The Room 221 2nd floor sample exhibited concentrations of benzene, toluene, ethylbenzene, total xylene, cumene and 1,2,4-TMB above the reporting limit but below their corresponding OSHA PELs EPA Industrial Regional Screening Levels (RSLs) and PADEP Industrial Indoor Air Quality (IAQs) criteria; and
- The Meeting Room 2nd floor sample exhibited concentrations of benzene, toluene, ethylbenzene, total xylene, cumene and 1,2,4-TMB above the reporting limit but below the corresponding OSHA PELs, EPA Industrial RSLs and PADEP IAQs criteria.

Based on these results, all air samples collected from inside the building are below OSHA PELs, EPA Industrial RSLs and PADEP IAQs criteria for the protection of worker health. The air sampling results are provided in Table 3 and building sample locations are displayed in Figure 4. The Stantec 2013 indoor air sampling report is attached in Appendix C.

5.0 HUMAN HEALTH EXPOSURE ASSESSMENT/RISK ASSESSMENT

Based on the current and future intended non-residential site use, an exposure assessment was conducted for any compounds in shallow soils (0-2 feet bgs) or deep soils (2-15 feet bgs) that exceeded the non-residential statewide health soil MSC. Potential human health exposures for the Facility are for an industrial worker scenario.

Direct contact exposure pathways to shallow soil, groundwater, and LNAPL are being evaluated under the industrial use scenario because PES has documented standards for PPE and procedures for soil excavation and handling. However, because direct contact to soils could occur outside of excavation activities, soil samples were collected to further evaluate the potential for unacceptable risk of exposure.

Compounds that exceeded both the non-residential statewide health standards and EPA RSLs from historical and more recent 2012 and 2013 samples were compared to the PADEP's Non-Residential Direct Contact MSC (Sunoco Soil Screening Procedure for Philadelphia Energy Solutions, Philadelphia Refinery 2013). To maintain conservatism, all soil samples (surface and subsurface) were screened against the more stringent 0-2 feet below grade direct contact criteria regardless of sample depth in the event that soils are re-used elsewhere on the Facility.

The compounds identified for further risk assessment are benzo(a)pyrene and lead. Using the 95UCL, incremental cancer risk attributable to benzo(a)pyrene, and representing the total cumulative excess carcinogenic risk, was calculated to be 2E-06 (Table F-1). The total cumulative cancer risk, in accordance with the TGM, should not exceed 10^{-4}; therefore, carcinogenic risk is below the PADEP's acceptable level and no remedies are required (Appendix F).

Since most lead-based human health effects data are based on blood-lead concentrations instead of external dose, the traditional approach for risk assessment is not applied to characterize exposure to lead. Consequently, exposure to lead is evaluated based on the predicted concentration of lead in the blood and is evaluated separately. A site-specific screening level for lead (1,708 mg/kg) was calculated based on ingestion (Appendix F). Only two shallow soil sample locations had concentrations above the site-specific screening level. Soil sample locations with concentrations above the site-specific screening levels will be delineated and remediated as described in the Clean-up Plan.

6.0 STATUS OF TANKS

Previously-existing and existing regulated above-ground storage tanks (ASTs) in AOI 7 that have been closed-in-place or have a documented release are illustrated in Figure 5. Numerous ASTs were removed from AOI 7 prior to August 5, 1989. Conditions in tank areas where tanks were removed prior to August 5, 1989 are being characterized under the PA One Cleanup Program investigation and are discussed in this Addendum to the AOI 7 SCR/RIR. Tanks in AOI 7 that have been closed-in-place or have had a documented release since August 5, 1989 are summarized in the following table.

Summary of Regulated Storage Tanks in AOI 7
With Documented Releases or Closed-In-Place Since August 5, 1989
PES Facility, Philadelphia, PA

Tank No.	Closure Type	Documented Release (Yes or No)	Additional Comments
GP 270	NA	Yes	November 2009 Corrective Action Report Issued
GP 271	Closed in Place	No	July 2002 Closure Report Issued December 2002 SCR Issued
GP 275	Closed in Place	No	January 2008 Closure Report with no Record of Issuance and no Acknowledgement of Receipt by the PADEP
GP 283	Closed in Place	No	October 2005 Change-In-Service SCR Report Issued
AST LO 1000	Closed in Place	No	July 2007 Closure Report Issued

Notes:
NA = Not Applicable

Based on the summary table above, four tanks in AOI 7 have been closed-in-place. Closure and corrective action documentation for these tanks, consistent with requirements of 25 Pa Code §245.561, was prepared by others and previously submitted to the PADEP for GP 271, GP 283, and AST LO 1000. Closure and corrective action documentation for GP 271 was prepared by Secor International Incorporated (SECOR) in July and December of 2002 and change-in-service

documentation was prepared by SECOR for GP 283 in October 2005. Closure and corrective action documentation for AST LO 1000 was prepared by SECOR in July 2007.

One existing tank (GP 270) has had a previous release. A corrective action report, consistent with requirements of 25 Pa Code §245.301-314, was prepared by Stantec Consulting Corporation (Stantec) and previously submitted to the PADEP. Closure documentation for GP 275 was prepared by SECOR in January 2008. However, there is no record of issuance of this report by Sunoco to the PADEP or acknowledgement of receipt of this report by the PADEP.

This Addendum to the AOI 7 SCR/RIR includes a Supplemental SCR (Appendix E of this Addendum) for tanks GP 270, GP 271, GP 275, GP 283 and AST LO 1000. The purpose of the Supplemental SCR is to document the status of each tank and to summarize the previous and more-recent supplemental closure and/or corrective action work completed by Sunoco in these tank areas.

7.0 CONCLUSIONS

This Addendum addresses the PADEP's comments and presents the actions taken to amend the previously submitted SCR/RIR. Based on the results of the completed activities the following additional conclusions have been developed for AOI 7 to amend those set forth in the previously submitted SCR/RIR:

<u>SOIL</u>

- Concentrations of lead were detected in shallow soil samples above the non-residential soil MSC, and concentrations of 1,3,5-TMB, lead and benzene were detected in deep soils above the non-residential soil MSC. Based on the site characterization activities completed to date, the soil to groundwater pathway has been assessed, and the analytical detections above the non-residential soil MSCs across AOI 7 have been delineated.
- The direct contact pathway for soil greater than 2 feet beneath the ground surface at the facility is incomplete because of PES's on-site procedures and PPE requirements that protect onsite workers from exposure. The soil-to-groundwater pathway was evaluated using shallow groundwater data discussed below.

- Potential exposure within areas above the lead site specific standard of 1,708 mg/kg will be addressed by Sunoco through implementation of a remedy which will either remediate or eliminate the potential pathway to onsite workers to this area. Sunoco will present the remedial activities for this area in the AOI 7 Cleanup Plan.

RCRA SWMUs

- No leaded tank bottom materials were observed in SWMUs 87, 88, 89, 90, and 91. Based on the site characterization activities completed, the soil to groundwater pathway has been assessed, and the analytical detections above the non-residential soil MSCs in SWMU's 87, 88, 89, 90 and 91 have been delineated. Therefore Sunoco is requesting a comfort letter from EPA for these SWMUs.

VAPOR

- The majority of occupied buildings in AOI 7 are under positive pressure. Indoor air samples collected from one building located in AOI 7 not under positive pressure were below OSHA's PELs, EPA Industrial RSLs and PADEP IAQs criteria for the protection of worker health. The potential vapor intrusion pathway for existing buildings is not complete.

ASTs

- As stated in Appendix D (Supplemental Tank SCR) the site assessment and corrective action activities completed for AST's GP-270, GP 271, GP 275, GP 283 and AST LO 1000 has technical fulfilled the requirements of the corrective action process. Therefore, no further corrective action is required for these tanks and they should be "administratively closed out."

TABLES

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP-271-GP-1				GP-271-GP-2				GP-271-GP-3				GP-271-GP-4				GP-271-GP-5				GP-271-GP-6			
							Sample ID	GP-1(0-0.5)				GP-2 (0.5-1.0)				GP-3 (1.5-2.0)				GP-4 (1.5-2.0)				GP-5 (1.5-2.0)				GP-6 (0-0.5)			
							Sample Date	6/4/2002				6/4/2002				6/4/2002				6/4/2002				6/4/2002				6/4/2002			
							Sample Depth	0-0.5				0.5-1				1.5-2				1.5-2				1.5-2				0-0.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND		0.27	1	ND		0.22	1	0.15	J	0.37	1	**2.2**		0.47	1	**1.2**		0.54	1	0.076	J	0.27	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	NA				NA				NA				NA				NA				NA			
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	NA				NA				NA				NA				NA				NA			
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	NA				NA				NA				NA				NA				NA			
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	ND		0.44	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	0.25	J	0.44	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		**16**	1	0.33	J	0.44	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	0.44		0.44	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	ND		0.44	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	0.41	J	0.44	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	0.75		0.65	1	120		16	1	ND		0.44	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND		0.27	1	ND		0.22	1	1.2		0.37	1	1.5		0.47	1	ND		0.54	1	0.19	J	0.27	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND		0.37	1	ND		0.37	1	0.29	J	0.53	1	0.84		0.65	1	110		16	1	0.39	J	0.44	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	11	J	16	1	0.44		0.44	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	AST 283-SB-1				AST 283-SB-3				AST 283-SB-4				AST 283-SB-5				AST 283-CV-1				GP 1002-1002 PIPE-1			
							Sample ID	SB-1_06/28/2005				SB-3_06/28/2005				SB-4_06/28/2005				SB-5_06/28/2005				CV-1_06/28/2005				1002 PIPE-1			
							Sample Date	6/28/2005				6/28/2005				6/28/2005				6/28/2005				6/28/2005				4/7/2006			
							Sample Depth	1-1.5				1-1.5				1-1.5				1-1.5				0-0.5				unknown			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	ND	U	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	ND	U	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	51.44	0.059	J	0.0005	44.88	0.033	J	0.0005	50.92	ND	U	0.0005	46.21	ND	U	0.0005	47.48	ND		**0.52**	5405.4
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	0.17	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		1.3	5405.4
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	0.064	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		0.52	5405.4
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	ND	U	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		1.3	5405.4
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	51.44	ND	U	0.0005	44.88	ND	U	0.0005	50.92	ND	U	0.0005	46.21	ND	U	0.0005	47.48	NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.073	J	0.001	51.44	0.074	J	0.001	44.88	0.2	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		0.52	5405.4
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.46	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	ND		0.014	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND	U	0.033	5	0.26	J	0.033	5	0.92	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.17		0.032	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND	U	0.033	5	0.26	J	0.033	5	0.9	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	1.2		0.048	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND	U	0.033	5	0.32	J	0.033	5	0.85	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.83		0.064	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.62	J	0.033	5	ND	U	0.033	5	0.26	J	0.033	5	13		0.064	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	1.6	J	0.033	5	0.22	J	0.033	5	1.1		0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.65		0.048	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.21	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	2		0.096	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.51	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	0.26	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	4	J	2.6	5405.4
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND	U	0.033	5	0.37	J	0.033	5	0.79	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.16	J	0.048	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND	U	0.033	5	0.48	J	0.033	5	1		0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.53	J	0.11	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	317		0.78	1	97.9		0.78	1	113		0.78	1	81.1		0.78	1	121		0.78	1	NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	13.3		0.5	1	12.5		0.5	1	13.7		0.5	1	15.6		0.5	1	12.1		0.5	1	16.8		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP 1002-1002 PIPE-2				GP 1002-1002-1				GP 1002-1002-2				GP 1002-1002-3				GP-1002-1002				GP 1100-1100-1			
							Sample ID	1002 PIPE-2				1002-1				1002-2				1002-3				1002				1100-1			
							Sample Date	4/7/2006				4/7/2006				4/7/2006				4/7/2006				5/11/2006				5/11/2006			
							Sample Depth	unknown				unknown				unknown				unknown				unknown				unknown			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.16		0.025	250.3	ND		**0.58**	1021.5	**1.4**		0.12	1053.7	ND		0.041	483.6	ND		0.017	26.32	**1**		0.017	21.89
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.27		0.063	250.3	2.2		0.3	1021.5	6.8		0.31	1053.7	1.9		0.13	483.6	ND		0.034	26.32	0.042	J	0.035	21.89
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.047	J	0.025	250.3	0.63		0.12	1021.5	1.9		0.12	1053.7	0.56		0.052	483.6	ND		0.034	26.32	0.59		0.035	21.89
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.064	J	0.063	250.3	5.8		0.3	1021.5	12		0.31	1053.7	6.2		0.13	483.6	0.52		0.034	26.32	0.18		0.035	21.89
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.12		0.025	250.3	0.6		0.12	1021.5	1.2		0.12	1053.7	0.23		0.052	483.6	ND		0.034	26.32	ND		0.035	21.89
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.076	J	0.015	1	9.1		0.17	10	5.5		0.18	10	8.9		0.16	10	4.8		0.21	1	82		5.3	10
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.31		0.033	1	6.1		0.39	10	3		0.39	10	5.4		0.36	10	2.9		0.21	1	16		0.53	10
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	1.2		0.05	1	5.8		0.58	10	2.8	J	0.59	10	4.9		0.54	10	2.3		0.21	1	9.7		0.53	10
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	1		0.067	1	4.8		0.77	10	2.5	J	0.79	10	5.5		0.72	10	2.6		0.21	1	9.3		0.53	10
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	5.7		0.067	1	6		0.77	10					5.5		0.72	10	1.6		0.21	1	4.2		0.53	10
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	0.33	J	0.05	1	11		0.58	10	6.6		0.59	10	11		0.54	10	3.6		0.21	1	29		0.53	10
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	0.47	J	0.1	1	22		1.2	10	20		1.2	10	20		1.1	10	6.3		0.21	1	210		5.3	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				3.2		0.53	10
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	2.5		0.13	250.3	14		0.59	1021.5	**30**		0.62	1053.7	4.5		0.26	483.6	0.043	J	0.034	26.32	0.099	J	0.035	21.89
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.85		0.05	1	41		0.58	10	26		0.59	10	36		0.54	10	13		0.21	1	620		5.3	10
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	1.3		0.12	1	14		1.4	10	34		1.4	10	16		1.3	10	7.3		0.21	1	60		0.53	10
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	20.3		0.5	1	31.1		0.5	1	32.1		0.5	1	26.2		0.5	1	22		0.5	1	36.9		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP 1100-1100-2				GP 1100-1100-3				GP 1100-1100-CV-1				GP 1100-1100-CV-2				GP 1100-1100-CV-3				GP 1100-1100-ELBOW			
							Sample ID	1100-2				1100-3				1100-CV-1				1100-CV-2				1100-CV-3				1100-ELBOW			
							Sample Date	5/11/2006				5/11/2006				5/11/2006				5/11/2006				5/11/2006				5/11/2006			
							Sample Depth	unknown				unknown				unknown				unknown				unknown				unknown			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.097	J	0.017	22.14	0.25		0.021	25.35	0.017	J	0.015	24.06	ND		0.016	24.8	ND		0.015	24.85	0.16	J	0.017	25.46
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.13	J	0.034	22.14	0.11	J	0.042	25.35	ND		0.03	24.06	0.18		0.031	24.8	0.031	J	0.03	24.85	0.12	J	0.033	25.46
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.28		0.034	22.14	0.33		0.042	25.35	ND		0.03	24.06	ND		0.031	24.8	ND		0.03	24.85	ND		0.033	25.46
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.09	J	0.034	22.14	0.076	J	0.042	25.35	ND		0.03	24.06	ND		0.031	24.8	ND		0.03	24.85	ND		0.033	25.46
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND		0.034	22.14	ND		0.042	25.35	ND		0.03	24.06	ND		0.031	24.8	ND		0.03	24.85	0.25		0.033	25.46
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	21		0.26	10	32		0.55	10	NA				41		0.42	5	0.84	J	0.41	1	1.6	J	0.43	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	3.8		0.26	10	8.2		0.55	10	NA				26		0.42	5	0.63	J	0.41	1	0.89	J	0.43	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	2.6		0.26	10	3.8		0.55	10	NA				**13**		0.42	5	0.79	J	0.41	1	1.2	J	0.43	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	2.6		0.26	10	4		0.55	10	NA				8.5		0.42	5	0.81	J	0.41	1	0.87	J	0.43	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	1.9		0.26	10	2.4	J	0.55	10	NA				6.2		0.42	5	3.4		0.41	1	1.8	J	0.43	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	7.1		0.26	10	22		0.55	10	NA				41		0.42	5	2.3		0.41	1	3		0.43	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	64		2.6	10	160		5.5	10	NA				59		2.1	5	ND		0.41	1	1.1		0.43	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	1.5		0.26	10	1.8	J	0.55	10	NA				4		0.42	5	1.5	J	0.41	1	1.2	J	0.43	1
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.35		0.034	22.14	1.2		0.042	25.35	0.18		0.03	24.06	0.18		0.031	24.8	0.054	J	0.03	24.85	0.048	J	0.033	25.46
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	180		2.6	10	440		5.5	10	NA				160		2.1	5	0.63	J	0.41	1	2.6		0.43	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	17		0.26	10	41		0.55	10	NA				78		2.1	5	1	J	0.41	1	2.9		0.43	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	35.3		0.5	1	39.3		0.5	1	19.3		0.5	1	20.8		0.5	1	17.9		0.5	1	23.3		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP 1100-1100-JOINTS				GP 1100-1100CV-1				GP-275-LINE1				GP-275-LINE2				GP-275-LINE3				GP-275-LINE4			
							Sample ID	1100-JOINTS				1100CV-1				GP-275-LINE1				GP-275-LINE2				GP-275-LINE3				GP-275-LINE4			
							Sample Date	5/11/2006				6/19/2006				5/25/2007				5/25/2007				5/25/2007				5/25/2007			
							Sample Depth	unknown				unknown				0-0.5				0-0.5				0-0.5				0-0.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.33		0.019	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	86		0.38	286.7	NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	1.3		0.038	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	2.6		0.038	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	5.6		0.038	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	7.4		0.44	1	5.6		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	5		0.44	1	10		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	2.3		0.44	1	6.8		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	1.8	J	0.44	1	7.9		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	3.3		0.44	1	3.8		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	8.2		0.44	1	16		0.2	2	0.23	J	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	16		0.44	1	11		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	1.6	J	0.44	1	2.7		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	5.6		0.038	286.7	NA				0.23	JD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	31		0.44	1	22		0.2	2	0.56		0.34	1	0.21	J	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	13		0.44	1	31		0.41	2	0.33	J	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	24.7		0.5	1	18.1		0.0005	1	NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP-277-LINE1				GP-277-LINE2				GP-277-LINE3				LO-1000-LINE-1				LO-1000-LINE-2				LO-1000-LINE-3			
							Sample ID	GP-277-LINE1				GP-277-LINE2				GP-277-LINE3				LO-1000-LINE-1				LO-1000-LINE-2				LO-1000-LINE-3			
							Sample Date	5/25/2007				5/25/2007				5/25/2007				5/30/2007				5/30/2007				5/30/2007			
							Sample Depth	0-0.5				0-0.5				0-0.5				0-0.5				0-0.5				0-0.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	**2.3**	D	0.23	50	ND	UD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.68	D	0.23	50	ND	UD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.12	JD	0.23	50	ND	UD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	1.7	D	0.23	50	0.098	JD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.36	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.73	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	0.76	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	0.83	D	0.72	1	ND	U	0.36	1	0.26	J	0.38	1	NA				NA				NA			
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	0.63	JD	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	1.7	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	UD	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	0.46	JD	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.58	D	0.23	50	0.13	JD	0.14	50	0.13	JD	0.16	50	NA				NA				NA			
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.86	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	2.5	D	0.72	1	ND	U	0.36	1	0.3	J	0.38	1	NA				NA				NA			
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				65	B	650	1	820		540	1	110	B	620	1
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	LO-1000-LINE-4				BH-10-09				GP-270-S-6				GP-270-S-11				GP-270-S-13				GP-270-S-14			
							Sample ID	LO-1000-LINE-4				BH-10-09				S-6_09/29/2009				S-11_10/06/2009				S-13_10/06/2009				S-14_10/06/2009			
							Sample Date	5/30/2007				4/6/2009				9/29/2009				10/6/2009				10/6/2009				10/6/2009			
							Sample Depth	0-0.5				0-2				1.5-2				1.5-2				1-1.5				1-1.5			
							Sample Purpose	Site Characterization				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	0.13	J	0.001	75.2
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	ND	U	0.001	75.2
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	NA				NA				ND	U	0.0005	58.69	0.12	J	0.0005	54.42	ND	U	0.0005	74.76	ND	U	0.0005	75.2
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	NA				NA				ND	U	0.001	58.69	0.083	J	0.001	54.42	0.14	J	0.001	74.76	0.19	J	0.001	75.2
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	ND	U	0.001	75.2
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	ND	U	0.001	75.2
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	NA				NA				0.36	J	0.001	58.69	0.4		0.001	54.42	0.4	J	0.001	74.76	0.28	J	0.001	75.2
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	NA				NA				7.5		0.033	10	0.89	J	0.033	10	1.1	J	0.033	10	1.1	J	0.033	10
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	NA				NA				8.8		0.033	10	1.6	J	0.033	10	1.8	J	0.033	10	1.9	J	0.033	10
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	NA				NA				7.1		0.033	10	1.6	J	0.033	10	2.4	J	0.033	10	2.5	J	0.033	10
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	NA				NA				8.6		0.033	10	2		0.033	10	2.8		0.033	10	3		0.033	10
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	NA				NA				3.7		0.033	10	1.1	J	0.033	10	1.9	J	0.033	10	2.3	J	0.033	10
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	NA				NA				11		0.033	10	1.9	J	0.033	10	1.9	J	0.033	10	1.9	J	0.033	10
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	NA				NA				7.3		0.033	10	0.65	J	0.033	10	ND	U	0.033	10	ND	U	0.033	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				3.1		0.033	10	0.96	J	0.033	10	1.6	J	0.033	10	1.9	J	0.033	10
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	NA				NA				0.41	J	0.001	58.69	0.29	J	0.001	54.42	0.67		0.001	74.76	0.8		0.001	75.2
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	NA				NA				17		0.033	10	1.7	J	0.033	10	3		0.033	10	2.5	J	0.033	10
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	NA				NA				23		0.033	10	3.5		0.033	10	2	J	0.033	10	2.3	J	0.033	10
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				441		0.015	10	450		0.591	1	99.9		0.591	1	330		0.591	1	366		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	46	B	570	1	NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				14.7		0.5	1	44.9		0.5	1	15		0.5	1	35.9		0.5	1	33.8		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP-270-S-15				C-140				C-138				C-137				C-136				C-129			
							Sample ID	S-15_10/06/2009				C-140_1-2				C-138_1-2				C-137_1-2				C-136_1-2				C-129_1-2			
							Sample Date	10/6/2009				5/26/2010				5/27/2010				5/27/2010				5/28/2010				6/2/2010			
							Sample Depth	1.5-2				1-2				1-2				1-2				1-2				1-2			
							Sample Purpose	Tank Closure				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	0.16	J	0.001	70.84	ND	U	0.001	0.85	0.014		0.001	1.53	ND	U	0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				ND	U	0.001	0.85	ND	U	0.001	1.53	ND	U	0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				ND	U	0.001	0.85	ND	U	0.001	1.53	ND	U	0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	70.84	ND	U	0.001	0.85	0.007	J	0.001	1.53	ND	U	0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.11	J	0.0005	70.84	ND	U	0.0005	0.85	0.012	J	0.0005	1.53	ND	U	0.0005	0.76	0.007		0.0005	0.87	0.003	J	0.0005	0.93
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.64		0.001	70.84	ND	U	0.001	0.85	0.072		0.001	1.53	ND	U	0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.19	J	0.001	70.84	ND	U	0.001	0.85	0.014		0.001	1.53	ND	U	0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	70.84	ND	U	0.001	0.85	0.003	J	0.001	1.53	0.009		0.001	0.76	ND	U	0.001	0.87	ND	U	0.001	0.93
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				ND	U	0.0005	0.85	ND	U	0.0005	1.53	ND	U	0.0005	0.76	ND	U	0.0005	0.87	ND	U	0.0005	0.93
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.63		0.001	70.84	ND	U	0.001	0.85	0.054		0.001	1.53	ND	U	0.001	0.76	0.008		0.001	0.87	0.012		0.001	0.93
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	4.4		0.033	10	0.38		0.033	1	0.094	J	0.033	1	1.9		0.033	1	ND	U	0.033	1	0.83		0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	5.8		0.033	10	1.2		0.033	1	0.24	J	0.033	1	2.3		0.033	1	0.37		0.033	1	1.9		0.033	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	6.5		0.033	10	1.2		0.033	1	0.2	J	0.033	1	1.9		0.033	1	0.38		0.033	1	2.3		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	7.5		0.033	10	1.4		0.033	1	0.32		0.033	1	2.2		0.033	1	0.55		0.033	1	3.1		0.033	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	4.6		0.033	10	1		0.033	1	0.15	J	0.033	1	1.3		0.033	1	0.39		0.033	1	0.87		0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	7.3		0.033	10	1.3		0.033	1	0.3		0.033	1	2.3		0.033	1	0.41		0.033	1	1.8		0.033	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	3.2		0.033	10	ND	U	0.033	1	ND	U	0.033	1	1.8		0.033	1	ND	U	0.033	1	0.28		0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	3.6		0.033	10	NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.43	J	0.001	70.84	0.47		0.033	1	0.11	J	0.033	1	5.4		0.033	10	0.55		0.033	1	4.2		0.033	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	4.9		0.033	10	0.99		0.033	1	0.24	J	0.033	1	4.4		0.033	10	0.36		0.033	1	2.6		0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	15		0.033	10	1.9		0.033	1	0.36		0.033	1	ND	U	0.033	1	0.44		0.033	1	3.6		0.033	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	386		0.591	1	98.6		0.02	5	103		0.02	2	251		0.02	5	218		0.02	10	252		0.005	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	35.5		0.5	1	12.9		0.5	1	35.1		0.5	1	20.5		0.5	1	9.7		0.5	1	21.4		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	C-130				C-139				C-131				C-142				C-143				BH-10-23			
							Sample ID	C-130_1-2				C-139_1-2				C-131_1-2				C-142_1-2				C-143_1-2				BH-10-23_1.0-1.5			
							Sample Date	6/2/2010				6/2/2010				6/3/2010				6/3/2010				6/3/2010				6/7/2010			
							Sample Depth	1-2				1-2				1-2				1-2				1-2				1-1.5			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	0.18	J	0.001	54.59	0.25	J	0.001	62.48	ND	U	0.001	1.48
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	ND	U	0.001	54.59	ND	U	0.001	62.48	ND	U	0.001	1.48
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	ND	U	0.001	54.59	ND	U	0.001	62.48	ND	U	0.001	1.48
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	0.09	J	0.001	54.59	0.24	J	0.001	62.48	ND	U	0.001	1.48
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	0.81	ND	U	0.0005	0.8	ND	U	0.0005	0.94	0.1	J	0.0005	54.59	**2**		0.0005	62.48	0.019		0.0005	1.48
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	0.22	J	0.001	54.59	0.57		0.001	62.48	0.003	J	0.001	1.48
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	0.072	J	0.001	54.59	0.15	J	0.001	62.48	ND	U	0.001	1.48
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	ND	U	0.001	0.94	0.078	J	0.001	54.59	5.6		0.001	62.48	ND	U	0.001	1.48
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	0.81	ND	U	0.0005	0.8	0.017		0.0005	0.94	ND	U	0.0005	54.59	ND	U	0.0005	62.48	ND	U	0.0005	1.48
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	0.81	ND	U	0.001	0.8	0.003	J	0.001	0.94	0.63		0.001	54.59	0.22	J	0.001	62.48	0.01		0.001	1.48
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	2.7		0.033	10	ND	U	0.033	1	0.94	J	0.033	5	2		0.033	5	0.17	J	0.033	1	0.052	J	0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	9.6		0.033	10	ND	U	0.033	1	1.3		0.033	5	3.1		0.033	5	0.42		0.033	1	0.2		0.033	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	8.4		0.033	10	ND	U	0.033	1	1.5		0.033	5	3.4		0.033	5	0.52		0.033	1	0.24		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	11		0.033	10	ND	U	0.033	1	2.2		0.033	5	4.8		0.033	5	0.62		0.033	1	0.32		0.033	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	4.9		0.033	10	ND	U	0.033	1	0.64	J	0.033	5	1.3		0.033	5	0.43		0.033	1	0.14	J	0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	8.7		0.033	10	ND	U	0.033	1	1.6		0.033	5	2.9		0.033	5	0.6		0.033	1	0.21		0.033	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.033	10	ND	U	0.033	1	0.35	J	0.033	5	1.6		0.033	5	0.062	J	0.033	1	ND	U	0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.033	10	ND	U	0.033	1	6.5		0.033	5	2		0.033	5	0.27		0.033	1	0.11	J	0.033	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	7.3		0.033	10	ND	U	0.033	1	2.9		0.033	5	7.1		0.033	5	0.49		0.033	1	0.17	J	0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	13		0.033	10	0.25		0.033	1	1.9		0.033	5	5.9		0.033	5	0.93		0.033	1	0.31		0.033	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	**814**		0.005	40	98.7		0.02	2	396		0.005	10	**1370**		0.005	40	164		0.005	10	**623**		0.005	20
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	14.3		0.5	1	9.5		0.5	1	24.2		0.5	1	10.9		0.5	1	6.2		0.5	1	8.8		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	BH-10-24				BH-10-25				BH-10-26				BH-10-28				BH-10-29				BH-10-30			
							Sample ID	BH-10-24_1.0-1.5				BH-10-25_1.2-1.7				BH-10-26_1.5-2.0				BH-10-28_1.5-2.0				BH-10-29_0.7-1.2				BH-10-30_1.5-2.0			
							Sample Date	6/7/2010				6/7/2010				6/7/2010				6/7/2010				6/7/2010				6/7/2010			
							Sample Depth	1-1.5				1.2-1.7				1.5-2				1.5-2				0.7-1.2				1.5-2			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	0.83		0.001	66.83	0.2	J	0.001	66.14	ND	U	0.001	0.92	**280**		0.001	6010.08	ND	U	0.001	0.99	0.24	J	0.001	69
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	66.83	ND	U	0.001	66.14	ND	U	0.001	0.92	ND	U	0.001	60.1	ND	U	0.001	0.99	ND	U	0.001	69
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	66.83	ND	U	0.001	66.14	ND	U	0.001	0.92	ND	U	0.001	60.1	ND	U	0.001	0.99	ND	U	0.001	69
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	0.34	J	0.001	66.83	ND	U	0.001	66.14	ND	U	0.001	0.92	**130**		0.001	601.01	ND	U	0.001	0.99	ND	U	0.001	69
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.094	J	0.0005	66.83	**31**		0.0005	661.42	0.003	J	0.0005	0.92	**1.6**		0.0005	60.1	0.01		0.0005	0.99	0.38	J	0.0005	69
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.89		0.001	66.83	1.3		0.001	66.14	ND	U	0.001	0.92	250		0.001	601.01	0.006		0.001	0.99	0.81		0.001	69
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.78		0.001	66.83	0.51		0.001	66.14	ND	U	0.001	0.92	27		0.001	601.01	ND	U	0.001	0.99	0.29	J	0.001	69
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.28	J	0.001	66.83	ND	U	0.001	66.14	ND	U	0.001	0.92	2.1		0.001	60.1	ND	U	0.001	0.99	ND	U	0.001	69
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	66.83	ND	U	0.0005	66.14	ND	U	0.0005	0.92	ND	U	0.0005	60.1	ND	U	0.0005	0.99	ND	U	0.0005	69
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.18	J	0.001	66.83	2.8		0.001	66.14	0.002	J	0.001	0.92	6.5		0.001	60.1	0.028		0.001	0.99	1.7		0.001	69
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.083	J	0.033	1	0.45		0.033	1	3.6		0.033	1	ND	U	0.033	10	ND	U	0.033	1	1		0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.27		0.033	1	0.36		0.033	1	5.8		0.033	5	0.61	J	0.033	10	0.21		0.033	1	1.3		0.033	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	0.31		0.033	1	0.38		0.033	1	4.3		0.033	1	0.6	J	0.033	10	0.23		0.033	1	1.5		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	0.43		0.033	1	0.77		0.033	1	6.1		0.033	5	1.3	J	0.033	10	0.36		0.033	1	2.3		0.033	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	0.18		0.033	1	0.27		0.033	1	1.2		0.033	1	0.64	J	0.033	10	ND	U	0.033	1	0.74		0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	0.28		0.033	1	0.44		0.033	1	5.4		0.033	5	0.68	J	0.033	10	0.24		0.033	1	1.6		0.033	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	0.08	J	0.033	1	0.17	J	0.033	1	1.1		0.033	1	0.59	J	0.033	10	ND	U	0.033	1	0.5		0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	1.4		0.033	1	5.5		0.033	1	3.3		0.033	1	**30**		0.033	10	0.2		0.033	1	11		0.033	5
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.48		0.033	1	1.6		0.033	1	2.8		0.033	1	1.8	J	0.033	10	0.21		0.033	1	2.9		0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	0.44		0.033	1	0.54		0.033	1	8.2		0.033	5	1.3	J	0.033	10	0.29		0.033	1	1.7		0.033	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	411		0.005	10	79.4		0.005	2	**2040**		0.005	50	155		0.005	5	395		0.005	10	250		0.005	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	8		0.5	1	32.1		0.5	1	19.3		0.5	1	19.4		0.5	1	9.2		0.5	1	21.2		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	BH-10-20				BH-10-21				BH-10-22				BH-10-27				BH-10-31				BH-10-32			
							Sample ID	BH-10-20_1.3-1.8				BH-10-21_1.0-1.5				BH-10-22_1.5-2.0				BH-10-27_1.5-2.0				BH-10-31_1.5-2.0				BH-10-32_0.5-1.0			
							Sample Date	6/8/2010				6/8/2010				6/8/2010				6/8/2010				6/8/2010				6/8/2010			
							Sample Depth	1.3-1.7				1-1.5				1.5-2				1.5-2				1.5-2				0.5-1			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	1.01	ND	U	0.001	1.06	ND	U	0.001	1.16	16		0.001	720.59	1.1		0.001	68.05	0.002	J	0.001	0.93
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	1.01	ND	U	0.001	1.06	ND	U	0.001	1.16	ND	U	0.001	720.59	ND	U	0.001	68.05	ND	U	0.001	0.93
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	1.01	ND	U	0.001	1.06	ND	U	0.001	1.16	ND	U	0.001	720.59	ND	U	0.001	68.05	ND	U	0.001	0.93
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	1.01	ND	U	0.001	1.06	ND	U	0.001	1.16	8		0.001	720.59	0.45	J	0.001	68.05	ND	U	0.001	0.93
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.003	J	0.0005	1.01	ND	U	0.0005	1.06	0.005	J	0.0005	1.16	ND	U	0.0005	720.59	0.47	J	0.0005	68.05	0.004	J	0.0005	0.93
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	1.01	0.001	J	0.001	1.06	0.002	J	0.001	1.16	9		0.001	720.59	3.8		0.001	68.05	0.009		0.001	0.93
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	1.01	ND	U	0.001	1.06	ND	U	0.001	1.16	2.4	J	0.001	720.59	0.63		0.001	68.05	ND	U	0.001	0.93
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	1.01	ND	U	0.001	1.06	ND	U	0.001	1.16	6.5		0.001	720.59	0.17	J	0.001	68.05	ND	U	0.001	0.93
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	1.01	ND	U	0.0005	1.06	ND	U	0.0005	1.16	ND	U	0.0005	720.59	ND	U	0.0005	68.05	ND	U	0.0005	0.93
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.001	J	0.001	1.01	ND	U	0.001	1.06	0.014		0.001	1.16	1.7	J	0.001	720.59	1.7		0.001	68.05	0.007		0.001	0.93
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.88		0.033	1	2.9		0.033	1	0.79		0.033	1	2.6		0.033	10	0.82		0.033	1	0.13	J	0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	1.8		0.033	1	4.4		0.033	1	1.1		0.033	1	3.4		0.033	10	0.61		0.033	1	0.18	J	0.033	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	1.7		0.033	1	3.8		0.033	1	1.1		0.033	1	3.8		0.033	10	0.61		0.033	1	0.21		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	2.3		0.033	1	4.5		0.033	1	1.6		0.033	1	5.5		0.033	10	0.91		0.033	1	0.27		0.033	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	1.4		0.033	1	2.9		0.033	1	1.2		0.033	1	3.4		0.033	10	0.66		0.033	1	0.25		0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	1.7		0.033	1	4.7		0.033	1	1.3		0.033	1	4.4		0.033	10	0.8		0.033	1	0.27		0.033	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	0.32		0.033	1	0.97		0.033	1	0.25		0.033	1	1.7	J	0.033	10	0.32		0.033	1	ND	U	0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	1.2		0.033	1	9.2		0.033	10	3.7		0.033	1	21		0.033	10	7.3		0.033	10	0.64		0.033	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	2.6		0.033	1	4.2		0.033	1	2		0.033	1	8.9		0.033	10	2.5		0.033	1	0.3		0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	2.8		0.033	1	7.7		0.033	10	1.5		0.033	1	6.5		0.033	10	0.77		0.033	1	0.29		0.033	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	179		0.005	5	**869**		0.005	20	304		0.005	10	393		0.005	10	**610**		0.005	10	298		0.005	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	10.7		0.5	1	24.7		0.5	1	12.2		0.5	1	21.6		0.5	1	30.6		0.5	1	17.6		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	BH-10-33				BH-10-34				BH-10-35				BH-10-05				BH-10-06				BH-10-13			
							Sample ID	BH-10-33_1.5-2.0				BH-10-34_1.0-1.5				BH-10-35_1.3-1.7				BH-10-05_1.5-2.0				BH-10-06_1.2-1.7				BH-10-13_1.5-2.0			
							Sample Date	6/8/2010				6/8/2010				6/8/2010				6/9/2010				6/9/2010				6/9/2010			
							Sample Depth	1.5-2				1-1.5				1.3-1.7				1.5-2				1.2-1.7				1.5-2			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	0.007	J	0.001	1.36	0.002	J	0.001	0.98	ND	U	0.001	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	ND	U	0.001	1.36	ND	U	0.001	0.98	ND	U	0.001	1
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	ND	U	0.001	1.36	ND	U	0.001	0.98	ND	U	0.001	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	0.006	J	0.001	1.36	ND	U	0.001	0.98	ND	U	0.001	1
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	0.93	ND	U	0.0005	0.97	ND	U	0.0005	0.83	0.003	J	0.0005	1.36	0.0007	J	0.0005	0.98	0.002	J	0.0005	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	0.017		0.001	1.36	ND	U	0.001	0.98	ND	U	0.001	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	0.002	J	0.001	1.36	ND	U	0.001	0.98	ND	U	0.001	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	0.004	J	0.001	1.36	ND	U	0.001	0.98	ND	U	0.001	1
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	0.93	ND	U	0.0005	0.97	ND	U	0.0005	0.83	ND	U	0.0005	1.36	ND	U	0.0005	0.98	ND	U	0.0005	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	0.93	ND	U	0.001	0.97	ND	U	0.001	0.83	0.005	J	0.001	1.36	0.002	J	0.001	0.98	0.003	J	0.001	1
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.29		0.033	1	0.54		0.033	1	0.87		0.033	1	1.6		0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.79		0.033	1	1.1		0.033	1	1.9		0.033	1	5		0.033	10
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.82		0.033	1	1		0.033	1	1.9		0.033	1	4.2		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.84		0.033	1	1.3		0.033	1	2.5		0.033	1	5.7		0.033	10
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.61		0.033	1	0.96		0.033	1	1.6		0.033	1	2.9		0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.85		0.033	1	1.1		0.033	1	2		0.033	1	4.6		0.033	10
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.033	1	ND	U	0.033	1	ND	U	0.033	1	0.34		0.033	1	0.36		0.033	1	0.53		0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.033	1	ND	U	0.033	1	ND	U	0.033	1	1		0.033	1	3.3		0.033	1	1		0.033	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND	U	0.033	1	ND	U	0.033	1	0.84		0.033	1	1.2		0.033	1	2.3		0.033	1	4.5		0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND	U	0.033	1	0.19		0.033	1	1.7		0.033	1	1.7		0.033	1	2.8		0.033	1	7.3		0.033	10
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	43.1		0.005	2	84.2		0.005	2	92.5		0.005	2	411		0.005	10	266		0.005	10	320		0.005	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	9.1		0.5	1	9.4		0.5	1	9.7		0.5	1	14.6		0.5	1	20.4		0.5	1	11.8		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	BH-10-14				BH-10-15				BH-10-16				BH-10-17				BH-10-18				BH-10-19			
							Sample ID	BH-10-14_1.5-2.0				BH-10-15_1.4-1.9				BH-10-16_1.5-2.0				BH-10-17_1.5-2.0				BH-10-18_1.5-2.0				BH-10-19_0.5-1.0			
							Sample Date	6/9/2010				6/9/2010				6/9/2010				6/9/2010				6/9/2010				6/9/2010			
							Sample Depth	1.5-2				1.4-1.9				1.5-2				1.5-2				1.5-2				0.5-1			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	0.29	J	0.001	69.08	ND	U	0.001	1.03	0.24	J	0.001	133.55	4.4		0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	69.08	ND	U	0.001	1.03	ND	U	0.001	133.55	ND	U	0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	69.08	ND	U	0.001	1.03	ND	U	0.001	133.55	ND	U	0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	0.12	J	0.001	69.08	ND	U	0.001	1.03	ND	U	0.001	133.55	2.4		0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.26	J	0.0005	69.08	0.004	J	0.0005	1.03	**0.85**	J	0.0005	133.55	0.46		0.0005	52.52	0.0008	J	0.0005	1.1	ND	U	0.0005	0.87
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	1.1		0.001	69.08	ND	U	0.001	1.03	0.69	J	0.001	133.55	7.5		0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.22	J	0.001	69.08	ND	U	0.001	1.03	ND	U	0.001	133.55	0.8		0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	69.08	ND	U	0.001	1.03	9.1		0.001	133.55	0.3		0.001	52.52	ND	U	0.001	1.1	ND	U	0.001	0.87
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	69.08	ND	U	0.0005	1.03	ND	U	0.0005	133.55	ND	U	0.0005	52.52	ND	U	0.0005	1.1	ND	U	0.0005	0.87
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.95		0.001	69.08	0.002	J	0.001	1.03	0.34	J	0.001	133.55	2.3		0.001	52.52	0.002	J	0.001	1.1	ND	U	0.001	0.87
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	1		0.033	1	0.57		0.033	1	1.9	J	0.033	10	0.57		0.033	1	1		0.033	1	0.67		0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	1.3		0.033	1	1.7		0.033	1	3.5		0.033	10	0.58		0.033	1	1.4		0.033	1	2.1		0.033	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	1.2		0.033	1	1.4		0.033	1	2.8		0.033	10	0.51		0.033	1	1.5		0.033	1	2.3		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	1.6		0.033	1	2		0.033	1	3.5		0.033	10	0.54		0.033	1	1.7		0.033	1	3.1		0.033	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	1.1		0.033	1	0.97		0.033	1	2.2	J	0.033	10	0.32		0.033	1	1.2		0.033	1	2.5		0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	1.4		0.033	1	1.6		0.033	1	4.7		0.033	10	0.93		0.033	1	1.6		0.033	1	2.2		0.033	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	0.41		0.033	1	0.23		0.033	1	ND	U	0.033	10	0.9		0.033	1	0.53		0.033	1	0.19		0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	4.9		0.033	10	0.31		0.033	1	ND	U	0.033	10	1.4		0.033	1	3.1		0.033	1	ND	U	0.033	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	2.6		0.033	1	2.4		0.033	1	11		0.033	10	2.3		0.033	1	2.4		0.033	1	2.5		0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	1.8		0.033	1	2.7		0.033	1	8		0.033	10	1.4		0.033	1	2.4		0.033	1	3.5		0.033	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	**531**		0.005	25	280		0.005	10	**616**		0.005	20	47.8		0.005	2	**478**		0.005	10	365		0.005	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	14.3		0.5	1	11.3		0.5	1	23.9		0.5	1	8.3		0.5	1	23.4		0.5	1	9.3		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	BH-10-07				BH-10-08				BH-10-09				BH-10-10				BH-10-11				BH-10-12			
							Sample ID	BH-10-07_1.0-1.5				BH-10-08_1.5-2.0				BH-10-09_1.2-1.7				BH-10-10_1.5-2.0				BH-10-11_1.5-2.0				BH-10-12_1.5-2.0			
							Sample Date	6/10/2010				6/10/2010				6/10/2010				6/10/2010				6/10/2010				6/10/2010			
							Sample Depth	1-1.5				1.5-2				1.2-1.7				1.5-2				1.5-2				1.5-2			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	0.9	0.21	J	0.001	66.74	ND	U	0.001	1.05	0.89		0.001	78.47	0.43		0.001	46.25	0.006	J	0.001	1.12
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	0.9	ND	U	0.001	66.74	ND	U	0.001	1.05	ND	U	0.001	78.47	ND	U	0.001	46.25	ND	U	0.001	1.12
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	0.9	ND	U	0.001	66.74	ND	U	0.001	1.05	ND	U	0.001	78.47	ND	U	0.001	46.25	ND	U	0.001	1.12
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	0.9	ND	U	0.001	66.74	ND	U	0.001	1.05	0.099	J	0.001	78.47	0.085	J	0.001	46.25	0.003	J	0.001	1.12
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	0.9	0.37	J	0.0005	66.74	0.002	J	0.0005	1.05	0.16	J	0.0005	78.47	0.056	J	0.0005	46.25	0.004	J	0.0005	1.12
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	0.9	0.69		0.001	66.74	0.002	J	0.001	1.05	0.57		0.001	78.47	0.3		0.001	46.25	0.007		0.001	1.12
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	0.9	0.15	J	0.001	66.74	ND	U	0.001	1.05	0.18	J	0.001	78.47	0.09	J	0.001	46.25	ND	U	0.001	1.12
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	0.9	27		0.001	66.74	ND	U	0.001	1.05	0.18	J	0.001	78.47	ND	U	0.001	46.25	ND	U	0.001	1.12
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	0.9	ND	U	0.0005	66.74	ND	U	0.0005	1.05	ND	U	0.0005	78.47	ND	U	0.0005	46.25	ND	U	0.0005	1.12
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	0.9	0.12	J	0.001	66.74	0.003	J	0.001	1.05	0.7		0.001	78.47	0.19	J	0.001	46.25	0.007	J	0.001	1.12
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.033	10	2.5		0.033	10	1.5		0.033	1	1.2		0.033	1	1.3		0.033	1	1.7		0.033	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND	U	0.033	10	2.6		0.033	10	2.6		0.033	1	1.4		0.033	1	3.3		0.033	1	2.4		0.033	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND	U	0.033	10	2.2	J	0.033	10	2.7		0.033	1	1.4		0.033	1	2.7		0.033	1	2.1		0.033	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND	U	0.033	10	2.1	J	0.033	10	3.4		0.033	1	1.7		0.033	1	3.6		0.033	1	2.7		0.033	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND	U	0.033	10	1.6	J	0.033	10	1.9		0.033	1	1		0.033	1	1.4		0.033	1	1.5		0.033	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	ND	U	0.033	10	8.3		0.033	10	2.6		0.033	1	1.8		0.033	1	3.4		0.033	1	2.5		0.033	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.033	10	35		0.033	10	0.57		0.033	1	0.93		0.033	1	0.64		0.033	1	1.3		0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.033	10	ND	U	0.033	10	4.6		0.033	1	3.3		0.033	1	1.5		0.033	1	3.8		0.033	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND	U	0.033	10	20		0.033	10	3.4		0.033	1	2		0.033	1	2.9		0.033	1	3.8		0.033	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND	U	0.033	10	8.9		0.033	10	3.2		0.033	1	3		0.033	1	6.6		0.033	10	4.5		0.033	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	305		0.005	10	444		0.005	10	**1230**		0.005	25	**725**		0.005	20	184		0.005	5	414		0.005	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	13		0.5	1	27.3		0.5	1	20.9		0.5	1	15.7		0.5	1	12.6		0.5	1	15.9		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	S-135				AOI7 BH-12-91				AOI7 BH-12-92				AOI7 BH-12-94				AOI7 BH-12-87				AOI7 BH-12-85			
							Sample ID	S-135_0-2				BH-12-91_0.5'				BH-12-92_0.5'				BH-12-94_1.0'				BH-12-87_1.0'				BH-12-85_1.5'			
							Sample Date	6/10/2010				11/27/2012				11/27/2012				11/27/2012				11/27/2012				11/27/2012			
							Sample Depth	0-2				0-0.5				0-0.5				0.5-1				0.5-1				1-1.5			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	0.88	ND	U	0.0044	1	ND	U	0.0041	1	ND	U	0.0058	1	ND	U	0.0062	1	ND	U	0.0078	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	0.88	ND	U	0.0044	1	ND	U	0.0041	1	ND	U	0.0058	1	ND	U	0.0062	1	ND	U	0.0078	1
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	0.88	ND	U	0.0044	1	ND	U	0.0041	1	ND	U	0.0058	1	ND	U	0.0062	1	ND	U	0.0078	1
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	0.88	ND	U	0.00088	1	ND	U	0.00083	1	ND	U	0.0012	1	ND	U	0.0012	1	ND	U	0.0016	1
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.033	1	0.0677		0.038	1	ND	U	0.034	1	0.162		0.036	1	0.223		0.041	1	0.0562		0.043	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND	U	0.033	1	0.401		0.038	1	ND	U	0.034	1	0.816		0.036	1	0.67		0.041	1	0.128		0.043	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND	U	0.033	1	0.403		0.038	1	ND	U	0.034	1	0.782		0.036	1	0.775		0.041	1	0.183		0.043	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND	U	0.033	1	0.76		0.038	1	ND	U	0.034	1	0.952		0.036	1	0.815		0.041	1	0.259		0.043	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND	U	0.033	1	0.463		0.038	1	ND	U	0.034	1	0.538		0.036	1	0.617		0.041	1	0.197		0.043	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	ND	U	0.033	1	0.622		0.038	1	ND	U	0.034	1	0.904		0.036	1	0.718		0.041	1	0.159		0.043	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.033	1	ND	U	0.038	1	ND	U	0.034	1	ND	U	0.036	1	0.0663		0.041	1	ND	U	0.043	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.033	1	ND	U	0.0044	1	ND	U	0.0041	1	ND	U	0.0058	1	ND	U	0.0062	1	ND	U	0.0078	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND	U	0.033	1	0.122		0.038	1	ND	U	0.034	1	1.03		0.036	1	0.737		0.041	1	0.0803		0.043	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND	U	0.033	1	0.91		0.038	1	ND	U	0.034	1	1.54		0.036	1	0.884		0.041	1	0.111		0.043	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	4.31		0.005	2	291		24	10	30.2		2.1	1	**1340**		2.6	1	**870**		2.8	1	145		2.8	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	3		0.5	1	NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				81.6		0	1	86.3		0	1	78.7		0	1	75.1		0	1	68.3		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	AOI7 BH-12-83				AOI7 BH-12-79				AOI7 BH-12-82				AOI7 BH-12-78				AOI7 BH-12-78				AOI7 BH-12-76			
							Sample ID	BH-12-83_1.0'				BH-12-79_1.0'				BH-12-82_1.0'				BH-12-78_2.0'				BH-12-78_1.0'				BH-12-76_1'			
							Sample Date	11/27/2012				11/27/2012				11/27/2012				11/27/2012				11/27/2012				11/28/2012			
							Sample Depth	0.5-1				0.5-1				0.5-1				1.5-2				0.5-1				0.5-1			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.0056	1	ND	U	0.0055	1	ND	U	0.0049	1	ND	U	0.0052	1	ND	U	0.0044	1	ND	U	0.001	0.89
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.001	0.89
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.001	0.89
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.0056	1	ND	U	0.0055	1	ND	U	0.0049	1	ND	U	0.0052	1	ND	U	0.0044	1	ND	U	0.001	0.89
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.0005	0.89
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.001	0.89
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.001	0.89
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.0056	1	ND	U	0.0055	1	ND	U	0.0049	1	ND	U	0.0052	1	ND	U	0.0044	1	ND	U	0.001	0.89
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.0005	0.89
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.0011	1	ND	U	0.0011	1	ND	U	0.00097	1	ND	U	0.001	1	ND	U	0.00088	1	ND	U	0.001	0.89
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.031	1	0.0638		0.037	1	ND	U	0.036	1	0.0605		0.039	1	0.119		0.033	1	0.035		0.003	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND	U	0.031	1	0.265		0.037	1	0.0384		0.036	1	0.18		0.039	1	0.2		0.033	1	0.11		0.003	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND	U	0.031	1	0.244		0.037	1	ND	U	0.036	1	0.207		0.039	1	0.15		0.033	1	0.099		0.003	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND	U	0.031	1	0.282		0.037	1	ND	U	0.036	1	0.235		0.039	1	0.176		0.033	1	0.13		0.003	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND	U	0.031	1	0.179		0.037	1	0.106		0.036	1	0.222		0.039	1	0.0889		0.033	1	0.059		0.003	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	ND	U	0.031	1	0.253		0.037	1	0.0408		0.036	1	0.202		0.039	1	0.205		0.033	1	0.14		0.003	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.031	1	ND	U	0.037	1	ND	U	0.036	1	ND	U	0.039	1	0.0695		0.033	1	ND	U	0.003	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.0056	1	ND	U	0.0055	1	ND	U	0.0049	1	ND	U	0.0052	1	ND	U	0.0044	1	0.027		0.003	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND	U	0.031	1	0.243		0.037	1	ND	U	0.036	1	0.115		0.039	1	0.584		0.033	1	0.16		0.003	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND	U	0.031	1	0.39		0.037	1	0.0396		0.036	1	0.212		0.039	1	0.35		0.033	1	0.18		0.003	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	16.2		2.2	1	**498**		2.3	1	116		13	5	128		2.4	1	237		2.2	1	143		0.0044	5
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				9.5		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	92.2		0	1	83.5		0	1	75.8		0	1	79.5		0	1	88.9		0	1	NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	AOI7 BH-12-74				AOI7 BH-12-75				AOI7 BH-12-75				AOI7 BH-12-56				AOI7 BH-12-98				AOI7 BH-12-99			
							Sample ID	BH-12-74_1'				BH-12-75_2'				BH-12-75_1'				BH-12-56_2'				BH-12-98_1'				BH-12-99_0.5'			
							Sample Date	11/28/2012				11/28/2012				11/28/2012				11/28/2012				11/28/2012				11/28/2012			
							Sample Depth	0.5-1				1.5-2				0.5-1				1.5-2				0.5-1				0-0.5			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	7.3		0.001	59.24	ND	U	0.001	0.83
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	ND	U	0.001	59.24	ND	U	0.001	0.83
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	ND	U	0.001	59.24	ND	U	0.001	0.83
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	ND	U	0.001	59.24	ND	U	0.001	0.83
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.027		0.0005	0.96	ND	U	0.0005	0.87	ND	U	0.0005	0.88	ND	U	0.0005	0.91	**0.53**		0.0005	59.24	ND	U	0.0005	0.83
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	0.57		0.001	59.24	ND	U	0.001	0.83
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	0.18	J	0.001	59.24	ND	U	0.001	0.83
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	7.6		0.001	59.24	ND	U	0.001	0.83
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	0.96	ND	U	0.0005	0.87	ND	U	0.0005	0.88	ND	U	0.0005	0.91	ND	U	0.0005	59.24	ND	U	0.0005	0.83
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	0.96	ND	U	0.001	0.87	ND	U	0.001	0.88	ND	U	0.001	0.91	2		0.001	59.24	ND	U	0.001	0.83
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.081		0.003	1	0.88		0.003	10	0.079		0.003	1	0.35		0.003	1	0.17	J	0.003	10	ND	U	0.003	50
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.27		0.003	1	2.6		0.003	10	0.29		0.003	1	0.85		0.003	1	0.34		0.003	10	ND	U	0.003	50
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	0.36		0.003	1	2.8		0.003	10	0.32		0.003	1	1		0.003	1	0.32		0.003	10	ND	U	0.003	50
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	0.47		0.003	1	3.5		0.003	10	0.44		0.003	1	1.3		0.003	1	0.59		0.003	10	ND	U	0.003	50
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	0.41		0.003	1	1.9		0.003	10	0.29		0.003	1	0.88		0.003	1	0.32		0.003	10	ND	U	0.003	50
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	0.45		0.003	1	2.9		0.003	10	0.39		0.003	1	0.89		0.003	1	0.42		0.003	10	16		0.003	50
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.003	1	0.33		0.003	10	ND	U	0.003	1	0.076		0.003	1	0.077	J	0.003	10	400		0.003	50
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.13		0.003	1	0.43		0.003	10	0.19		0.003	1	1		0.003	1	0.79		0.003	10	ND	U	0.003	50
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.41		0.003	1	2.7		0.003	10	0.32		0.003	1	0.64		0.003	1	0.7		0.003	10	180		0.003	50
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	0.46		0.003	1	4.3		0.003	10	0.43		0.003	1	0.93		0.003	1	0.53		0.003	10	ND	U	0.003	50
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	254		0.0044	10	**551**		0.0044	20	335		0.0044	10	**743**		0.0044	20	**955**		0.0044	20	341		0.0044	10
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	14.7		0.5	1	13.8		0.5	1	12.5		0.5	1	16		0.5	1	22.2		0.5	1	30.9		0.5	1
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	AOI7 BH-12-70				AOI7 BH-12-69				AOI7 BH-12-67				AOI7 BH-12-68				AOI7 BH-12-46				AOI7 BH-12-47			
							Sample ID	BH-12-70_2'				BH-12-69_2'				BH-12-67_2'				BH-12-68_1.5'				BH-12-46_0.5'				BH-12-47_1.5'			
							Sample Date	11/28/2012				11/29/2012				11/29/2012				11/29/2012				11/29/2012				11/29/2012			
							Sample Depth	1.5-2				1.5-2				1.5-2				1-1.5				0-0.5				1-1.5			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.001	1.07	ND	U	0.004	1	ND	U	0.007	1	ND	U	0.005	1	ND	U	0.0041	1	ND	U	0.46	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	1.07	ND	U	0.00079	1	ND	U	0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	ND	U	**0.092**	1
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	1.07	ND	U	0.00079	1	ND	U	0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	ND	U	0.092	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	1.07	ND	U	0.004	1	ND	U	0.007	1	ND	U	0.005	1	ND	U	0.0041	1	ND	U	0.46	1
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	1.07	ND	U	0.00079	1	ND	U	0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	ND	U	0.092	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	1.07	ND	U	0.00079	1	0.0025		0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	0.111		0.092	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	1.07	ND	U	0.00079	1	ND	U	0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	ND	U	0.092	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	1.07	ND	U	0.004	1	ND	U	0.007	1	ND	U	0.005	1	ND	U	0.0041	1	ND	U	0.46	1
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	1.07	ND	U	0.00079	1	0.0023		0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	ND	U	0.092	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	1.07	ND	U	0.00079	1	ND	U	0.0014	1	ND	U	0.00099	1	ND	U	0.00082	1	0.288		0.092	1
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.003	1	5.04		0.61	20	0.497		0.071	2	0.089		0.033	1	ND	U	0.032	1	ND	U	0.39	2
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.032		0.003	1	6.21		0.61	20	0.908		0.071	2	0.214		0.033	1	0.139		0.032	1	3.38		0.39	2
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	0.039		0.003	1	4.06		0.61	20	1.06		0.071	2	0.203		0.033	1	0.129		0.032	1	0.731		0.39	2
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	0.057		0.003	1	3.28		0.61	20	0.943		0.071	2	0.185		0.033	1	0.177		0.032	1	ND	U	0.39	2
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	0.039		0.003	1	1.69		0.61	20	0.641		0.071	2	0.279		0.033	1	0.166		0.032	1	ND	U	0.39	2
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	0.032		0.003	1	5.53		0.61	20	1.61		0.071	2	0.201		0.033	1	0.199		0.032	1	1.82		0.39	2
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.003	1	1.74		0.03	1	0.51		0.071	2	ND	U	0.033	1	ND	U	0.032	1	0.418		0.39	2
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.025		0.003	1	ND	U	0.004	1	ND	U	0.007	1	ND	U	0.005	1	ND	U	0.0041	1	ND	U	0.46	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.026		0.003	1	17.9		0.61	20	1.02		0.071	2	0.197		0.033	1	0.183		0.032	1	2.95		0.39	2
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	0.039		0.003	1	14.4		0.61	20	1.99		0.071	2	0.339		0.033	1	0.237		0.032	1	ND	U	0.39	2
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	13.8		0.0044	2	14.7		2.2	1	**583**		2.4	1	240		2.2	1	121		7	3	**2060**		2.8	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	6.5		0.5	1	NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				94		0	1	79.6		0	1	86.8		0	1	86.9		0	1	72.6		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 1
Summary of Surface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	AOI7 BH-12-55				AOI7-BH-13-48				AOI7-BH-13-45				AOI7-BH-13-47				AOI7-BH-13-46				AOI7-BH-13-50			
							Sample ID	BH-12-55_1.5'				AOI7-BH-13-48_1.5-2_031313				AOI7-BH-13-45_1.5-2_031313				AOI7-BH-13-47_1.5-2_031313				AOI7-BH-13-46_1.5-2_031313				AOI7-BH-13-50_0-0.5_031913			
							Sample Date	11/30/2012				3/13/2013				3/13/2013				3/13/2013				3/13/2013				3/19/2013			
							Sample Depth	1-1.5				1.5-2				1.5-2				1.5-2				1.5-2				0-0.5			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	ND	U	0.0042	1	0.499		0.44	1	ND	U	0.69	1	ND	U	0.58	1	ND	U	0.0043	1	ND	U	0.019	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.00085	1	ND	U	**0.088**	1	ND	U	**0.14**	1	ND	U	**0.12**	1	ND	U	0.00086	1	ND	U	0.0039	1
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.00085	1	ND	U	0.088	1	ND	U	0.14	1	ND	U	0.12	1	ND	U	0.00086	1	ND	U	0.0039	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.0042	1	ND	U	0.44	1	ND	U	0.69	1	ND	U	0.58	1	ND	U	0.0043	1	ND	U	0.019	1
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.00085	1	**2.66**		0.088	1	ND	U	0.14	1	ND	U	0.12	1	ND	U	0.00086	1	ND	U	0.0039	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.00085	1	4.53		0.088	1	0.474		0.14	1	0.255		0.12	1	ND	U	0.00086	1	ND	U	0.0039	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.00085	1	0.643		0.088	1	ND	U	0.14	1	ND	U	0.12	1	ND	U	0.00086	1	ND	U	0.0039	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.0042	1	ND	U	0.44	1	ND	U	0.69	1	ND	U	0.58	1	ND	U	0.0043	1	ND	U	0.019	1
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.00085	1	ND	U	0.088	1	ND	U	0.14	1	ND	U	0.12	1	ND	U	0.00086	1	ND	U	0.0039	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.00085	1	3.45		0.088	1	0.14		0.14	1	0.252		0.12	1	ND	U	0.00086	1	ND	U	0.0039	1
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.037		0.037	1	0.332		0.034	1	ND	U	0.21	5	0.459		0.042	1	0.0831		0.037	1	0.11		0.038	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.118		0.037	1	0.797		0.034	1	0.482		0.21	5	1.23		0.042	1	0.335		0.037	1	0.188		0.038	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	0.12		0.037	1	0.934		0.034	1	0.395		0.21	5	1.25		0.042	1	0.347		0.037	1	0.197		0.038	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	0.125		0.037	1	1.1		0.034	1	0.425		0.21	5	1.14		0.042	1	0.535		0.037	1	0.184		0.038	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	0.116		0.037	1	0.59		0.034	1	0.485		0.21	5	0.818		0.042	1	0.309		0.037	1	0.516		0.038	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	0.124		0.037	1	1		0.034	1	1.26		0.21	5	1.4		0.042	1	0.546		0.037	1	0.219		0.038	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.037	1	0.428		0.034	1	ND	U	0.21	5	0.211		0.042	1	ND	U	0.037	1	0.0427		0.038	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.0042	1	0.12		0.034	1	ND	U	0.21	5	0.19		0.042	1	ND	U	0.037	1	0.088		0.038	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.0855		0.037	1	0.214		0.034	1	0.246		0.21	5	1.07		0.042	1	0.266		0.037	1	0.269		0.038	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	0.185		0.037	1	1.51		0.034	1	1.39		0.21	5	1.46		0.042	1	0.585		0.037	1	0.243		0.038	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	112		2.2	1	275		2.2	1	**498**		2	1	**866**		2	1	237		2.2	1	281		2	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	85.7		0	1	91.1		0	1	78.4		0	1	79.4		0	1	85.8		0	1	80.4		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-271-GP-2				GP-271-GP-4				GP-271-GP-5				GP-271-GP-5				GP-275-PER1				GP-275-PER2			
							Sample ID	GP-2 (8.5-9.0)				GP-4 (3.5-4.0)				GP-5 (3.5-4)				GP-5(3.5-4)_09/17/2002				GP-275-PER1				GP-275-PER2			
							Sample Date	6/4/2002				6/4/2002				9/17/2002				9/17/2002				5/24/2007				5/24/2007			
							Sample Interval (ft)	8.5-9				3.5-4				3.5-4				3.5-4				3-3.5				3-3.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND		0.41	1	ND		0.35	1	ND		0.39	1	ND	U	0.001	48.22	ND	UD	0.27	50	ND	UD	0.27	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	NA				NA				NA				NA				ND	UD	0.27	50	ND	UD	0.27	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	NA				NA				NA				NA				ND	UD	0.27	50	ND	UD	0.27	50
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	NA				NA				NA				NA				0.59	D	0.27	50	0.71	D	0.27	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND		0.58	1	0.39	J	0.56	1	NA				NA				ND	U	0.58	1	ND	U	0.56	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	ND		0.58	1	0.44	J	0.56	1	NA				NA				1.8		0.58	1	0.38	J	0.56	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	ND		0.58	1	0.41	J	0.56	1	NA				NA				2		0.58	1	0.4	J	0.56	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	ND		0.58	1	0.46	J	0.56	1	NA				NA				2.5		0.58	1	0.56		0.56	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	ND		0.58	1	ND		0.56	1	NA				NA				1.1		0.58	1	ND	U	0.56	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	ND		0.58	1	0.58		0.56	1	NA				NA				2		0.58	1	0.7		0.56	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND		0.58	1	0.4	J	0.56	1	NA				NA				ND	U	0.58	1	ND	U	0.56	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA				1.1		0.58	1	ND	U	0.56	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.92		0.41	1	0.72		0.35	1	NA				NA				0.43	D	0.27	50	0.6	D	0.27	50
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.6		0.58	1	1.5		0.56	1	NA				NA				2.2		0.58	1	0.59		0.56	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	0.57	J	0.58	1	1.4		0.56	1	NA				NA				2.9		0.58	1	1		0.56	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				37.7		0.5	1	NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-275-PER3				GP-275-PER4				GP-275-PER5				GP-275-PER6				GP-277-PER1				GP-277-PER2			
							Sample ID	GP-275-PER3				GP-275-PER4				GP-275-PER5				GP-275-PER6				GP-277-PER1				GP-277-PER2			
							Sample Date	5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007			
							Sample Interval (ft)	3-3.5				3-3.5				3-3.5				3-3.5				3-3.5				3-3.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	UD	0.23	50	ND	UD	0.23	50	ND	UD	0.2	50	ND	UD	0.34	50	**1.1**	D	0.16	50	**2.8**	D	0.17	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	UD	0.23	50	ND	UD	0.23	50	ND	UD	0.2	50	ND	UD	0.34	50	1.2	D	0.16	50	1.9	D	0.17	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	UD	0.23	50	ND	UD	0.23	50	ND	UD	0.2	50	ND	UD	0.34	50	1.7	D	0.16	50	2.4	D	0.17	50
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.49	D	0.23	50	0.5	D	0.23	50	0.38	D	0.2	50	ND	UD	0.34	50	1.4	D	0.16	50	2.6	D	0.17	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.55	1	ND	U	0.51	1	ND	U	0.5	1	ND	U	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.81		0.55	1	1.1		0.51	1	1		0.5	1	0.46	J	0.48	1	0.32	J	0.4	1	ND	U	0.38	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.99		0.55	1	1.7		0.51	1	1.4		0.5	1	0.59		0.48	1	0.31	J	0.4	1	ND	U	0.38	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	1.3		0.55	1	2.6		0.51	1	1.5		0.5	1	0.6		0.48	1	0.42		0.4	1	ND	U	0.38	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	0.39	J	0.55	1	0.57		0.51	1	0.83		0.5	1	ND	U	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.89		0.55	1	1.2		0.51	1	1.2		0.5	1	0.51		0.48	1	0.41		0.4	1	ND	U	0.38	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.55	1	ND	U	0.51	1	ND	U	0.5	1	ND	U	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	0.36	J	0.55	1	0.54		0.51	1	0.7		0.5	1	0.43	J	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.35	D	0.23	50	0.37	D	0.23	50	0.2	JD	0.2	50	ND	UD	0.34	50	1	D	0.16	50	0.87	D	0.17	50
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.83		0.55	1	0.85		0.51	1	0.64		0.5	1	0.47	J	0.48	1	0.51		0.4	1	ND	U	0.38	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	1.8		0.55	1	1.4		0.51	1	1.4		0.5	1	0.69		0.48	1	0.82		0.4	1	ND	U	0.38	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-277-PER3				GP-277-PER4				GP-277-PER5				GP-277-PER6				GP-277-SUB1				GP-277-SUB2			
							Sample ID	GP-277-PER3				GP-277-PER4				GP-277-PER5				GP-277-PER6				GP-277-SUB1				GP-277-SUB2			
							Sample Date	5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007			
							Sample Interval (ft)	3-3.5				3-3.5				3-3.5				3-3.5				5-5.5				5-5.6			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	**3.3**	D	0.24	50	**3**	D	0.24	50	**8.6**	D	0.23	50	**3.8**	D	0.26	50	**0.79**	D	0.25	50	**1.3**	D	0.26	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	1.8	D	0.24	50	4.1	D	0.24	50	1.1	D	0.23	50	12	D	0.26	50	0.25	D	0.25	50	0.53	D	0.26	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	2.7	D	0.24	50	4.3	D	0.24	50	2.5	D	0.23	50	7.2	D	0.26	50	0.9	D	0.25	50	0.16	JD	0.26	50
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	2.7	D	0.24	50	4	D	0.24	50	3.1	D	0.23	50	4.3	D	0.26	50	0.37	D	0.25	50	0.79	D	0.26	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.55	1	2.7		0.54	1	ND	UD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.33	J	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.35	J	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	3.9	JD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	0.49	J	0.55	1	0.48	J	0.54	1	ND	UD	5.3	10	3.5	JD	5.6	10	ND	UD	5.5	10	0.55		0.54	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	ND	U	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	4.4	JD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.37	J	0.55	1	0.44	J	0.54	1	5.5	D	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.55	1	1.1		0.54	1	3.7	JD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	ND	U	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	3.1	JD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.48	D	0.24	50	1.5	D	0.24	50	0.57	D	0.23	50	8.2	D	0.26	50	0.44	D	0.25	50	0.45	D	0.26	50
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	ND	U	0.55	1	2.7		0.54	1	11	D	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	0.62		0.54	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	0.46	J	0.55	1	0.4	J	0.54	1	4.9	JD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	0.53	J	0.54	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-277-SUB3				GP-275-SUB-1				GP-275-SUB-2				GP-275-SUB-3				GP-270-S-1				GP-270-S-2			
							Sample ID	GP-277-SUB3				GP-275-SUB-1				GP-275-SUB-2				GP-275-SUB-3				S-1_09/21/2009				S-2_09/21/2009			
							Sample Date	5/24/2007				9/4/2007				9/4/2007				9/4/2007				9/21/2009				9/21/2009			
							Sample Interval (ft)	5-5.5				5-5.5				5-5.5				5-5.5				4-4.5				4-4.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				ND	U	0.001	41.05	ND	U	0.001	37.48
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				ND	U	0.001	41.05	ND	U	0.001	37.48
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	**2.1**	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.0005	41.05	ND	U	0.0005	37.48
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				ND	U	0.001	41.05	ND	U	0.001	37.48
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.52	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.001	41.05	ND	U	0.001	37.48
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.92	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.001	41.05	ND	U	0.001	37.48
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	1	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.001	41.05	ND	U	0.001	37.48
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	0.43		0.033	1	0.11	J	0.033	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.4		0.033	1	0.32		0.033	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.7		0.033	1	0.36		0.033	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	2.2		0.033	1	0.41		0.033	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.4		0.033	1	0.29		0.033	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.4		0.033	1	0.34		0.033	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	0.21	J	0.033	1	0.062	J	0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.2		0.033	1	0.25		0.033	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.55	D	0.25	50	0.0022	J	0.0058	1	0.002	J	0.0054	1	0.0023	J	0.0051	1	0.18	J	0.001	41.05	ND	U	0.001	37.48
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.1		0.033	1	0.27		0.033	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.9		0.033	1	0.44		0.033	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				73.1		0.591	1	47.1		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				30.1		0.5	1	26.4		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-270-S-3				GP-270-S-4				GP-270-S-5				GP-270-S-7				GP-270-S-8				GP-270-S-9			
							Sample ID	S-3_09/21/2009				S-4_09/22/2009				S-5_09/22/2009				S-7_09/29/2009				S-8_09/29/2009				S-9_10/06/2009			
							Sample Date	9/21/2009				9/22/2009				9/22/2009				9/29/2009				9/29/2009				10/6/2009			
							Sample Interval (ft)	3-3.5				4-4.5				4-4.5				2.5-3				2-2.5				2.5-3			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	ND	U	0.001	55.31	0.12	J	0.001	72.75
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	ND	U	0.001	55.31	ND	U	0.001	72.75
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	53.76	ND	U	0.0005	48.45	ND	U	0.0005	45.87	ND	U	0.0005	53.65	ND	U	0.0005	55.31	ND	U	0.0005	72.75
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	0.18	J	0.001	55.31	0.17	J	0.001	72.75
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	ND	U	0.001	55.31	ND	U	0.001	72.75
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	0.1	J	0.001	53.65	ND	U	0.001	55.31	ND	U	0.001	72.75
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.41	J	0.001	53.76	ND	U	0.001	48.45	0.071	J	0.001	45.87	0.28	J	0.001	53.65	0.44	J	0.001	55.31	0.99		0.001	72.75
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	4.7		0.033	1	0.23	J	0.033	1	0.095	J	0.033	1	4.1		0.033	10	2.1	J	0.033	10	2.5	J	0.033	10
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	6.4		0.033	1	0.52		0.033	1	0.23		0.033	1	4.9		0.033	10	2.2	J	0.033	10	3.5		0.033	10
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	5.1		0.033	1	0.59		0.033	1	0.26		0.033	1	3.5		0.033	10	2.2	J	0.033	10	2.9		0.033	10
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	7		0.033	1	0.69		0.033	1	0.34		0.033	1	3.9		0.033	10	2.5	J	0.033	10	3.1		0.033	10
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	3.4		0.033	1	0.47		0.033	1	0.23		0.033	1	1.6	J	0.033	10	1.5	J	0.033	10	1.7	J	0.033	10
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	7.1		0.033	1	0.61		0.033	1	0.26		0.033	1	5.6		0.033	10	2.6	J	0.033	10	3.7		0.033	10
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	4.1		0.033	1	0.16	J	0.033	1	0.047	J	0.033	1	4.3		0.033	10	1.7	J	0.033	10	2.2	J	0.033	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	2.8		0.033	1	0.41		0.033	1	0.21	J	0.033	1	1.4	J	0.033	10	1.1	J	0.033	10	1.3	J	0.033	10
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.41	J	0.001	53.76	ND	U	0.001	48.45	0.13	J	0.001	45.87	0.39	J	0.001	53.65	0.71		0.001	55.31	0.66		0.001	72.75
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	11		0.033	1	1.1		0.033	1	0.21	J	0.033	1	18		0.033	10	5.5		0.033	10	8.9		0.033	10
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	15		0.033	5	0.93		0.033	1	0.33		0.033	1	13		0.033	10	5.2		0.033	10	8.5		0.033	10
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	264		0.591	1	20.7		0.591	1	28.9		0.591	1	387		0.591	1	443		0.591	1	328		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	34.7		0.5	1	30.3		0.5	1	25.2		0.5	1	38.8		0.5	1	37.1		0.5	1	36.1		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-270-S-10				GP-270-S-12				AOI7 BH-12-87				AOI7 BH-12-100				AOI7 BH-12-83				AOI7 BH-12-85			
							Sample ID	S-10_10/06/2009				S-12_10/06/2009				BH-12-87_3.0'				BH-12-100_3.0'				BH-12-83_3.0'				BH-12-85_3.0'			
							Sample Date	10/6/2009				10/6/2009				11/27/2012				11/27/2012				11/27/2012				11/27/2012			
							Sample Interval (ft)	2-2.5				2-2.5				2.5-3				2.5-3				2.5-3				2.5-3			
							Sample Purpose	Tank Closure				Tank Closure				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.001	69.32	0.12	J	0.001	67.54	ND	U	0.0095	1	ND	U	0.0046	1	ND	U	0.0085	1	1.03		0.49	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	ND	U	**0.099**	1
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	ND	U	0.099	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.001	69.32	ND	U	0.001	67.54	ND	U	0.0095	1	ND	U	0.0046	1	ND	U	0.0085	1	ND	U	0.49	1
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	69.32	0.061	J	0.0005	67.54	ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	**2.35**		0.099	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	0.25	J	0.001	69.32	0.19	J	0.001	67.54	ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	1.64		0.099	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.12	J	0.001	69.32	ND	U	0.001	67.54	ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	0.382		0.099	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	69.32	ND	U	0.001	67.54	ND	U	0.0095	1	ND	U	0.0046	1	ND	U	0.0085	1	ND	U	0.49	1
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	ND	U	0.099	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.7		0.001	69.32	0.94		0.001	67.54	ND	U	0.0019	1	ND	U	0.0009	1	ND	U	0.0017	1	1.16		0.099	1
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	2	J	0.033	10	0.78	J	0.033	10	0.204		0.047	1	0.159		0.033	1	0.362		0.047	1	0.256		0.045	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	2.1	J	0.033	10	1	J	0.033	10	0.662		0.047	1	0.818		0.033	1	0.845		0.047	1	0.455		0.045	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	3.6		0.033	10	1	J	0.033	10	0.695		0.047	1	0.796		0.033	1	0.87		0.047	1	0.524		0.045	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	3.5		0.033	10	1.4	J	0.033	10	0.593		0.047	1	0.821		0.033	1	0.973		0.047	1	0.46		0.045	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	4.5		0.033	10	0.76	J	0.033	10	0.56		0.047	1	0.489		0.033	1	0.693		0.047	1	0.494		0.045	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	2.6		0.033	10	1.1	J	0.033	10	0.687		0.047	1	0.768		0.033	1	0.887		0.047	1	0.518		0.045	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	0.96	J	0.033	10	0.62	J	0.033	10	0.0573		0.047	1	0.0385		0.033	1	0.122		0.047	1	0.139		0.045	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	3.5		0.033	10	0.62	J	0.033	10	NA				NA				NA				NA			
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.87		0.001	69.32	0.85		0.001	67.54	ND	U	0.0095	1	ND	U	0.0046	1	ND	U	0.0085	1	1.04		0.49	1
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	3.1		0.033	10	2.1	J	0.033	10	0.611		0.047	1	0.469		0.033	1	1.01		0.047	1	0.613		0.045	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	2.7		0.033	10	1.9	J	0.033	10	0.896		0.047	1	0.835		0.033	1	1.03		0.047	1	0.54		0.045	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	447		0.591	1	235		0.591	1	**1110**		2.9	1	135		2.3	1	264		3.2	1	344		2.8	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	31.8		0.5	1	30.7		0.5	1	NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				64.2		0	1	85.6		0	1	64		0	1	71.7		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	AOI7 BH-12-84				AOI7 BH-12-88				AOI7 BH-12-80				AOI7 BH-12-76				AOI7 BH-12-74				AOI7 BH-12-73			
							Sample ID	BH-12-84_3.0'				BH-12-88_2.5'				BH-12-80_3.0'				BH-12-76_3'				BH-12-74_4'				BH-12-73_5'			
							Sample Date	11/27/2012				11/27/2012				11/27/2012				11/28/2012				11/28/2012				11/28/2012			
							Sample Interval (ft)	2.5-3				2-2.5				2.5-3				2.5-3				3.5-4				4.5-5			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.0043	1	ND	U	0.0051	1	ND	U	0.0054	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	ND	U	0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.0043	1	ND	U	0.0051	1	ND	U	0.0054	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.0005	1.15	ND	U	0.0005	1.07	ND	U	0.0005	0.9
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	0.0012		0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.0043	1	ND	U	0.0051	1	ND	U	0.0054	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	ND	U	0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.0005	1.15	ND	U	0.0005	1.07	ND	U	0.0005	0.9
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.0011		0.0009	1	ND	U	0.001	1	ND	U	0.0011	1	ND	U	0.001	1.15	ND	U	0.001	1.07	ND	U	0.001	0.9
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.033	1	ND	U	0.037	1	0.0448		0.03	1	1.5		0.003	1	0.85		0.003	1	0.12		0.003	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.0454		0.033	1	0.0591		0.037	1	0.152		0.03	1	0.87		0.003	1	1.9		0.003	1	0.24		0.003	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.043		0.033	1	0.0748		0.037	1	0.161		0.03	1	0.66		0.003	1	1.6		0.003	1	0.22		0.003	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	0.0646		0.033	1	0.129		0.037	1	0.158		0.03	1	1.1		0.003	1	1.9		0.003	1	0.32		0.003	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	0.0338		0.033	1	0.0754		0.037	1	0.106		0.03	1	0.56		0.003	1	1.1		0.003	1	0.21		0.003	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.0657		0.033	1	0.0824		0.037	1	0.151		0.03	1	1.1		0.003	1	2.2		0.003	1	0.25		0.003	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.033	1	ND	U	0.037	1	ND	U	0.03	1	0.78		0.003	1	0.18		0.003	1	0.045		0.003	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	ND	U	0.0043	1	ND	U	0.0051	1	ND	U	0.0054	1	18		0.003	5	0.19		0.003	1	0.11		0.003	1
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.0508		0.033	1	ND	U	0.037	1	0.217		0.03	1	5.2		0.003	1	3.7		0.003	1	0.26		0.003	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	0.0768		0.033	1	0.0767		0.037	1	0.276		0.03	1	1.8		0.003	1	4.5		0.003	1	0.36		0.003	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	58		2.3	1	198		2.4	1	104		2.3	1	380		0.0044	10	**538**		0.0044	20	27.3		0.0044	2
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				34.7		0.5	1	15		0.5	1	28.6		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	87.8		0	1	80.6		0	1	92.4		0	1	NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	AOI7 BH-12-72				AOI7 BH-12-58				AOI7 BH-12-58				AOI7 BH-12-43				AOI7 BH-12-77				AOI7 BH-12-70			
							Sample ID	BH-12-72_3.5'				BH-12-58_3'				BH-12-58_4'				BH-12-43_2.5'				BH-12-77_3'				BH-12-70_4'			
							Sample Date	11/28/2012				11/28/2012				11/28/2012				11/28/2012				11/28/2012				11/28/2012			
							Sample Interval (ft)	3-3.5				2.5-3				3.5-4				2-2.5				2.5-3				3.5-4			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	0.83	ND	U	0.0005	0.8	ND	U	0.0005	53.65	ND	U	0.0005	0.8	ND	U	0.0005	0.79	ND	U	0.0005	1.03
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	ND	U	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	ND	U	0.0005	0.83	ND	U	0.0005	0.8	ND	U	0.0005	53.65	ND	U	0.0005	0.8	ND	U	0.0005	0.79	ND	U	0.0005	1.03
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.001	0.83	ND	U	0.001	0.8	0.21	J	0.001	53.65	ND	U	0.001	0.8	ND	U	0.001	0.79	ND	U	0.001	1.03
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.31		0.003	1	0.13		0.003	1	3.3		0.003	5	0.59		0.003	10	ND	U	0.003	1	ND	U	0.003	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.76		0.003	1	0.27		0.003	1	5.2		0.003	5	1.8		0.003	10	0.026		0.003	1	ND	U	0.003	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.93		0.003	1	0.3		0.003	1	5.3		0.003	5	2		0.003	10	0.028		0.003	1	ND	U	0.003	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	1.1		0.003	1	0.35		0.003	1	6.2		0.003	5	2.6		0.003	10	0.032		0.003	1	ND	U	0.003	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	0.7		0.003	1	0.28		0.003	1	3.7		0.003	5	1.4		0.003	10	0.02		0.003	1	ND	U	0.003	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.9		0.003	1	0.27		0.003	1	6.3		0.003	5	2		0.003	10	0.032		0.003	1	ND	U	0.003	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	0.09		0.003	1	0.04		0.003	1	2.4		0.003	5	0.26		0.003	10	ND	U	0.003	1	ND	U	0.003	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	1		0.003	1	0.52		0.003	1	12		0.003	5	0.54		0.003	10	ND	U	0.003	1	ND	U	0.003	1
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.88		0.003	1	0.34		0.003	1	4.1		0.003	5	1.7		0.003	10	ND	U	0.003	1	ND	U	0.003	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	1		0.003	1	0.34		0.003	1	10		0.003	5	3		0.003	10	0.035		0.003	1	ND	U	0.003	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	185		0.0044	10	350		0.0044	10	**467**		0.0044	10	119		0.0044	5	4.4		0.0044	2	7.46		0.0044	2
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	11.6		0.5	1	13		0.5	1	26.5		0.5	1	9.4		0.5	1	7.2		0.5	1	8.3		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	AOI7 BH-12-69				AOI7 BH-12-64				AOI7 BH-12-64				AOI7 BH-12-67				AOI7 BH-12-68				AOI7 BH-12-62			
							Sample ID	BH-12-69_2.5'				BH-12-64_2.5'				BH-12-64_3'				BH-12-67_3'				BH-12-68_3'				BH-12-62_3'			
							Sample Date	11/29/2012				11/29/2012				11/29/2012				11/29/2012				11/29/2012				11/29/2012			
							Sample Interval (ft)	2-2.5				2-2.5				2.5-3				2.5-3				2.5-3				2.5-3			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.0039	1	ND	U	0.35	1	ND	U	0.0049	1	ND	U	0.0064	1	ND	U	0.0045	1	ND	U	0.0043	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.0008	1	ND	U	**0.07**	1	ND	U	0.001	1	ND	U	0.0013	1	ND	U	0.0009	1	ND	U	0.0009	1
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	ND	U	0.0008	1	ND	U	0.07	1	ND	U	0.001	1	ND	U	0.0013	1	ND	U	0.0009	1	ND	U	0.0009	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.0039	1	ND	U	0.35	1	ND	U	0.0049	1	ND	U	0.0064	1	ND	U	0.0045	1	ND	U	0.0043	1
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0008	1	0.135		0.07	1	ND	U	0.001	1	ND	U	0.0013	1	0.001		0.0009	1	ND	U	0.0009	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	0.002		0.0008	1	0.3		0.07	1	ND	U	0.001	1	0.0024		0.0013	1	ND	U	0.0009	1	ND	U	0.0009	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.0008	1	0.143		0.07	1	ND	U	0.001	1	ND	U	0.0013	1	ND	U	0.0009	1	ND	U	0.0009	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.0039	1	ND	U	0.35	1	ND	U	0.0049	1	ND	U	0.0064	1	ND	U	0.0045	1	ND	U	0.0043	1
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	ND	U	0.0008	1	ND	U	0.07	1	ND	U	0.001	1	ND	U	0.0013	1	ND	U	0.0009	1	ND	U	0.0009	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.0008	1	0.421		0.07	1	ND	U	0.001	1	ND	U	0.0013	1	ND	U	0.0009	1	ND	U	0.0009	1
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	1.54		0.031	1	1.88		0.072	2	0.382		0.034	1	0.791		0.039	1	0.158		0.064	2	0.0828		0.029	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	2.77		0.031	1	2.13		0.072	2	0.969		0.034	1	1.52		0.039	1	0.39		0.064	2	0.276		0.029	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	2.38		0.031	1	2.26		0.072	2	0.916		0.034	1	1.57		0.039	1	0.392		0.064	2	0.329		0.029	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	2.64		0.031	1	1.95		0.072	2	0.771		0.034	1	1.55		0.039	1	0.337		0.064	2	0.415		0.029	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	1.71		0.031	1	1.52		0.072	2	0.678		0.034	1	1.01		0.039	1	0.305		0.064	2	0.281		0.029	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	2.67		0.031	1	2.89		0.072	2	0.987		0.034	1	1.65		0.039	1	0.449		0.064	2	0.325		0.029	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	0.459		0.031	1	1.73		0.072	2	0.141		0.034	1	0.426		0.039	1	ND	U	0.064	2	0.0428		0.029	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	ND	U	0.0039	1	0.816		0.35	1	ND	U	0.0049	1	ND	U	0.0064	1	ND	U	0.0045	1	ND	U	0.0043	1
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	5.63		0.15	5	4.08		0.072	2	0.932		0.034	1	1.66		0.039	1	0.433		0.064	2	0.527		0.029	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	5.68		0.15	5	4.06		0.072	2	1.69		0.034	1	2.31		0.039	1	0.565		0.064	2	0.664		0.029	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	43.5		2.2	1	**594**		2.5	1	360		2.5	1	**672**		2.6	1	210		2.4	1	26.1		2	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	92.2		0	1	79.3		0	1	81.7		0	1	72.8		0	1	87.4		0	1	99.2		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	AOI7 BH-12-45				AOI7 BH-12-54				AOI7 BH-12-55				AOI7 BH-12-53				AOI7 BH-12-48			
							Sample ID	BH-12-45_3.5'				BH-12-54_3'				BH-12-55_2.5'				BH-12-53_2.5'				BH-12-48_3'			
							Sample Date	11/29/2012				11/30/2012				11/30/2012				11/30/2012				11/30/2012			
							Sample Interval (ft)	3-3.5				2.5-3				2-2.5				2-2.5				2.5-3			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																											
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.0063	1	34.9		3.3	1	ND	U	0.0053	1	1.86		0.33	1	ND	U	0.0062	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.0013	1	ND	U	**0.066**	1	ND	U	0.0011	1	ND	U	**0.066**	1	ND	U	0.0012	1
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	ND	U	0.0013	1	ND	U	0.066	1	ND	U	0.0011	1	ND	U	0.066	1	ND	U	0.0012	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.0063	1	**9.72**		0.33	1	ND	U	0.0053	1	0.474		0.33	1	ND	U	0.0062	1
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0013	1	0.34		0.066	1	ND	U	0.0011	1	ND	U	0.066	1	ND	U	0.0012	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	0.0021		0.0013	1	17.2		0.066	1	ND	U	0.0011	1	0.942		0.066	1	ND	U	0.0012	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.0013	1	5.98		0.066	1	ND	U	0.0011	1	0.164		0.066	1	ND	U	0.0012	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.0063	1	2.24		0.33	1	ND	U	0.0053	1	ND	U	0.33	1	ND	U	0.0062	1
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	ND	U	0.0013	1	ND	U	0.066	1	ND	U	0.0011	1	ND	U	0.066	1	ND	U	0.0012	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.0013	1	0.569		0.066	1	ND	U	0.0011	1	0.148		0.066	1	ND	U	0.0012	1
Semi-Volatile Organic Compounds																											
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	1.04		0.04	1	0.932		0.038	1	0.265		0.073	2	0.409		0.08	2	0.82		0.084	2
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	2.16		0.04	1	1.35		0.038	1	0.612		0.073	2	0.914		0.08	2	0.8		0.084	2
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	2.89		0.04	1	1.04		0.038	1	0.599		0.073	2	0.921		0.08	2	1.02		0.084	2
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	2.82		0.04	1	1.32		0.038	1	0.701		0.073	2	0.895		0.08	2	0.717		0.084	2
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	1.93		0.04	1	0.709		0.038	1	0.557		0.073	2	0.839		0.08	2	1.14		0.084	2
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	2.35		0.04	1	1.43		0.038	1	0.718		0.073	2	1.31		0.08	2	1.6		0.084	2
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	1.14		0.04	1	0.89		0.038	1	0.1		0.073	2	0.297		0.08	2	0.217		0.084	2
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA				NA			
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	ND	U	0.0063	1	4.58		0.33	1	ND	U	0.0053	1	0.989		0.33	1	ND	U	0.0062	1
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	1.42		0.04	1	2.73		0.038	1	0.792		0.073	2	1.25		0.08	2	1.25		0.084	2
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	3.39		0.04	1	3.35		0.038	1	0.928		0.073	2	1.81		0.08	2	2.1		0.084	2
Metals																											
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	**758**		2.7	1	190		4.9	2	313		2.5	1	**510**		2.3	1	**1530**		2.9	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA			
General Chemistry																											
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	71.6		0	1	79.1		0	1	82.9		0	1	82.9		0	1	74.1		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Subsurface Soil Analytical Results
AOI 7
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	AOI7 BH-12-49				AOI7-BH-13-48				AOI7-BH-13-45				AOI7-BH-13-47			
							Sample ID	BH-12-49_2.5'				AOI7-BH-13-48_2.5-3_031313				AOI7-BH-13-45_2-2.5_031313				AOI7-BH-13-47_2.5-3_031313			
							Sample Date	11/30/2012				3/13/2013				3/13/2013				3/13/2013			
							Sample Interval (ft)	2-2.5				2.5-3				2-2.5				2.5-3			
							Sample Purpose	Site Characterization				Site Characterization				Site Characterization				Site Characterization			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																							
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.0042	1	ND	U	0.56	1	ND	U	0.64	1	ND	U	0.79	1
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.0008	1	ND	U	**0.11**	1	ND	U	**0.13**	1	ND	U	**0.16**	1
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	ND	U	0.0008	1	ND	U	0.11	1	ND	U	0.13	1	ND	U	0.16	1
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.0042	1	ND	U	0.56	1	ND	U	0.64	1	ND	U	0.79	1
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0008	1	**0.845**		0.11	1	ND	U	0.13	1	ND	U	0.16	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	ND	U	0.0008	1	1.58		0.11	1	0.394		0.13	1	0.364		0.16	1
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.0008	1	0.401		0.11	1	ND	U	0.13	1	ND	U	0.16	1
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.0042	1	1.96		0.56	1	ND	U	0.64	1	0.87		0.79	1
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	ND	U	0.0008	1	ND	U	0.11	1	ND	U	0.13	1	ND	U	0.16	1
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND	U	0.0008	1	1.08		0.11	1	ND	U	0.13	1	0.475		0.16	1
Semi-Volatile Organic Compounds																							
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.0698		0.036	1	1.12		0.077	2	0.256		0.21	5	2.03		0.24	5
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.26		0.036	1	1.56		0.077	2	0.55		0.21	5	3.13		0.24	5
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.278		0.036	1	1.5		0.077	2	0.6		0.21	5	2.5		0.24	5
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	0.263		0.036	1	1.44		0.077	2	0.643		0.21	5	2.4		0.24	5
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	0.226		0.036	1	0.986		0.077	2	0.601		0.21	5	1.37		0.24	5
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.305		0.036	1	2.07		0.077	2	1.29		0.21	5	4.13		0.24	5
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.036	1	1.58		0.077	2	ND	U	0.21	5	3.36		0.24	5
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA			
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	ND	U	0.0042	1	ND	U	0.077	2	ND	U	0.21	5	ND	U	0.24	5
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.201		0.036	1	2.27		0.077	2	0.217		0.21	5	7.92		0.24	5
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	0.41		0.036	1	3.34		0.077	2	1.95		0.21	5	5.58		0.24	5
Metals																							
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	107		4.3	2	348		2.5	1	**753**		2	1	**567**		2	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA			
General Chemistry																							
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	89.9		0	1	81.9		0	1	79.9		0	1	65.3		0	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Air Analytical Results
AOI-7
PES Facility
Philadelphia, Pennsylvania

Sample	*Type*	*Location/description*	*Volatile hydrocarbon compounds*											
			Methyl tert-butyl ether	*1,2-dichloro-ethane*	*Benzene*	*Toluene*	*1,2-dibromo-ethane*	*Ethyl-benzene*	*m,p-xylenes*	*o-xylene*	*Xylenes, total*	*Cumene*	*1,3,5-trimethyl-benzene*	*1,2,4-trimethyl-benzene*
17	I/s	440 building, 2nd floor Room 221, inspection	ND	ND	2.8	2.2	ND	0.41	0.98	0.34	1.32	0.5	ND	0.25
18	I/s	440 building, 2nd floor Meeting room	ND	ND	2.2	2.2	ND	0.22	0.75	0.28	1.03	0.39	ND	0.24

Notes

(1) All units are in micrograms per cubic meter of air (ug/m3) by volume.

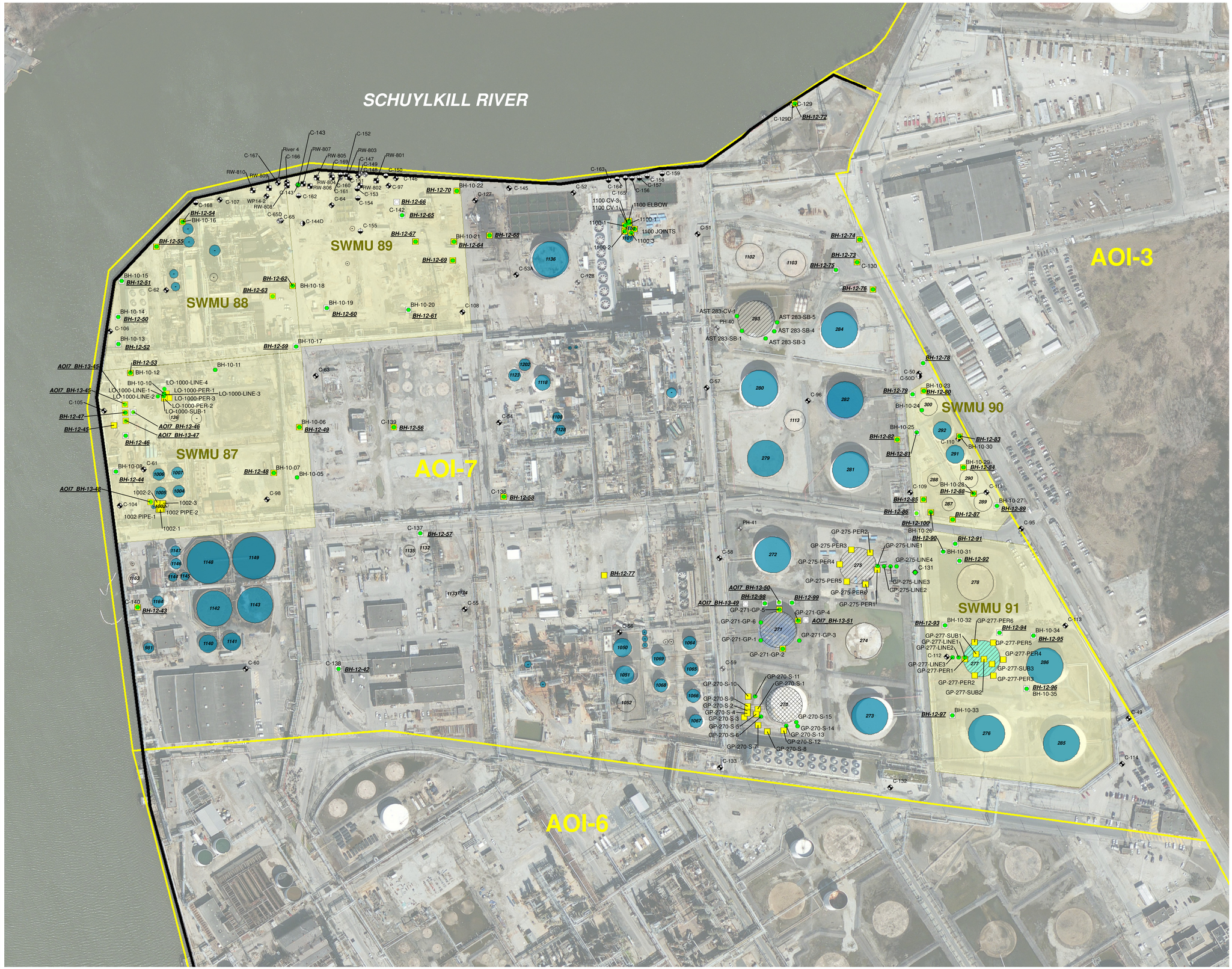
(2) All samples were analyzed utilizing EPA Method TO-15.

(3) I=Indoor air sample; "O"=Outdoor air sample; "TB"= Trip Blank, SUMMA canisters which were not opened, used for QA/QC.

(4) ND=Non-Detect

(5) Source: "Evaluation of Specific Volatile Organic Compounds in Occupied Buildings at the Former Philadelphia Refinery," Stantec, March 2013

FIGURES



Legend

- Shallow Soil Boring Location
- Proposed Shallow Soil Boring Not Completed Due to Concrete Pad
- Deep Soil Boring Location
- Proposed Deep Soil Boring Not Completed Due to Groundwater or Concrete Pad
- Deep Monitoring Wells
- Shallow Monitoring Wells
- Shallow Piezometer
- Shallow Recovery Well
- Monitoring Well Abandoned/Damaged/Unable to Locate
- Sheet Pile Wall
- Removed Tank
- Tank In Service
- Tank Closed in Place
- Tank With Release Assessment
- Closed in Place Following Release
- BH-10-09 Soil Boring Completed Prior to 2012 RIR Addendum
- BH-12-63 Soil Boring Completed As Part of 2012 RIR Addendum
- Solid Waste Management Unit (SWMU)
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.

Figure 1 - Completed Activities Plan
AOI-7 SCR/RIR Addendum
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 70 140 280 Feet

SCALE: 1" = 140'
DATE: August 20, 2013
DRN: BY: MH
CKD: BY: PT
JOB# 2574601

Path: \\langan.com\data\PT\data\2574601\ArcGIS\MapDocuments\AOI 7 RIR Addendum\Figure 1 - AOI7 Completed Activities_8-20-13.mxd

Sample Number	Sample Location
17	440 Building, 2nd Floor Room 221, inspection
18	440 Building, 2nd Floor Meeting Room

N
W E
S

Legend

- Indoor Air Sample Locations
- Sheet Pile Wall
- Occupied Buildings Not Under Positive Pressure
- Occupied Buildings Under Positive Pressure
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. Indoor air samples referenced from "Evaluation of Specific Volatile Organic Compounds in Occupied Buildings on the Philadelphia Refinery Properties" completed by Stantec, December 14, 2012.

Figure 2 - Indoor Air Sample Locations
October 2012
AOI-7 SCR/RIR Addendum
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 70 140 280
Feet

SCALE: 1" = 140'
DATE: August 20, 2013
DRN. BY: MH
CKD. BY: PT
JOB#: 2574601

Path: \\langan.com\data\DT\data6\2574601\ArcGIS\MapDocuments\AOI 7 RIR Addendum\Figure 2 - AOI7 Indoor Air Sample Locations_8-20-13.mxd

N
W E
S

Legend

- Shallow Soil Boring Location with Exceedance of PADEP Non-Res Soil MSCs
- Shallow Soil Boring Location with No Exceedance of PADEP Non-Res Soil MSCs (see note 2)
- Shallow Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Deep Monitoring Wells
- Shallow Monitoring Wells
- Shallow Piezometer
- Shallow Recovery Well
- Monitoring Well Abandoned/Damaged/Unable to Locate
- Sheet Pile Wall
- 271 Tank Closed in Place
- 270 Tank With Release Assessment
- BH-10-09 Soil Boring Completed Prior to 2013 RIR Addendum
- BH-12-63 Soil Boring Completed As Part of 2013 RIR Addendum
- Solid Waste Management Unit (SWMU)
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. Soil sample usable for site characterization but cannot be used for delineation or to show attainment of an Act 2 standard.

Figure 3: Summary of Surface Soil Exceedances
AOI-7 SCR/RIR Addendum
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 70 140 280 Feet

SCALE: 1" = 140'
DATE: August 20, 2013
DRN: BY: MH
CKD: BY: PT
JOB#: 2574601

Path: \\langan.com\data\PT\data\#2574601\ArcGIS\Maps\Documents\AOI 7 RIR Addendum\Figure 3 - AOI7 Surface Soil Exceedances_9-3-13.mxd

N
W E
S

Legend

- Deep Soil Boring Location with Exceedances of PADEP Non-Res Soil MSCs
- Deep Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Deep Soil Boring With No Sample Due to Groundwater or Concrete Pad
- Deep Monitoring Wells
- Shallow Monitoring Wells
- Shallow Piezometer
- Shallow Recovery Well
- Monitoring Well Abandoned/Damaged/Unable to Locate
- Sheet Pile Wall
- Tank Closed in Place
- Tank With Release Assessment
- BH-10-09 Soil Boring Completed Prior to 2013 RIR Addendum
- BH-12-63 Soil Boring Completed As Part of 2013 RIR Addendum
- Solid Waste Management Unit (SWMU)
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.

Figure 4: Summary of Subsurface Soil Exceedances
AOI-7 SCR/RIR Addendum
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 70 140 280 Feet

SCALE: 1" = 140'
DATE: September 3, 2013
DRN. BY: MH
CKD. BY: PT
JOB#: 2574601

Path: \\langan.com\data\PT\data\257\4601\ArcGIS\Map\Documents\AOI 7 RIR Addendum\Figure 4 - AOI7 Subsurface Soil Exceedances_8-20-13.mxd

N
W E
S

Legend

- Sheet Pile Wall
- 271 Tank Closed in Place
- 270 Tank With Release Assessment
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.

Figure 5 - Storage Tanks in AOI-7
AOI-7 SCR/RIR Addendum
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 70 140 280 Feet

SCALE: 1" = 140'
DATE: September 3, 2013
DRN. BY: MH
CKD. BY: PT
JOB#: 2574601

Path: \\langan.com\data\DT\data6\2574601\ArcGIS\MapDocuments\AOI 7 RIR Addendum\Figure 5 - Storage Tanks in AOI-7_8-20-13.mxd

APPENDIX A
Notice of Intent to Remediate and Report Notifications

Sunoco Inc.
3144 Passyunk Avenue
Philadelphia PA 19145-5299
215 339 2000

October 12, 2006

Mr. Robert Day-Lewis
Pennsylvania DEP
2 East Main Street
Norristown, PA 19401

Mr. Steve O'Neil
Pennsylvania DEP
2 East Main Street
Norristown, PA 19401

Re: Sunoco Inc. (R&M) Philadelphia Refinery
Philadelphia, Philadelphia County

Dear Mr. Day-Lewis and Mr. O'Neil:

In accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2), enclosed are two copies of a Notice of Intent to Remediate (NIR) for the Sunoco Inc. (R&M) Philadelphia Refinery. This NIR covers remediation being done as part of the 2003 Consent Order and Agreement (CO&A) at Point Breeze, Girard Point and Schuylkill River Tank Farm. Remediation at Belmont Terminal, which is part of the CO&A, is not part of this NIR since this site is not subject to RCRA Corrective Action. Sunoco is considering submitting a separate NIR for this area under the Act 2 program only.

This NIR is being submitted with the intent to enter the Sunoco Philadelphia Refinery into the One Cleanup Program with PaDEP and the USEPA. All remediation work at the Philadelphia refinery will be completed under the 2003 Consent Order & Agreement (CO&A), however, RCRA Corrective Action measures will be addressed concurrently with work performed under the CO&A and within the Act 2 program.

Please call me at 610-859-1881 or email me at jroppenheim@sunocoinc.com with any questions or comments.

Best Regards,

James Oppenheim, PE
Sr. Environmental Consultant

Cc: Sunoco Legal Dept.
Philadelphia Refinery Environmental Central File
David Burke, PADEP
Walter Payne, PADEP
Hon Lee, USEPA Region III
Colleen Costello, Langan

2530-FM-BWM0019 Rev. 4/2004

Will remediation be to a site-specific standard ☒ or as a special industrial area ☐? If so, the municipality or municipalities must be provided 30-day comment period.
Remediator/Property Owner/Consultant. For each of these recipients of the approval of the final report, complete form below.

Remediator
Contact Person: James R. Oppenheim
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Remediation Project Manager
Phone Number: (610) 859-1881
Company Name: Sunoco, Inc. (R&M)
Address (street, city, state, zip): 100 Green St., Marcus Hook, PA 19061
Email Address: jroppenheim@sunocoinc.com
Property Owner
Contact Person: Scott Baker
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Environmental Manager
Phone Number: (215) 339-2074
Company Name: Sunoco, Inc. (R&M)
Address (street, city, state, zip): 3144 Passyunk Ave. Philadelphia, PA 19145
Email Address: sabaker@sunocoinc.com
Consultant
Contact Person: Colleen Costello
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Consultant
Phone Number: (215) 864-0640
Company Name: Langan Engineering and Environmental Services
Address (street, city, state, zip): 30 South 17th St., Suite 1500, Philadelphia, PA 19103
Email Address: ccostello@langan.com

Preparer of Notice of Intent to Remediate:

Name: James Oppenheim

Title: Project Manager

Address: 100 Green Street
Marcus Hook, PA 19061

Telephone: (610) 859-1881

Email Address: jroppenheim@sunocoinc.com

Email Image File of Site Map showing property lines and general area of site(s) to be remediated to: (landrecycling@state.pa.us)

Sunoco Inc.
3144 Passyunk Avenue
Philadelphia PA 19145-5299
215 339 2000

October 12, 2006

Manager
Philadelphia Department of Public Health
Environmental Health Services
321 University Avenue
Philadelphia, PA 19104

Re: Sunoco, Inc. (R&M) Philadelphia Refinery
Philadelphia, Philadelphia County

Dear Sir/Madam:

The Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) be provided to the municipality in which the site is located when a site is being remediated to a site-specific Standard. The municipality is afforded a 30-day comment period. In accordance with this provision of the Act, Sunoco, Inc. (R&M) is formally notifying you of its intent to remediate the subject site under Act 2. A copy of the NIR, which will be sent to the Pennsylvania Department of Environmental Protection (PaDEP), is enclosed. This notice will also be published in the Pennsylvania Bulletin, and a summary of the notice appeared in the Philadelphia Daily News on October 16, 2006.

Publication of this notice in the Philadelphia Daily News initiates the 30-day public and municipal comment period. During the next thirty days, your municipality may request to become involved in the development of the remediation plans for the site. If the municipality wishes to become involved in this project, please send your comments to Sunoco to my attention.

Please call me at (610) 859-1881 if you have any questions concerning the proposed remediation.

Best Regards,

James R. Oppenheim, P.E.
Senior Environmental Consultant

Cc: Sunoco Legal Dept.
Philadelphia Refinery Environmental Central File
Steve O'Neil, PaDEP
Colleen Costello, Langan

Will remediation be to a site-specific standard ☒ or as a special industrial area ☐? If so, the municipality or municipalities must be provided 30-day comment period.
Remediator/Property Owner/Consultant. For each of these recipients of the approval of the final report, complete form below.

Remediator
Contact Person: James R. Oppenheim
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Remediation Project Manager
Phone Number: (610) 859-1881
Company Name: Sunoco, Inc. (R&M)
Address (street, city, state, zip): 100 Green St., Marcus Hook, PA 19061
Email Address: jroppenheim@sunocoinc.com
Property Owner
Contact Person: Scott Baker
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Environmental Manager
Phone Number: (215) 339-2074
Company Name: Sunoco, Inc. (R&M)
Address (street, city, state, zip): 3144 Passyunk Ave. Philadelphia, PA 19145
Email Address: sabaker@sunocoinc.com
Consultant
Contact Person: Colleen Costello
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Consultant
Phone Number: (215) 864-0640
Company Name: Langan Engineering and Environmental Services
Address (street, city, state, zip): 30 South 17th St., Suite 1500, Philadelphia, PA 19103
Email Address: ccostello@langan.com

Preparer of Notice of Intent to Remediate:

Name: James Oppenheim

Title: Project Manager

Address: 100 Green Street
Marcus Hook, PA 19061

Telephone: (610) 859-1881

Email Address: jroppenheim@sunocoinc.com

Email Image File of Site Map showing property lines and general area of site(s) to be remediated to: (landrecycling@state.pa.us)

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Anna Dickerson being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

October 16, 2006

Affiant further deposes and says that he is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that he is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Anna Dickerson

Sworn to and subscribed before me this 16th day of October 2006

Mary Anne Logan
Notary Public

My Commission Expires:

NOTARIAL SEAL
Mary Anne Logan, Notary Public
City of Philadelphia, Phila. County
My Commission Expires March 30, 2009

Copy of Notice of Publication

Newspaper Notice of Intent to Remediate to an Environmental Standard (Sections 302(e)(1)(ii), 303(h)(1)(ii), 304(n)(1)(i), and 305(c)(1))

Pursuant to the Land Recycling and Environmental Remediation Standards Act (Act), the act of May 19, 1995, P.L. 4, No. 1995-2, notice is hereby given that Sunoco Inc.(R&M) has submitted to the Pennsylvania Department of Environmental Protection a Notice of Intent to Remediate a site located at 3144 Passyunk Ave., Philadelphia, Philadelphia County, Pennsylvania. This Notice of Intent to Remediate states that the site is a petroleum refinery. It has been determined that petroleum compounds have impacted soil and groundwater at the site. Sunoco Inc. (R&M) has indicated that proposed remediation measures will include source reduction and engineered boundary controls. The proposed future use of the property is industrial for continued operation as a petroleum refinery.

Sunoco Inc. (R&M) plans to use the site-specific remediation standard at the site. The Act provides for a 30-day public comment period for site-specific standard remediation. The 30-day comment period is initiated with the publication of this notice. Until November 16, 2006, the City of Philadelphia may submit a request to Sunoco Inc. (R&M) to be involved in the development of the remediation and reuse plans for the site. The City of Philadelphia may also submit a request to Sunoco Inc. (R&M) during this 30-day comment period to develop and implement a public involvement plan. Copies of these requests and of any comments should also be submitted to the Department of Environmental Protection at 2 East Main Street, Norristown, PA 19401 to the attention of Mr. Walter Payne. All correspondence with Sunoco Inc. (R&M) should be addressed to the Public Relations Dept., Sunoco Inc. (R&M) at 3144 Passyunk Ave, Philadelphia, PA, 19145.

LEGAL NOTICES

Newspaper Notice of Intent to Remediate
to an Environmental Standard.
(Sections 302(e)(1)(ii), 303(h)(1)(ii),
304(n)(1)(i), and 305(c)(1))

Pursuant to the Land Recycling and Environmental Remediation Standards Act (Act), the act of May 19, 1995, P.L. 4, No. 1995-2., notice is hereby given that Sunoco Inc.(R&M) has submitted to the Pennsylvania Department of Environmental Protection a Notice of Intent to Remediate a site located at 3144 Passyunk Ave., Philadelphia, Philadelphia County, Pennsylvania. This Notice of Intent to Remediate states that the site is a petroleum refinery. It has been determined that petroleum compounds have impacted soil and groundwater at the site. Sunoco Inc. (R&M) has indicated that proposed remediation measures will include source reduction and engineered boundary controls. The proposed future use of the property is industrial for continued operation as a petroleum refinery.

Sunoco Inc. (R&M) plans to use the site-specific remediation standard at the site. The Act provides for a 30-day public comment period for site-specific standard remediation. The 30-day comment period is initiated with the publication of this notice. Until November 16, 2006, the City of Philadelphia may submit a request to Sunoco Inc. (R&M) to be involved in the development of the remediation and reuse plans for the site. The City of Philadelphia may also submit a request to Sunoco Inc. (R&M) during this 30-day comment period to develop and implement a public involvement plan. Copies of these requests and of any comments should also be submitted to the Department of Environmental Protection at 2 East Main Street, Norristown, PA 19401 to the attention of Mr. Walter Payne. All correspondence with Sunoco Inc. (R&M) should be addressed to the Public Relations Dept., Sunoco Inc. (R&M) at 3144 Passyunk Ave, Philadelphia, PA, 19145.

Appeared in: ***Philadelphia Inquirer & Philadelphia Daily News*** on Monday, 10/16/2006

Back

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

David T. Gockel, P.E., P.P.
George P. Kelley, P.E.
George E. Derrick, P.E.
Michael A. Semeraro, Jr., P.E.
Nicholas De Rose, P.G.
Andrew J. Ciancia, P.E.
George E. Leventis, P.E.
Rudolph P. Frizzi, P.E., G.E.
Ronald A. Fuerst, C.L.A.
Colleen Costello, P.G.
Cristina M. González, P.E.
Gerald J. Zambrella, C.E.M.
Gregory M. Elko, P.E.
Steven Ueland, P.E.

Caryn L. Barnes
Gerard M. Coscia, P.E.
Jason S. Engelhardt, P.E.
Edward H. Geibert, M.S.
Christopher M. Hager, P.E.
John J. McElroy, Jr., Ph.D., P.E.
Michael D. Szura, C.L.A., A.S.L.A.
Stewart H. Abrams, P.E.
Brian M. Conlon, P.E.
Jeffrey A. Smith, P.G.

January 24, 2012

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Manager
Philadelphia Department of Public Health
Environmental Health Services
321 University Avenue
Philadelphia, Pennsylvania 19104

RE: Notice of Submittal of Site Characterization/ Remedial Investigation Report
Area of Interest (AOI) 7
Sunoco, Inc. (R&M) Philadelphia Refinery
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574601

Dear Sir/Madam:

Notice is hereby given that Sunoco, Inc. (R&M) (Sunoco) is in the process of submitting a Site Characterization/Remedial Investigation Report to the Pennsylvania Department of Environmental Protection for AOI 7 located at the Sunoco Philadelphia Refinery, Philadelphia, Philadelphia County, Pennsylvania. The report indicates that the remediation planned will attain compliance with a combination of site-specific and the statewide health cleanup standards.

This notice is made under the provision of the Land Recycling and Environmental Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Colleen Costello

Colleen Costello, P.G.
Senior Principal

cc: Jim Oppenheim, Sunoco
Kevin Dunleavy, Sunoco

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Repackaged SCR_RIR\AOI 7\Appendices\Appendix A - NIR and Notices\RIR Municipal Notice_012412.DOC

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Manager
Philadelphia Dept. of Public Health
Environmental Health Services
321 University Avenue
Philadelphia, Pennsylvania 19104

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature]
☑ Agent
☐ Addressee

B. Received by (*Printed Name*) Joachin Rent

C. Date of Delivery 1/26/12

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☑ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number (*Transfer from service label*) 7011 1150 0001 9432 0713

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7011 1150 0001 9432 0713

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$ .45
Certified Fee	2.95
Return Receipt Fee (Endorsement Required)	2.35
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 5.75

Postmark Here

USPS DOYLESTOWN PA JAN 24 2012

Cindy

Sent To	Manager Philadelphia Dept. of Public Health
Street, Apt. No.; or PO Box No.	Environmental Health Services 321 University Avenue
City, State, ZIP+4	Philadelphia, Pennsylvania 19104

PS Form 3800, August 2006 See Reverse for Instructions

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Anna Dickerson being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

January 30, 2012

Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Anna Dickerson

Sworn to and subscribed before me this 30th day of January, 2012.

Mary Anne Logan
Notary Public

My Commission Expires:

NOTARIAL SEAL
Mary Anne Logan, Notary Public
City of Philadelphia, Phila. County
My Commission Expires March 30, 2013

Copy of Notice of Publication

Notification of Receipt of Site Characterization/ Remedial Investigation Report

Notice is hereby given that Sunoco Inc. (R&M) (Sunoco) is in the process of submitting a Site Characterization / Remedial Investigation Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Area of Interest (AOI 7) located at the Sunoco Philadelphia Refinery, Philadelphia, Pennsylvania. Sunoco has indicated in the report that site characterization activities have been completed at AOI 7 in accordance with the Land Recycling and Environmental Remediation Standards Act and the 2004 Memorandum of Agreement between the PADEP and U.S. Environmental Protection Agency (EPA) (a.k.a., the PA One Cleanup Program). This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

August 22, 2013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Manager
Philadelphia Department of Public Health
Environmental Health Services
321 University Avenue
Philadelphia, Pennsylvania 19104

Re: Remedial Investigation Report Addendum
Area of Interest (AOI) 7
Philadelphia Energy Solutions (PES) Facility
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574601

Dear Sir/Madam:

Notice is hereby given that Sunoco, Inc. (R&M) (Sunoco) is in the process of submitting a Remedial Investigation Report Addendum to the Pennsylvania Department of Environmental Protection for AOI 7 located at the Philadelphia Energy Solutions Refining and Marketing LLC Facility, Philadelphia County, Philadelphia, PA. The report indicates that the remediation planned will attain compliance with the site-specific remediation standards.

This notice is made under the provision of the Land Recycling and Environmental Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please call me at (215) 491-6500 if you have any question concerning the proposed remediation.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Patrick Troy
Staff Geologist

cc: Jim Oppenheim, Sunoco
Kevin Dunleavy, Sunoco
Charles Barksdale, PES
Jason Hanna, Langan
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Repackaged SCR_RIR\AOI 7\AOI-7 ADDENDUM\Appendices\Appendix A - SCR_RIR Notices\2013_0822_Philadelphia Department of Public Health_AOI 7 Final Report Notices.docx

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Manager
Philadelphia Dept. of Public Health
Environmental Health Services
321 University Avenue
Philadelphia, Pennsylvania 19104

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name)
C. Date of Delivery 8/23/13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☑ No

AUG 23 2013

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 2210 0000 1979 4351

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7012 2210 0000 1979 4351

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$ .46
Certified Fee	3.10
Return Receipt Fee (Endorsement Required)	2.55
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 6.11

Postmark Here
DOYLESTOWN, PA 18901
AUG 22 2013
USPS

Cindy

Sent To	Manager Philadelphia Dept. of Public Health
Street, Apt. No.; or PO Box No.	Environmental Health Services 321 University Avenue
City, State, ZIP+4	Philadelphia, Pennsylvania 19104

PS Form 3800, August 2006 See Reverse for Instructions

August 20, 2013

VIA EMAIL- ADS@PHILLYNEWS.COM

Legal Advertising Department – Daily News
P.O. Box 8263 – 4th Floor
Philadelphia, PA 19101
Attn: Mary Anne Logan

Re: Site Characterization/Remedial Investigation Report
Area of Interest (AOI) 7
Philadelphia Energy Solutions (PES) Facility
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574601

On behalf of Sunoco, Inc. (R&M), Langan Engineering and Environmental Services, Inc. requests that the following Public Notice be published in the Philadelphia Daily News under the legal notices section.

Notification of Submittal of a Remedial Investigation Report Addendum

Notice is hereby given that Sunoco, Inc. (R&M) *(remediator) is in the process of submitting a Remedial Investigation Report Addendum to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Area of Interest 7 (AOI 7) located at the Philadelphia Energy Solutions Refining and Marketing LLC (PES) Facility, Philadelphia County, Philadelphia, PA.*

The report indicates that the subject property has attained compliance with the site-specific remediation standards established under the Land Recycling and Environmental Remediation Standards Act. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please publish the notice as soon as possible and fax the proof of publication to me at (215) 491-6501. Please also mail the hard copy of the proof of publication and your invoice to my attention at the following address:

Langan Engineering & Environmental Services
Attn: Patrick Troy
2700 Kelly Road, Warrington, Pa. 18976

Should you have any questions or comments regarding the request, please contact me at (215) 446-2999.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Patrick Troy
Staff Geologist

cc: Jim Oppenheim, Sunoco
Kevin Dunleavy, Sunoco
Charles Barksdale, PES
Jason Hanna, Langan
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Repackaged SCR_RIR\AOI 7\AOI-7 ADDENDUM\Appendicies\SCR_RIR Notices\2013_0610_AOI 7_SCR_RIR Newspaper Notification_D.docx

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Florence Devlin being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

August 26, 2013

Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Florence Devlin

Sworn to and subscribed before me this 26th day of August, 2013.

Mary Anne Logan
Notary Public

My Commission Expires:

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MARY ANNE LOGAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires March 30, 2017

Copy of Notice of Publication

Notification of Submittal of a Remedial Investigation Report Addendum

Notice is hereby given that Sunoco, Inc. (R&M) (remediator) is in the process of submitting a Remedial Investigation Report Addendum to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Area of Interest 7 (AOI 7) located at the Philadelphia Energy Solutions Refining and Marketing LLC (PES) Facility, Philadelphia County, Philadelphia, PA.

The report indicates that the subject property has attained compliance with the site-specific remediation standards established under the Land Recycling and Environmental Remediation Standards Act. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

APPENDIX B
Soil Boring Logs

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-43**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.5'
DATES DRILLED:	28 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.5' for laboratory analysis	2.1 ppm	(Fill) clay, gravel, medium - dark brown; wet @ 2.5		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-45**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.5'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.5' for laboratory analysis	15.3 ppm	(Fill) clay, gravel, black, wet @ 3.5'		strong odor

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-46**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	0.5'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 0.5' for laboratory analysis	3.7 ppm	(Fill) stone, silt, sand, medium red- brown		auger refusal; possible concrete pad @ 0.5'

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-47**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	1.5'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.5' for laboratory analysis	34.9 ppm	(Fill) clay, black, timber, brick; wet @ 1.5'		strong odor

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-48**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	30 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	1.5 ppm	(Fill) clay, small gravel, fill, black - dark tan; wet @ 3.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-49**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.5'
DATES DRILLED:	30 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.5' for laboratory analysis	0.0 ppm	(Fill) gravel, sand, silt; wet @ 2.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-53**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**2.5'**
DATES DRILLED:	**30 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.5' for laboratory analysis	12.9 ppm	(Fill) clay, black, timber, gravel; wet @ 2.5'		strong odor

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-54**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	30 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	1112 ppm	(Fill) clay, black, brick, timber; wet @ 3.0'		strong odor

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-55**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.5'
DATES DRILLED:	30 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	USCS	COMMENTS
0					
	Sample taken @ 1.5' for laboratory analysis	0.9 ppm	(Fill) clay, gravel, sand, silt		
	Sample taken @ 2.5' for laboratory analysis	2.1 ppm	(Fill) sand, gravel, clay; wet @ 2.5'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-56**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.0'
DATES DRILLED:	28 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.0' for laboratory analysis		(Fill) gravel, clay, sand, fill, medium - dark brown; wet @ 2.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-58**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	4.0'
DATES DRILLED:	28 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	USCS	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	10.4 ppm	(Fill) sand, clay, rocks, gravel, gray - medium brown		
	Sample taken @ 4.0' for laboratory analysis	29.8 ppm	(Fill) clay, small gravel, sand, dark brown-black; wet @ 4.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-62**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	0.0 ppm	(Fill) sand, tan/light brown, wet @ 3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc.

BOREHOLE NO. **BH-12-64**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.5' for laboratory analysis	20.9 ppm	(Fill) clay, black, brick and timber		
	Sample taken @ 3.0' for laboratory analysis	8.4 ppm	(Fill) clay, black, stones, brick, timber; wet @ 3.0'		strong odor

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-67**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.0' for laboratory analysis	6.3 ppm	(Fill) rock, sand, clay, dark brown - black		
	Sample taken @ 3.0' for laboratory analysis	22.9 ppm	(Fill) clay, black, sand, gravel, brick, timber; wet @ 3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-68**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.5' for laboratory analysis	9.0 ppm	(Fill) rock, clay, sand, medium brown		
	Sample taken @ 3.0' for laboratory analysis	6.0 ppm	(Fill) rock, sand, medium-dark brown; wet @ 3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-69**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.5'
DATES DRILLED:	29 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.0' for laboratory analysis	0.0 ppm	(Fill) sand, silt, gravel, light brown		
	Sample taken @ 2.5' for laboratory analysis	0.0 ppm	(Fill) rock, gravel, sand, light brown/gray; wet @ 2.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-70**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	4.0'
DATES DRILLED:	28 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.0' for laboratory analysis	0.0 ppm	(Fill) rock, sand, dark brown/gray		
	Sample taken @ 4.0' for laboratory analysis	0.0 ppm	(Fill) rocks, sand, medium brown/gray; wet @ 4.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-72**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**3.5'**
DATES DRILLED:	**28 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.5' for laboratory analysis	0.0 ppm	(Fill) clay, sand, gravel, light gray / medium brown; wet @ 3.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-73**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**5.0'**
DATES DRILLED:	**28 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
-5	Sample taken @ 5.0' for laboratory analysis	0.0 ppm	(Fill) clay, light gray; wet @ 5.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-74**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**4.0'**
DATES DRILLED:	**28 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	0.0 ppm	(Fill) clay, gravel, dark brown		
	Sample taken @ 4.0' for laboratory analysis	0.0 ppm	(Fill) sand, gravel, silt, medium/dark brown; wet @ 4.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-75**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.0'
DATES DRILLED:	28 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	0.0 ppm	(Fill) sand, silt, rocks, dark brown		
	Sample taken @ 2.0' for laboratory analysis	4.2 ppm	(Fill) sand, clay, rocks, gravel, dark brown; wet @ 2.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-76**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**3.0'**
DATES DRILLED:	**28 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	1.2 ppm	(Fill) sand, gravel, rocks, red/medium brown		
	Sample taken @ 3.0' for laboratory analysis	0.0 ppm	(Fill) clay, black; wet @ 3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-77**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**3.0'**
DATES DRILLED:	**28 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
		11.7 ppm	(Fill) sand, gravel, gray		
	Sample taken @ 3.0' for laboratory analysis	2.7 ppm	(Fill) sand, silt, gravel, orange/medium brown, gray; wet @3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-78**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.0'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	0.0 ppm	(Fill) sand, clay, light brown		
	Sample taken @ 2.0' for laboratory analysis	0.0 ppm	(Fill) sand, clay, dark brown; wet @ 2.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-79**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**1.0'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	0.0 ppm	(Fill) gravel,sand, clay, brown; wet @ 1.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc.

BOREHOLE NO. **BH-12-80**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	0.0 ppm	(Fill) gravel, sand, rocks medium brown		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-82**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**1.0'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	0.0 ppm	(Fill) gravel, sand, little silt, medium brown; wet @ 1.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-83**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	4.5ppm	(Fill) sand, gravel, tan/gray		
		55.0ppm	(Fill) sand, clay, dark gray		
	Sample taken @ 3.0' for laboratory analysis	2.4ppm	(Fill) sand, clay, dark gray/black; wet @ 3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-84**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	168 ppm	(Fill) sand, gravel, gray/brown; wet @ 3.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-85**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	3.0'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.5' for laboratory analysis	0.0ppm	(Fill) gravel,sand, clay, dark brown, gray		
	Sample taken @ 3.0' for laboratory analysis	8.9ppm	(Fill) sand, clay, dark brown; wet @ 3.0'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-87**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**3.0'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	0.0ppm	(Fill) clay, silt, small gravel; dark brown, gray		
		0.0ppm	(Fill) dark gray, sandy, clay; moist		
	Sample taken @ 3.0' for laboratory analysis	0.0ppm	(Fill) dark gray,sandy clay; wet @ 3.0'		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc.

BOREHOLE NO. **BH-12-88**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	2.5'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 2.5' for laboratory analysis	19.3 ppm	(Fill) sand, gravel, clay, gray/brown; wet @ 2.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-90**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**0.5'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0			(Fill) Gravel, sands, little silt, medium brown, wet @ 0.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-91**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**0.5'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0	Sample taken @ 0.5' for laboratory analysis	0.0 ppm	(Fill) Gravel, sands, little silt, medium brown, wet @ 0.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-92**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**0.5'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 0.5' for laboratory analysis	0.0 ppm	(Fill) Gravel, orange/brown clay, some sands, wet @ 0.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-94**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	1.0'
DATES DRILLED:	27 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0	Sample taken @ 1.0' for laboratory analysis	0.0 ppm	(Fill) Gravel, sands, little silt, medium brown, wet @ 1.5'		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-98**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**1.0'**
DATES DRILLED:	**28 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 1.0' for laboratory analysis	50.8 ppm	(Fill) clay, black; wet @ 1.0		

Aquaterra Technologies, Inc

SUBSURFACE BORING LOG

BOREHOLE NO. **BH-12-99**

PROJECT:	Philadelphia Refinery	DRILLING CO.:	Aquaterra
SITE LOCATION:	AOI-7	DRILLING METHOD	Hand Auger (2" Diameter)
JOB NO.:	-	SAMPLING METHOD	Hand Auger
LOGGED BY:	Luke Mokrycki	TOTAL DEPTH:	0.5'
DATES DRILLED:	28 November 12		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 0.5' for laboratory analysis	0.0 ppm	(Fill) sand, clay, medium brown - dark gray; wet @ 0.5		

SUBSURFACE BORING LOG

Aquaterra Technologies, Inc

BOREHOLE NO. **BH-12-100**

PROJECT:	**Philadelphia Refinery**	DRILLING CO.:	**Aquaterra**
SITE LOCATION:	**AOI-7**	DRILLING METHOD	**Hand Auger (2" Diameter)**
JOB NO.:	-	SAMPLING METHOD	**Hand Auger**
LOGGED BY:	**Luke Mokrycki**	TOTAL DEPTH:	**3.0'**
DATES DRILLED:	**27 November 12**		

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
	Sample taken @ 3.0' for laboratory analysis	0.0ppm	(Fill) gravel, silt, sand, brown; wet @ 3.0'		

LANGAN

Log of Boring **BH-13-45** Sheet 1 of 1

Project: Sunoco PES Facility	Project No.: 2574601
Location: Philadelphia	Elevation and Datum: Approx.
Drilling Company: Langan Engineering	Date Started: 3/13/13 / Date Finished: 3/13/13
Drilling Equipment: Stainless Steel Hand Auger	Completion Depth: 2.5 ft / Rock Depth:
Size and Type of Bit: 2"	Number of Samples: Disturbed 2 / Undisturbed / Core
Casing Diameter (in): NA / Casing Depth (ft): NA	Water Level (ft.): First ▽ 2.5 / Completion ▼ / 24 HR. ▼
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Eric Dieck
Sampler: NA	Inspecting Engineer: Eric Dieck
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	PID Reading (ppm)	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft) 10 20 30 40	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Brown SILT with some gravel and wood, Fill	0	0						
			0	1						
		Black SILT with some gravel and wood, Fill	8							
			178	2						
		▽	43.6							
				3	1 2					Collected sample AOI7_BH-13-45_1.5-2_031313 at 12:30. Collected sample AOI7_BH-13-45_2-2.5_031313 at 12:45.
				4						
				5						
				6						
				7						
				8						
				9						
				10						
				11						
				12						
				13						
				14						
				15						
				16						
				17						
				18						
				19						
				20						

\\LANGAN.COM\DATA\PI\OTHER\SNEDDEN\LOGSFORERIC4.10.13.GPJ ... 8/13/2013 2:26:49 PM ... Report: Log - LANGAN ...Template TEMPLATE.GDT

LANGAN

Log of Boring **BH-13-46** Sheet 1 of 1

Project: Sunoco PES Facility	Project No.: 2574601
Location: Philadelphia	Elevation and Datum: Approx.
Drilling Company: Langan Engineering	Date Started: 3/13/13 / Date Finished: 3/13/13
Drilling Equipment: Stainless Steel Hand Auger	Completion Depth: 2 ft / Rock Depth:
Size and Type of Bit: 2"	Number of Samples: Disturbed 1 / Undisturbed / Core
Casing Diameter (in): NA / Casing Depth (ft): NA	Water Level (ft.): First 2 / Completion / 24 HR.
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Eric Dieck
Sampler: NA	Inspecting Engineer: Eric Dieck
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	PID Reading (ppm)	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft) 10 20 30 40	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Compacted SILT and GRAVEL, Fill		0						
		Black SAND and GRAVEL, Fill	0.8	1						
				2	1					Collected sample AOI7_BH-13-46_1.5-2_031313 at 11:00.
				3						
				4						
				5						
				6						
				7						
				8						
				9						
				10						
				11						
				12						
				13						
				14						
				15						
				16						
				17						
				18						
				19						
				20						

\\LANGAN.COM\DATA\PI\OTHER\SNEDDEN\LOGSFORERIC4.10.13.GPJ ... 8/13/2013 2:26:51 PM ... Report: Log - LANGAN ...Template TEMPLATE.GDT

LANGAN

Log of Boring **BH-13-47** Sheet 1 of 1

Project: Sunoco PES Facility	Project No.: 2574601
Location: Philadelphia	Elevation and Datum: Approx.
Drilling Company: Langan Engineering	Date Started: 3/13/13 / Date Finished: 3/13/13
Drilling Equipment: Stainless Steel Hand Auger	Completion Depth: 3 ft / Rock Depth:
Size and Type of Bit: 2"	Number of Samples: Disturbed 2, Undisturbed, Core
Casing Diameter (in): NA / Casing Depth (ft): NA	Water Level (ft.): First, Completion, 24 HR.
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Eric Dieck
Sampler: NA	Inspecting Engineer: Eric Dieck
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

Elev. (ft)	Sample Description	PID Reading (ppm)	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft) 10 20 30 40	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	Compacted GRAVEL and SILT, Fill		0						
			1						
	Black SILT with some gravel, Fill	7.2	2	1					Collected sample AOI7_BH-13-47_1.5-2_031313 at 14:15.
		72.7	3	2					Collected sample AOI7_BH-13-47_2.5-3_031313 at 14:30.
			4						
			5						
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

\\LANGAN.COM\DATA\PI\OTHER\SNEDDEN\LOGSFORERIC4.10.13.GPJ ... 8/13/2013 2:26:52 PM ... Report: Log - LANGAN ...Template TEMPLATE.GDT

LANGAN

Log of Boring **BH-13-48** Sheet 1 of 1

Project: Sunoco PES Facility	Project No.: 2574601
Location: Philadelphia	Elevation and Datum: Approx.
Drilling Company: Langan Engineering	Date Started: 3/13/13 / Date Finished: 3/13/13
Drilling Equipment: Stainless Steel Hand Auger	Completion Depth: 3 ft / Rock Depth:
Size and Type of Bit: 2"	Number of Samples: Disturbed 2, Undisturbed, Core
Casing Diameter (in): NA / Casing Depth (ft): NA	Water Level (ft.): First, Completion, 24 HR.
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Eric Dieck
Sampler: NA	Inspecting Engineer: Eric Dieck
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	PID Reading (ppm)	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft) 10 20 30 40	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Black and brown SILT and GRAVEL, Fill	0	0						
			0	1						
			29.3							
			42.5	2						
			86.0		1					Collected sample AOI7_BH-13-48_1.5-2_031313 at 9:00.
			89.5	3						
					2					Collected sample AOI7_BH-13-48_2.5-3_031313 at 9:40.
				4						
				5						
				6						
				7						
				8						
				9						
				10						
				11						
				12						
				13						
				14						
				15						
				16						
				17						
				18						
				19						
				20						

\\LANGAN.COM\DATA\PI\OTHER\SNEDDEN\LOGSFORERIC4.10.13.GPJ ... 8/13/2013 2:26:53 PM ... Report: Log - LANGAN ...Template TEMPLATE.GDT

APPENDIX C
Stantec Indoor Air Assessment Report

Evaluation of Specific Volatile Organic Compounds in Occupied Buildings at the former Sunoco Philadelphia Refinery

Sunoco, Inc. (R&M) Philadelphia Refinery Remediation Program

Philadelphia, Pennsylvania

Prepared for:

Sunoco, Inc. (R&M)
10 Industrial Highway MS4
Lester, Pennsylvania 19029

March 22, 2013

Project Number: 213402094

Stantec

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester, PA 19380
Phone: (610) 840-2540
Fax: (610) 840-2501

March 20, 2013

EVALUATION OF SPECIFIC VOLATILE ORGANIC COMPOUNDS IN OCCUPIED BUILDINGS AT THE FORMER SUNOCO PHILADELPHIA REFINERY

SUNOCO, INC. (R&M) PHILIDELPHIA
REFINERY REMEDIATION PROGRAM

Prepared For:

Sunoco, Inc. (R&M)
10 Industrial Highway MS4
Lester, Pennsylvania 19029

Prepared By:

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester, PA 19380

Project Number: 213402094

Written by:

Deborah L. Gray, Ph.D., DABT
National Director, Risk Assessment and Toxicology Practice

Reviewed by:

Daniel G. Feldt, MPH, CIH
Sr. Industrial Hygienist

John Reiter, CIH
Reiter & Company, LLC

Jennifer Menges
Senior Associate

Michael B. Roznowski, CHMM
Associate

Executive Summary

On Wednesday, October 24 and Thursday, October 25, 2012, Stantec Consulting Services Inc. (Stantec) conducted a comprehensive study of airborne volatile organic compounds (VOCs) in occupied buildings at the former Sunoco, Inc. (R&M) Philadelphia Refinery, now Philadelphia Energy Solutions (PES) Refining and Marketing (R&M) LLC, located at 3144 Passyunk Avenue, Philadelphia, Pennsylvania (the refinery). The study was conducted as part of Sunoco's participation in a real estate and refinery operation transaction. The study was performed to document the concentration of a number of specific chemicals which may be present inside occupied buildings from refinery activities or related refinery conditions.

Methodology

An initial site visit was conducted on September 18 and 19, 2012 by Stantec and Sunoco to select the occupied buildings to be evaluated and to determine the tentative number and locations of samples to be collected during the study. Based on the initial site visit, a sampling plan was subsequently developed which specified collection of air samples inside occupied buildings on the refinery property for analysis of petroleum-related VOCs in air utilizing United States Environmental Protection Agency (US EPA) Method TO-15 for analysis. This method calls for the collection of air samples into specially prepared vacuum SUMMA canisters (or cans). The sampling plan also specified collection of these air samples over a four (4) hour period to accommodate the possible variability in ambient VOC concentrations.

Samples were collected inside occupied areas of the selected buildings and outdoor air samples were collected for comparison. Thirty-four (34) samples were collected inside buildings and seven (7) samples outdoors. Three (3) trip blanks were also submitted for analysis. Compounds of interest for this study were consistent with the Pennsylvania Department of Environmental Protection's (PADEP) Short List of Petroleum Products, specifically: methyl tert-butyl ether (MTBE), 1,2-dichloroethane, benzene, toluene, 1,2-dibromoethane (ethylene dibromide), ethylbenzene, xylenes, isopropylbenzene (cumene), 1,2,4-trimethylbenzene (1,2,4-TMB), and 1,3,5-trimethylbenzene (1,3,5-TMB). The concentrations of VOCs detected in each sample of indoor and outdoor air were compared to occupational exposure limits (OELs) and risk-based screening levels published by US EPA and PADEP. Summary statistics were calculated to compare the ranges of concentrations of VOCs found in indoor air to concentrations in outdoor air.

Results

The concentrations of all compounds detected in indoor and outdoor air were many orders of magnitude less than the Occupational Safety and Health Administration (OSHA) Permissible

Exposure Limit (PEL) time-weighted averages (TWAs) and the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs®) TWA.

The maximum concentrations of all compounds detected in all samples were equal to (benzene only) or less than the corresponding risk-based US EPA Regional Screening Levels (RSLs) and the PADEP Indoor Air Quality (IAQ) criteria for exposure in industrial environments. Note that the US EPA RSL concentrations for chemicals with cancer health effects (MTBE, benzene, and ethylbenzene) were multiplied by a factor of ten (10) to reflect a target cancer risk of 1 in 100,000 or 1E-05 which is consistent with the Pennsylvania risk-based standards.

There were notable differences in the concentrations of most of the compounds detected inside the individual buildings that are not evident from the arithmetic means of the analytical results for all indoor air samples. Specifically, the highest concentrations of benzene were found in the Point Breeze Lab samples (11 and 8.4 µg/m^3) and the 440 Building samples (9 and 7.2 µg/m^3). The highest concentrations of toluene (88 and 330 µg/m^3), ethylbenzene (11 and 6 µg/m^3), total xylenes (51.1 and 31.6 µg/m^3) were found in the PB Lab samples (west lab and 2nd floor office, respectively). The highest concentrations of 1,3,5-TMB (3.9 µg/m^3) and 1,2,4-TMB (11 µg/m^3) were found in the PB Lab, 2nd floor office sample although the PB Lab, west lab sample was not significantly different than other indoor air sample locations.

The concentrations of benzene, toluene, ethylbenzene, xylenes, and trimethylbenzenes in buildings other than the 440 Building and the PB Lab were comparable to the concentrations in outdoor air.

Conclusions

The findings of this evaluation indicate that the indoor and outdoor concentrations of VOCs associated with refinery operations were orders of magnitude lower than occupational exposure limits, and lower than or equal to (benzene only) conservative risk-based screening levels published by US EPA and PADEP for long-term exposures in industrial settings. Note that the US EPA RSL concentrations for chemicals with cancer health effects were adjusted to be consistent with the Pennsylvania risk-based standards. Assuming that the concentrations of petroleum-related VOCs found inside the occupied buildings in late October 2012 are representative of long-term conditions, there do not appear to be health concerns for people who work inside the buildings from exposure to these chemicals.

Table of Contents

1.0 INTRODUCTION 1

2.0 CHEMICAL CONSTITUENTS AND APPLICABLE EXPOSURE LIMITS 3

3.0 SAMPLING METHODOLOGY 4
3.1 COLLECTION OF AMBIENT AIR SAMPLES 4
3.2 QUALITY ASSURANCE PROCEDURES FOR SAMPLE COLLECTION 4

4.0 SAMPLING LOCATIONS 6

5.0 ANALYTICAL RESULTS 7
5.1 COMPARISON OF INDOOR AIR SAMPLES 8
5.1.1 Indoor Air Samples 8
5.1.2 Outdoor Ambient Air Samples 9

6.0 COMPARISON OF INSIDE SAMPLES TO APPLICABLE EXPOSURE LIMITS 10
6.1 OCCUPATIONAL EXPOSURE LIMITS 10
6.2 RISK-BASED SCREENING LEVELS 10
6.2.1 US EPA RSLs 10
6.2.2 PADEP Indoor Air Quality Criteria 11
6.2.3 Comparison of Results to Risk-Based Screening Levels 11

7.0 SUMMARY AND CONCLUSIONS 12

8.0 REFERENCES 14

ATTACHMENTS

Table 1	**Sample Locations and Parameters**
Table 2	**Laboratory Analytical Results**
Table 3	**Summary Statistics**
Figure 1	**Site Plan Showing Sampling Locations**
Appendix A	**Laboratory Analytical Reports**

1.0 Introduction

Stantec Consulting Services Inc. (Stantec) conducted a comprehensive study of airborne volatile organic compounds (VOCs) in occupied buildings at the former Sunoco, Inc. (R&M) Philadelphia Refinery, now Philadelphia Energy Solutions (PES) Refining and Marketing (R&M) LLC, located at 3144 Passyunk Avenue, Philadelphia, Pennsylvania (the refinery). The study was conducted as part of Sunoco's participation in a real estate and refinery operation transaction. The study was performed to document the concentration of a number of specific chemicals that may be present inside occupied buildings from refinery activities or related refinery conditions.

During a real estate and operational transition involving a facility such as this refinery, the potential for residual chemical exposure in occupied buildings exists and it is reasonable to assess the potential adverse health risk.

This facility refines, processes, and blends transportation fuels. The chemicals of interest for this study were consistent with the Pennsylvania Department of Environmental Protection (PADEP) Table IV-9 Short List of Petroleum Products (PADEP 2004), specifically: methyl tertiary-butyl ether (MTBE), 1,2-dichloroethane, benzene, toluene, 1,2-dibromoethane (ethylene dibromide), ethylbenzene, xylenes, isopropylbenzene (cumene), 1,2,4-trimethylbenzene (1,2,4-TMB), and 1,3,5-trimethylbenzene (1,3,5-TMB). Although the PADEP Table IV-9 Short List is for analysis of soil and water samples, all of the compounds listed for water except naphthalene, are volatile compounds of interest in air.

An initial site visit was conducted on Tuesday, September 18, and Wednesday, September 19, 2012 by Jim Oppenheim (Sunoco), Jennifer Menges (Stantec), and John Reiter (Stantec) to select the occupied buildings where sampling would be conducted and to determine the tentative number and locations of samples to be collected during the study. The sampling plan developed based on this initial site visit, and subsequently implemented by Stantec field staff in cooperation with refinery personnel in October 2012, specified collection of air samples inside occupied buildings on the refinery property for analysis of concentrations of VOCs in air by United States Environmental Protection Agency (US EPA) Method TO-15 (US EPA 1999).

US EPA Method TO-15 calls for the collection of air samples into specially prepared vacuum SUMMA canisters (or cans). The sampling plan specified collection of these air samples over a four (4) hour period of time to accommodate the possible variability in ambient VOC concentrations. Samples were collected inside occupied areas of the buildings and outside samples were collected for comparison. Thirty-four (34) samples were collected inside of buildings and seven (7) samples were collected outdoors. Three (3) trip blanks were also submitted for laboratory analysis.

Analytical results were compared to occupational exposure limits (OELs), specifically the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) and the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values

(TLVs®). Results were also compared to current (November 2012) US EPA risk-based Regional Screening Levels (RSL) for industrial occupancies and PADEP Indoor Air Quality (IAQ) criteria for industrial occupancies. Additionally, PADEP-referenced odor thresholds were cited.

2.0 Chemical Constituents and Applicable Exposure Limits

The facility is a refinery that processes and blends large quantities of petroleum-based transportation fuels. The refining and blending processes generate the volatile petroleum-based organic compounds of interest for this investigation. In addition to being flammable, these volatile compounds may cause adverse health effects ranging from upper respiratory tract irritation at lower concentrations of exposure to more severe effects such as central nervous system depression or intoxication at high concentrations of exposure. Benzene is also considered to be a human carcinogen based on epidemiologic studies demonstrating an increased risk for acute myelogenous leukemia in occupational cohorts exposed to high concentrations (e.g. exceeding approximately 10 parts per million (ppm)) over many years (ATSDR 2007). The potential for adverse health effects correlates with increasing concentrations and duration of exposure.

All of the compounds monitored in this study have relevant occupational standards and risk-based screening levels. The OELs were developed based on the precept that nearly all persons may be exposed to a concentration of the chemical at or below the exposure limit, day after day, week after week, for a working lifetime, without experiencing any adverse health effects due to the chemical exposure.

Risk-based screening levels are concentrations of chemicals in environmental media (soil, ambient air, and drinking water) that correspond to pre-determined levels of cancer risk and/or non-cancer hazard, under the assumption that an individual will be exposed daily over thirty (30) years (residential) or twenty-five (25) years working life-time. Two sources of risk-based screening concentrations are presented in this report: US EPA RSLs and PADEP IAQ criteria. All screening concentrations used to evaluate sampling results were developed for exposures in industrial settings.

The US EPA RSLs have been harmonized across US EPA Regions and are generally accepted as a quick and conservative method for initial evaluation of constituents found in environmental media. RSLs are presented by the US EPA as being protective for members of the general population (including sensitive groups) over a lifetime. Thus concentrations of chemicals in environmental media that are less than the RSLs are believed to be of no concern for public health. Concentrations of chemicals above conservative RSLs do not necessarily mean that health effects will occur as a result of exposure, but that further evaluation of the situation should be considered. There are carcinogenic target risk (TR) screening concentrations and non-carcinogenic hazard index (HI) screening concentrations. All chemicals produce non-cancer health effects at some level of exposure and some may also be carcinogenic. Screening concentrations generally (although not always) reflect the more sensitive outcome and lowest associated concentration.

Although the non-residential PADEP IAQ criteria were developed under the Pennsylvania Land Recycling Program to assist in the evaluation of vapor intrusion into non-residential buildings, these risk-based concentrations are analogous to US EPA RSLs and provide additional references for evaluating the results of the samples collected during this study.

3.0 Sampling Methodology

3.1 COLLECTION OF AMBIENT AIR SAMPLES

Ambient air samples were prepared by first checking the laboratory-provided SUMMA canister vacuum using a digital gauge and documenting the pre-sample pressure. Flow regulators with integral pressure gauges were attached to the canisters and tightened by hand. Sampling was initiated by opening the SUMMA canister valve to its fully open position.

Samples were collected at breathing zone height by placing the SUMMA canisters on elevated surfaces so that the sample collection intake ports were approximately three (3) to six (6) feet above the ground or floor surface. Samples were collected for approximately four (4) hours. While grab samples may have been sufficient, sample durations were intentionally longer to provide some assurance that if the concentration of the compound(s) were variable, the sample would be representative.

Samples were collected at indoor and outdoor locations previously selected and discussed during the initial site visit and sampling plan development. However, since sample conditions are dynamic and may have been different at the time of sample collection, the field technicians used their best judgment in sample location selection and, as a result, some locations may be different than originally planned. Three (3) trip blanks were provided to the lab for analysis.

3.2 QUALITY ASSURANCE PROCEDURES FOR SAMPLE COLLECTION

Sample quality assurance encompasses procedures used for pre-sample preparation; handling of samples before, during, and after collection; elimination of potential cross contamination; and elimination of collection of interfering compounds or materials. The need for some of these is unnecessary when using SUMMA canisters due the inherent relatively failsafe technology.

Flow rate and volume are not critical since the sample methodology is for whole air (i.e., a prescribed total volume) regardless of the rate of sampling or total volume of air collected. The flow regulators provide an approximate canister fill time. Following sample completion the final pressure is recorded for assurance that air was indeed collected into the canister.

Contemporary sampling media provides little opportunity for cross-contamination or external contamination. SUMMA canisters were cleaned and prepared by the analytical laboratory in a manner consistent and appropriate for re-use and the methodology and compounds selected for analysis.

Onsite recordkeeping included SUMMA can serial number, flow controller serial number, start time, stop time, total sample time, location of sample, pre-sample pressure, post-sample pressure, and notes pertaining to the location of the sample. This information is provided in Table 1.

The laboratory received the samples according to their strict receipt requirements and documentation. A *Sample Acceptance Check Form* is provided with the laboratory analytical reports provided in Appendix A.

4.0 Sampling Locations

Figure 1 illustrates the locations of buildings in which samples were collected and outside sample locations. The indoor sample locations were selected during the initial site visit by Jim Oppenheim (Sunoco), Jennifer Menges (Stantec), and John Reiter (Stantec). The indoor sample locations were selected based on the current and anticipated occupancy and use of the buildings, populations in the buildings, and locations of occupants within the buildings. The number and locations of indoor air samples per building were selected to be representative of conditions and potential exposure to the building occupants. Outdoor sample locations were selected based on the proximity to buildings in which samples were collected, and in some instances, proximity to pumping and product handling equipment. The number and locations of outdoor air samples were selected to be representative of petroleum-related compounds in ambient air that may contribute to the presence of the same compounds in indoor air.

Samples were collected in building locations identified in Table 1 and shown on Figure 1. Indoor air samples were collected in the following locations:

- Blending & Shipping (B&S) Office
- 24 Gate Building
- Girard Point (GP) Training Building
- GP Main Office Building
- 440 Building
- 15 Pump House
- North Yard Scale House
- Schuylkill River Tank Farm (SRTF) Propane Loading
- SRTF Main Pump House
- Point Breeze (PB) Main Office Building
- PB Lab
- PB Refinery Hall
- PB Maintenance Shop

Duplicate samples were collected in the 24 Gate Building (1st floor), the GP Main Office Building (2nd floor east), and the PB Refinery Hall (2nd floor east wing).

Outdoor samples were collected in the following locations:

- near the B&S Office
- outside the GP Main Office Building
- outside 15 Pump House, under the equipment roof at grade
- outside 15 Pump House, under the equipment roof approximately eight (8) to ten (10) feet below grade
- outside the North Yard Scale House
- outside the SRTF Main Pump House
- outside in the PB gate area, near the PB buildings

5.0 Analytical Results

Table 1 lists the sample location, date of sampling, start time, stop time, total sample duration, canister ID, regulator ID, pre-sample pressure, and post-sample pressure. Table 2 presents the analytical results for each indoor and outdoor sample location. Summary statistics for indoor and outdoor air samples are presented in Table 3 along with occupational exposure standards and risk-based screening concentrations. Laboratory analytical reports are provided in Appendix A.

The table below presents the arithmetic mean for all compounds detected in two (2) or more samples, or the only concentration detected. The maximum detected concentrations are shown below the means in bold, italic font. Two (2) of the compounds of interest, 1,2-dichloroethane and 1,2-dibromoethane were not detected in any of the samples and are not included on this summary table. The three (3) duplicate samples corresponding to sample numbers 3, 15, and 40 on Table 2 yielded analytical results that were virtually identical to the results of the corresponding "sample" and are not factored into the summary statistics.

Summary of Air Sampling Results [1)]

Compound	OSHA PEL [2)]	ACGIH TLV [3)]	RSL Ind. [4)]	PADEP Ind. [5)]	Indoor		Outdoor	
					Freq. Detect	Concentration (mean / ***max***)	Freq. Detect	Concentration (mean / ***max***)
MTBE [6)]	—	1.8E+05	4.7E+02	3.1E+02	2/34	1.28E+00 ***1.6E+00***	0/7	—
Benzene	3.19E+03	1.6E+03	1.6E+01	1.1E+01	34/34	2.9E+00 ***1.1E+01***	6/7	2.62E+00 ***4.9E+00***
Ethylbenzene	4.34E+05	8.68E+04	4.90E+01	7.30E+01	30/34	1.77E+00 ***1.1E+01***	2/7	1.97E+00 ***3.1E+00***
Toluene	7.54E+05	7.54E+05	2.20E+04	1.20E+03	34/34	1.88E+01 ***3.3E+02***	7/7	7.61E+00 ***1.9E+01***
Xylenes	4.34E+05	4.34E+05	4.40E+02	3.00E+02	34/34	7.50E+00 ***5.11E+01***	5/7	6.55E+00 ***1.71E+01***
Cumene	2.46E+05	2.46E+05	1.80E+03	1.10E+03	17/34	1.42E+00 ***2.6E+00***	1/7	2.0E+00 ***2.0E+00***
1,3,5-TMB [7)]	—	1.23E+05	3.10E+01	1.70E+01	7/34	1.53E+00 ***3.9E+00***	1/7	1.6E+00 ***1.6E+00***
1,2,4-TMB [8)]	—	1.23E+05	3.10E+01	1.70E+01	31/34	1.96E+00 ***1.1E+01***	4/7	1.69E+00 ***3.6E+00***

Footnotes:

1) All concentrations, including those for occupational standards are given in $\mu g/m^3$
2) OSHA Permissible Exposure Limit (PEL)
3) ACGIH Threshold Limit Value (TLV)
4) EPA Regional Screening Level (RSL) for industrial exposure
5) Pennsylvania Department of Environmental Protection IAQ criteria for industrial exposure
6) methyl tert-butyl ether
7) 1,3,5-trimethylbenzene (RSL for 1,2,4-trimethylbenzene)
8) 1,2,4-trimethylbenzene

The analytical results are discussed in the following sections with concentrations provided in micrograms per cubic meter (µg/m^3).

5.1 COMPARISON OF INDOOR AIR SAMPLES

5.1.1 Indoor Air Samples

Of the ten (10) compounds analyzed (m,p-xylenes and o-xylene were combined into total xylenes), 1,2-dichloroethane and 1,2-dibromoethane were not detected in any sample and MTBE was detected only in two (2) samples, both on the second floor of the PB Refinery Hall. Benzene, toluene, and xylene were detected in the majority of the indoor and outdoor samples. No compounds were detected in the trip blanks.

There were notable differences in the concentrations of most of the compounds detected inside the individual buildings that are not evident from the arithmetic means of the analytical results for all indoor air samples. Specifically, the highest concentrations of benzene were found in the PB Lab samples (11 and 8.4 µg/m^3) and the 440 Building samples (9 and 7.2 µg/m^3). The highest concentrations of toluene (88 and 330 µg/m^3), ethylbenzene (11 and 6 µg/m^3), total xylenes (51.1 and 31.6 µg/m^3) were found in the PB Lab samples (west lab and 2nd floor office, respectively). The highest concentrations of 1,3,5-TMB (3.9 µg/m^3) and 1,2,4-TMB (11 µg/m^3) were found in the PB Lab, 2nd floor office sample although the PB Lab, west lab sample was not significantly different than other indoor air sample locations.

MTBE was detected only in samples collected in the PB Refinery Hall building (2nd floor, both conference room and east wing) and was undetected in any other inside or outside sample.

The concentrations of benzene, toluene, ethylbenzene, xylenes, and trimethylbenzenes in buildings other than the 440 Building and the PB Lab were similar to the concentrations in outdoor air. As shown in the table below, the range of concentrations detected in air samples from the 440 Building and the PB Lab are compared to the range of concentrations found in all of the other buildings (as a group; not including non-detects) from which samples were collected.

Range of Concentrations Detected in Indoor Air by Building [1)]

Compound	440 Building		PB Lab		All Other Buildings		Outdoor	
	low	high	low	high	low	high	low	high
MTBE [2)]	—	—	—	—	0.96	1.6	—	—
Benzene	7.2	9.0	8.4	11	0.94	4.3	1.2	4.9
Ethylbenzene	0.97	1.8	6.0	11	0.74	2.9	0.83	3.1
Toluene	8.2	8.3	88	330	3.6	14	2.0	19
Xylenes	4.4	5.8	31.6	51.1	2.5	14.7	2.0	17.1
Cumene	1.9	2.5	1.3	2.6	0.77	2.1	2.0	2.0
1,3,5-TMB [3)]	—	—	1.4	3.9	0.87	1.3	1.6	1.6
1,2,4-TMB [4)]	1.2	1.3	3.9	11	0.78	4.0	0.92	3.6

Footnotes:

1) All concentrations are given in $\mu g/m^3$
2) methyl tert-butyl ether
3) 1,3,5-trimethylbenzene
4) 1,2,4-trimethylbenzene

It is apparent that the concentrations of VOCs found indoors on the second floor of the PB Lab were higher than in the other buildings and higher than outdoor air. In particular, the lowest concentrations of ethylbenzene, toluene, and total xylenes detected in the PB Lab were higher than the highest concentrations of those same compounds found in all other buildings combined. These results indicate that sources in the PB Lab were likely contributing to the concentrations of VOCs in this space.

5.1.2 Outdoor Ambient Air Samples

From the discussion above, it can be seen that the range of VOC concentrations detected in samples of outdoor air overlap the range of the same compounds detected in air from all of the buildings except for the PB Lab. While benzene, toluene, xylenes, and 1,2,4-TMB were found in more than 50% of the outdoor air samples as shown in Table 3, MTBE, cumene, and 1,3,5-TMB were less prevalent in outdoor air than in indoor air.

With the exceptions of the 440 Building and the PB Lab noted previously, the range of concentrations of VOCs were similar in indoor and outdoor air.

6.0 Comparison of Inside Samples to Applicable Exposure Limits

6.1 OCCUPATIONAL EXPOSURE LIMITS

OELs published as OSHA PELs and ACGIH TLVs® are presented in Table 3 for all constituents for which these were available. ACGIH TLVs are health-based values and refer to concentrations of chemicals to which it is believed nearly all workers may be repeatedly exposed, day after day, over a working lifetime, without adverse health effects. The majority of OSHA PELs are based on 1969 TLVs with the exception that some have been updated as chemical-specific standards to reflect more current toxicological data and research (e.g., benzene).

As shown by Table 3, the concentrations of all detected compounds inside the buildings and in outdoor air samples are more than 100 times lower than the lowest OEL (benzene).

6.2 RISK-BASED SCREENING LEVELS

US EPA RSLs and PADEP IAQ criteria concentrations for exposure to constituents in air in industrial settings are presented on Table 3 and discussed briefly below.

6.2.1 US EPA RSLs

US EPA RSLs for carcinogenic chemicals are derived to correspond to an excess lifetime cancer risk of 1 in 1,000,000 (1 in 1 million or 1E-06) for a person (receptor) who is assumed to be exposed to that concentration over an extended period of time (twenty-five (25) years for industrial). The RSL concentrations for cancer health effects (MTBE, benzene, and ethylbenzene) were multiplied by a factor of 10 to correspond to the Pennsylvania target risk of 1 in 100,000 (1 in one hundred thousand or 1E-05). To put the conservatism of the risk-based screening levels for cancer health effects into perspective, between 1 in 4 and 1 in 3 people in the United States develop some type of cancer during their lifetime.

RSLs for chemicals that produce adverse non-cancer effects are concentrations that are very unlikely to produce health effects in people who are exposed over many years. Concentrations of constituents below applicable RSL concentrations are generally not considered to be of concern for public health. Concentrations above RSLs do not necessarily mean that adverse health effects will occur, but do indicate that additional evaluation may be appropriate. All RSL concentrations for non-cancer health effects (toluene, all xylene isomers, cumene and both trimethylbenzene isomers) correspond to a Hazard Quotient (HQ) of 1.0. The HQ is the ratio of the potential exposure to the chemical on a daily basis to the level of exposure at which no non-cancer adverse health effects would be expected to occur. Like the risk-based screening levels for cancer as a health outcome, screening levels for non-cancer health effects are also extremely conservative (protective). No adjustments to non-cancer screening level concentrations were required because both the EPA RSLs and PADEP IAQ criteria were derived to correspond to HQ of 1.0.

6.2.2 PADEP Indoor Air Quality Criteria

Similar to the US EPA RSLs, the PADEP IAQ criteria for evaluating vapor intrusion into non-residential buildings are derived using risk-based algorithms. The concentrations correspond to a target cancer risk of 1E-05 and HQ of 1.0. These values were developed as guidelines for remediation and were published in the Land Recycling Program Technical Guidance Manual (January 24, 2004). For the majority of the compounds found in this investigation, the US EPA RSLs and PADEP IAQ criteria values are similar. The most notable exception is toluene, where the EPA RSL is approximately ten (10) times higher than the PADEP IAQ criteria. It should also be noted that the PADEP criteria were published in 2004 and the EPA RSLs are current as of November 2012.

The PADEP odor thresholds are also shown on Table 3. None of the petroleum-related compounds selected for analysis in indoor or outdoor samples were detected in concentrations approaching or exceeding these published odor thresholds.

6.2.3 Comparison of Results to Risk-Based Screening Levels

As can be seen from Table 3, none of the concentrations of VOCs detected in either samples of indoor air or outdoor air were higher than the corresponding risk-based screening levels for long-term exposure in an industrial setting. The highest concentration of benzene found in the second floor of the PB Lab (11 $\mu g/m^3$) was equal to the PADEP industrial (non-residential) IAQ criteria, but slightly less than the current (November 2012) EPA RSL (16 $\mu g/m^3$) adjusted to a cancer risk of 1E-05.

7.0 Summary and Conclusions

With the exception of the concentrations of all chemicals found in the air of the PB Lab, and for benzene in the 440 Building, the average indoor concentrations of VOCs were similar to the average outdoor concentrations.

The concentrations of all chemicals detected in indoor and outdoor air were several orders of magnitude less than the OSHA PEL TWAs and the ACGIH TLV® TWAs. No concentration of any chemical remotely approached the corresponding odor threshold listed by PADEP.

The maximum concentrations of all chemicals detected in all samples were equal to (benzene in the PB Lab) or less than the corresponding conservative risk-based US EPA RSL and the PADEP IAQ criteria for exposure in industrial environments. Note that the US EPA RSL concentrations for chemicals with cancer health effects (MTBE, benzene, and ethylbenzene) were multiplied by a factor of ten (10) to reflect a target cancer risk of 1 in 100,000 or 1E-05 which is consistent with the Pennsylvania risk-based standards. US EPA RSLs are derived to correspond to a target cancer risk of 1 in 1,000,000 or 1E-06. Non-cancer screening criteria (toluene, xylenes, 1,3,5-TMB and 1,2,4-TMB) correspond to a HQ of 1.0.

In general, the concentrations of petroleum-related VOCs found in the air inside and outside of the buildings were low, considering that the facility is a petroleum refinery. The concentrations of individual VOCs found during this investigation can be put into perspective by comparing the results to regional ambient air concentrations reported by PADEP.

Regional ambient air quality in the Philadelphia area where the refinery is located is best represented by data from the Marcus Hook monitoring station (latitude 39.8178, longitude -75.4142). The table below shows the arithmetic mean indoor and outdoor concentrations of benzene, toluene, ethylbenzene, xylenes (m-, p- isomers), 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene documented at the facility alongside regional outdoor air concentrations from the Marcus Hook monitoring station (PADEP 2003).

Comparison of Concentrations Detected to Regional Air [1)]

Compound	***Facility Results [2)]***		***Marcus Hook [3)]***
	Indoors	***Outdoors***	
Benzene	2.9 (±2.45)	2.62 (±1.48)	2.84
Ethylbenzene	1.77 (±1.99)	1.97 (±1.61)	0.91
Toluene	18.77 (±56.76)	7.61 (±5.65)	5.46
Xylenes (m,p)	5.67 (±7.44)	4.86 (±4.59)	2.91
1,3,5-TMB [4)]	1.53 (±1.06)	1.6	0.34
1,2,4-TMB [5)]	1.96 (±1.91)	1.69 (±1.29)	0.88

Footnotes:

1) All concentrations are given in $\mu g/m^3$
2) *Mean (Standard Deviation)* values from Table 3
3) From PADEP 2003
4) 1,3,5-trimethylbenzene
5) 1,2,4-trimethylbenzene

As would be expected, the concentrations of petroleum-related compounds in the outdoor air at the facility were somewhat higher than regional background. However, the average concentrations of benzene in both indoor and outdoor air at the facility were similar to the annual average concentration reported for the Marcus Hook monitoring station in 2000 (PADEP 2003). As discussed previously, the arithmetic mean of the toluene concentrations from all of the indoor air samples is highly influenced by the concentrations detected in the PB Lab.

In conclusion, the findings of this study show that the concentrations of volatile organic compounds associated with refinery operations found in indoor and outdoor air were orders of magnitude lower than occupational exposure standards, and lower than or equal to (benzene only) conservative risk-based screening levels published by US EPA and PADEP for long-term exposures in industrial (non-residential) settings. The concentrations of petroleum-related compounds detected in the air inside occupied buildings on the former Sunoco Philadelphia Refinery are not anticipated to pose an adverse health risk for persons working in those buildings.

8.0 References

Agency for Toxic Substances and Disease Registry (ATSDR), Toxicological Profile for Benzene, August, 2007.

American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, ACGIH Publication No. 0113, 2013.

Pennsylvania Department of Environmental Protection (PADEP), Bureau of Land Recycling and Land Management, Technical Guidance Manual-Section IV.A.4 Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard. Table 3-Indoor Air Criteria, January 24, 2004.

Pennsylvania Department of Environmental Protection, Southern Delaware County Air Monitoring Project, Third Interim Report. Table 2.3, July 31, 2003. (http://www.dep.state.pa.us/dep/deputate/airwaste/aq/toxics/projects/sdel/sdelrpt3.pdf)

Code of Federal Regulations Chapter 29 Part 1910, Occupational Safety and Health Standards, Subpart Z – Toxic and Hazardous Substances, Table Z-1 Limits for Air Contaminants. (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9992)

US EPA Regional Screening Levels Table, November 2012.

US EPA, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition. Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/ Mass Spectrometry (GC/MS). January 1999.

FIGURE

SOURCE: BASEMAP PROVIDED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES

N

LEGEND

- OUTDOOR AIR SAMPLING LOCATION
- AREA OF INTEREST
- BUILDING LOCATION FOR INDOOR AIR SAMPLING

FIGURE 1

SITE PLAN

FOR

Sunoco, Inc. (R&M)
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA. 19145

0 250 500 FEET

SCALE: AS SHOWN
DATE: 8/29/2013
DRN: TFB
CHD: JLM

TABLES

Table 1: Sample Locations and Parameters - Sunoco Philadelphia Refinery

Sample No.	Location/Description	Date	Start Time	Stop Time	Sample Duration (hr:min)	Canister ID	Regulator ID	Pre-Sample Pressure, (PSI) [1]	Post-Sample Pressure, (PSI) [1]
1	B&S Office	10/24/2012	10:35	14:35	4:00	AC01003	FCA00317	29.5	8.0
2	B&S Office (outside)	10/24/2012	10:37	14:39	4:02	AC00760	FCA00595	29.5	13.0
3	24 Gate Building (1st floor)	10/24/2012	10:50	14:50	4:00	AC01853	FCA00134	29.5	7.0
4	24 Gate Building (2nd floor)	10/24/2012	10:52	14:52	4:00	AC01010	FCA00188	29.6	7.3
5	GP Training Building (1st floor vending area)	10/24/2012	11:07	15:07	4:00	AC01928	FCA00161	29.5	9.0
6	GP Training Building (1st floor west)	10/24/2012	11:10	15:10	4:00	AC01669	FCA00564	29.5	9.0
7	GP Training Building (3rd floor gym)	10/24/2012	11:12	15:13	4:01	AC00641	FCA00023	29.5	6.5
8	GP Training Building (basement)	10/24/2012	11:10	15:16	4:06	AC00747	FCA00604	29.5	7.5
9	GP Main Office Building (basement west)	10/24/2012	12:26	16:26	4:00	AC01113	FCA00575	29.5	7.0
10	GP Main Office Building (basement center)	10/24/2012	12:31	16:31	4:00	AC01436	FCA00521	29.4	10.0
11	GP Main Office Building (basement east)	10/24/2012	12:33	16:33	4:00	AC01376	FCA00349	29.4	8.0
12	GP Main Office Building (1st floor entrance)	10/24/2012	12:36	16:37	4:01	AC00672	FCA00198	29.4	4.8
13	GP Main Office Building (1st floor west)	10/24/2012	12:48	16:48	4:00	AC00475	FCA00402	29.5	3.5
14	GP Main Office Building (2nd floor west)	10/24/2012	12:54	16:54	4:00	AC01263	FCA00516	29.4	9.5
15	GP Main Office Building (2nd floor east)	10/24/2012	12:40	16:40	4:00	AC01145	FCA00374	29.4	6.5
16	GP Main Office Building (outside west)	10/24/2012	12:44	16:44	4:00	AC00782	FCA00298	29.6	0.0
17	440 Building (2nd floor Room 221, inspection)	10/24/2012	13:10	17:10	4:00	AC01215	FCA00365	29.5	8.0
18	440 Building (2nd floor meeting room)	10/24/2012	13:13	17:13	4:00	AC01670	FCA00319	29.6	5.5
19	15 Pump House (inside)	10/24/2012	13:27	17:27	4:00	AC01930	FCA00016	29.5	7.0
20	15 Pump House (under roof w/ pump equipment, approximately 8-10' below grade)	10/24/2012	13:30	17:30	4:00	AC01420	FCA00397	29.5	6.3
21	15 Pump House (outside, at grade)	10/24/2012	13:35	17:35	4:00	AC01464	FCA00034	29.5	3.0
22	North Yard Scale House (inside)	10/24/2012	13:51	17:51	4:00	AC00590	FCA00168	29.5	7.8
23	North Yard Scale House (outside)	10/25/2012	8:17	12:18	4:01	AC01664	FCA00422	29.0	11.0
24	“Trip blank,” regulator attached, unopened	10/25/2012	---	---	---	AC01830	FCA00480	29.4	29.4

Table 1: Sample Locations and Parameters - Sunoco Philadelphia Refinery

Sample No.	Location/Description	Date	Start Time	Stop Time	Sample Duration (hr:min)	Canister ID	Regulator ID	Pre-Sample Pressure, (PSI) [1]	Post-Sample Pressure, (PSI) [1]
25	"Trip blank," regulator attached, unopened	10/25/2012	---	---	---	AC01093	FCA00058	29.5	29.5
26	SRTF Propane Loading (inside)	10/25/2012	8:59	12:59	4:00	AC00540	FCA00482	29.3	8.5
27	SRTF Main Pump House (inside)	10/25/2012	9:07	13:08	4:01	AC01810	FCA00609	29.4	8.0
28	SRTF Main Pump House (outside)	10/25/2012	9:10	13:10	4:00	AC01350	FCA00454	29.5	5.0
29	PB Main Office Building, (safety office)	10/25/2012	8:23	12:23	4:00	AC00716	FCA00239	29.5	0.0
30	PB Main Office Building, (medical area)	10/25/2012	8:29	12:29	4:00	AC00501	FCA00015	29.5	6.0
31	PB Main Office Building, (1st floor lobby)	10/25/2012	8:34	12:34	4:00	AC00765	FCA00303	29.5	5.8
32	PB Main Office Building,(1st floor east wing)	10/25/2012	8:37	12:37	4:00	AC01403	FCA00432	29.5	10.0
33	PB Main Office Building, (1st floor west wing)	10/25/2012	8:41	12:41	4:00	AC01573	FCA00449	29.5	3.0
34	PB Main Office Building, (2nd floor west wing)	10/25/2012	8:44	12:44	4:00	AC00947	FCA00632	29.5	5.0
35	PB Main Office Building, (2nd floor center file room)	10/25/2012	8:48	12:48	4:00	AC00033	FCA00473	29.5	4.0
36	PB Main Office Building, (2nd floor east conference room)	10/25/2012	8:51	12:51	4:00	AC01790	FCA00538	29.5	3.5
37	PB Lab (west lab)	10/25/2012	9:00	13:00	4:00	AC01886	FCA00274	29.5	5.0
38	PB Lab (2nd floor office)	10/25/2012	9:08	13:08	4:00	AC01487	FCA00418	29.5	4.5
39	PB Refinery Hall (2nd floor conference room)	10/25/2012	9:40	13:40	4:00	AC01115	FCA00563	29.6	6.5
40	PB Refinery Hall (2nd floor east wing)	10/25/2012	9:43	13:43	4:00	AC01243	FCA00603	29.4	2.0
41	PB Maintenance Shop (break room)	10/25/2012	9:51	13:51	4:00	AC01218	FCA00405	29.6	9.0
42	PB Maintenance Shop (office)	10/25/2012	9:55	13:55	4:00	AC01179	FCA00040	29.6	4.8
43	PB buildings (adjacent gate area)	10/25/2012	10:00	14:00	4:00	AC00870	FCA00215	29.5	6.0
44	"Trip blank," regulator attached, unopened	10/25/2012	---	---	---	AC00993	FCA00619	29.5	29.5

1. PSI = pounds per square inch

Table 2: Laboratory Analytical Results – Select Volatile Organic Compounds (VOCs) - Sunoco Philadelphia Refinery [1,2,3]

Sample	Type[4]	Location/Description	Methyl Tertiary Butyl Ether (MTBE)	1,2-dichloroethane	Benzene	Toluene	1,2 Dibromoethane	Ethylbenzene	m,p-Xylene	o-Xylene	total Xylene	Cumene	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene
1	I	B&S Office	ND[5]	ND	4.3	7.4	ND	1.3	4.5	1.6	6.1	2.1	ND	1.5
3	I	24 Gate Building (1st floor)	ND	ND	2.1	7.0	ND	1.5	4.0	1.5	5.5	1.0	ND	1.7
4	I	24 Gate Building (2nd floor)	ND	ND	1.8	6.8	ND	1.2	3.8	1.4	5.2	ND	ND	1.5
5	I	GP Training Building (1st floor vending area)	ND	ND	3.5	7.2	ND	1.3	3.7	1.4	5.1	1.0	ND	1.6
6	I	GP Training Building (1st floor west)	ND	ND	4.2	7.5	ND	2.2	4.6	1.7	6.3	1.3	ND	1.8
7	I	GP Training Building (3rd floor gym)	ND	ND	4.2	12	ND	1.8	6.3	2.2	8.5	2.0	1.2	4.0
8	I	GP Training Building (basement)	ND	ND	3.1	7.8	ND	1.5	4.9	1.8	6.7	1.5	0.97	3.2
9	I	GP Main Office Building (basement west)	ND	ND	2.3	6.9	ND	1.3	4.2	1.5	5.7	1.4	ND	1.6
10	I	GP Main Office Building (basement center)	ND	ND	2.2	6.9	ND	1.2	3.6	1.3	4.9	1.0	ND	1.3
11	I	GP Main Office Building (basement east)	ND	ND	1.6	6.1	ND	0.86	2.7	1.0	3.7	ND	ND	0.93
12	I	GP Main Office Building (1st floor entrance)	ND	ND	1.7	6.2	ND	0.99	2.9	1.1	4.0	ND	ND	1.0
13	I	GP Main Office Building (1st floor west)	ND	ND	1.5	5.6	ND	0.86	2.6	0.96	3.56	ND	ND	ND
14	I	GP Main Office Building (2nd floor west)	ND	ND	1.6	6	ND	1.1	3.0	1.1	4.1	0.79	ND	1.0
15	I	GP Main Office Building (2nd floor east)	ND	ND	1.9	6.4	ND	1.2	3.4	1.2	4.6	1.0	ND	1.2
17	I	440 Building (2nd floor Room 221, inspection)	ND	ND	9.0	8.3	ND	1.8	4.3	1.5	5.8	2.5	ND	1.3
18	I	440 Building (2nd floor meeting room)	ND	ND	7.2	8.2	ND	0.97	3.2	1.2	4.4	1.9	ND	1.2
19	I	15 Pump House (inside)	ND	ND	3.6	14	ND	2.9	11	3.7	14.7	0.77	1.3	3.3
22	I	North Yard Scale House (inside)	ND	ND	1.7	9.2	ND	1.7	4.6	1.5	6.1	0.85	ND	1.2
26	I	SRTF Propane Loading (inside)	ND	ND	2.1	4.0	ND	0.99	3.8	1.3	5.1	1.1	ND	1.4
27	I	SRTF Main Pump House (inside)	ND	ND	2.3	3.6	ND	ND	3	1.1	4.1	ND	ND	ND
29	I	PB Main Office Building, (safety office)	ND	ND	1.6	6.5	ND	0.95	3.3	1.1	4.4	ND	ND	0.99
30	I	PB Main Office Building, (medical area)	ND	ND	1.2	4.4	ND	ND	2.3	0.87	3.17	ND	ND	1.1
31	I	PB Main Office Building, (1st floor lobby)	ND	ND	1.3	4.8	ND	ND	2.5	0.91	3.41	ND	ND	0.94
32	I	PB Main Office Building,(1st floor east wing)	ND	ND	1.3	5.2	ND	ND	2.5	ND	2.5	ND	ND	ND
33	I	PB Main Office Building, (1st floor west wing)	ND	ND	1.4	5	ND	0.93	3.5	1.1	4.6	ND	ND	0.97
34	I	PB Main Office Building, (2nd floor west wing)	ND	ND	1.3	4.9	ND	0.89	3.3	1.3	4.6	ND	ND	1.1

Table 2: Laboratory Analytical Results – Select Volatile Organic Compounds (VOCs) - Sunoco Philadelphia Refinery [1,2,3]

Sample	Type[4]	Location/Description	Methyl Tertiary Butyl Ether (MTBE)	1,2-dichloroethane	Benzene	Toluene	1,2 Dibromoethane	Ethylbenzene	m,p-Xylene	o-Xylene	total Xylene	Cumene	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene
35	I	PB Main Office Building, (2nd floor center file room)	ND	ND	1.2	5.9	ND	1.0	3.7	1.4	5.1	ND	ND	0.95
36	I	PB Main Office Building, (2nd floor east conf. room)	ND	ND	0.94	4.0	ND	0.74	2.5	0.97	3.47	ND	ND	0.78
37	I	PB Lab (west lab)	ND	ND	11	88	ND	11	42	9.1	51.1	1.3	1.4	3.9
38	I	PB Lab (2nd floor office)	ND	ND	8.4	330	ND	6.0	24	7.6	31.6	2.6	3.9	11
39	I	PB Refinery Hall (2nd floor conference room)	0.96	ND	1.4	6.4	ND	1.1	3.9	1.4	5.3	ND	ND	1.1
40	I	PB Refinery Hall (2nd floor east wing)	1.6	ND	2.0	8.8	ND	1.4	5.4	1.8	7.2	ND	ND	1.5
41	I	PB Maintenance Shop (break room)	ND	ND	1.8	9.0	ND	1.3	5.2	1.9	7.1	ND	1.1	3.1
42	I	PB Maintenance Shop (office)	ND	ND	1.7	8.2	ND	1.1	4.6	1.7	6.3	ND	0.87	2.5
2	O	B&S Office (outside)	ND	ND	3.9	6.5	ND	ND	3.7	1.4	5.1	2.0	ND	1.3
16	O	GP Main Office Building (outside west)	ND	ND	1.3	4.6	ND	ND	2.0	ND	2.0	ND	ND	ND
20	O	15 Pump House (under roof w/ pump equipment, approximately 8-10' below grade)	ND	ND	2.1	7.4	ND	0.83	2.8	1.1	3.9	ND	ND	0.92
21	O	15 Pump House (outside, at grade)	ND	ND	4.9	19	ND	3.1	13	4.1	17.1	ND	1.6	3.6
23	O	North Yard Scale House (outside)	ND	ND	ND	3.8	ND	ND	ND	ND	ND	ND	ND	ND
28	O	SRTF Main Pump House (outside)	ND	ND	2.3	2	ND	ND	ND	ND	ND	ND	ND	ND
43	O	PB buildings (adjacent gate area)	ND	ND	1.2	10	ND	ND	2.8	0.99	3.79	ND	ND	0.93
24	TB	"Trip blank" - not opened	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25	TB	"Trip blank" - not opened	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
44	TB	"Trip blank" - not opened	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1. All units are in micrograms per cubic meter of air (ug/m^3) by volume
2. All samples were analyzed utilizing EPA Method TO-15.
3. Copies of Laboratory Analytical Results are provided as Appendix A.
4. "I"=Indoor air sample; "O"=Outdoor air sample; "TB"= Trip Blank, SUMMA canisters which were not opened, used for QA/QC.
5. "ND"=Non-Detect

Table 3: Summary Statistics – Select Volatile Organic Compounds (VOCs) - Sunoco Philadelphia Refinery [1,2,3]

	Analytes	Methyl Tertiary Butyl Ether (MTBE)	1,2-dichloroethane	Benzene	Toluene	1,2 Dibromoethane	Ethyl benzene	mp-Xylene	o-Xylene	total Xylene	Cumene	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene
	Health Effects [4,5]	c	c	c	nc	c	c	nc	nc	nc	nc	nc	nc
Occupational and Risk-Based Screening Criteria													
	OSHA PELs [6]	--	2.02E+05	3.19E+03	7.54E+05	1.54E+05	4.34E+05	4.34E+05	4.34E+05	4.34E+05	2.46E+05	--	--
	ACGIH TLVs® [6]	1.80E+05	4.05E+04	1.60E+03	7.54E+04	--	8.68E+04	4.34E+05	4.34E+05	4.34E+05	2.46E+05	1.23E+05	1.23E+05
	EPA RSLs Industrial[7]	4.70E+02	7.70E+01	1.60E+01	2.20E+04	2.00E-01	4.90E+01	4.40E+02	4.40E+02	4.40E+02	1.80E+03	3.10E+01	3.10E+01
	PADEP IAQ Industrial [8]	3.10E+02	3.10E+00	1.10E+01	1.20E+03	3.70E-01	7.30E+01	3.00E+02	3.00E+02	3.00E+02	1.10E+03	1.70E+01	1.70E+01
	PADEP Odor	1.90E+02	2.40E+04	2.70E+03	6.40E+02	1.92E+05	6.08E+05	2.00E+03	2.00E+03	2.00E+03	6.00E+01	--	--
Summary Statistics for Indoor Samples													
Indoor	Number - total	34	34	34	34	34	34	34	34	34	34	34	34
	Non-Detects	32	34	0	0	34	4	0	1	0	17	27	3
	Detects	2	0	34	34	0	30	34	33	34	17	7	31
	Minimum	0.96	--	0.94	3.6	--	0.74	2.3	0.87	3.17	0.77	0.87	0.78
	Maximum	1.6	--	11	330	--	11	42	9.1	51.1	2.6	3.9	11
	Median	1.28	--	1.85	6.85	--	1.2	3.75	1.4	5.1	1.3	1.2	1.3
	Mean	1.28	--	2.90	18.77	--	1.77	5.67	1.85	7.50	1.42	1.53	1.96
	Std. Deviation	0.45	--	2.45	56.76	--	1.99	7.44	1.76	9.15	0.59	1.06	1.91
Summary Statistics for Outdoor Samples													
Outdoor	Number - total	7	7	7	7	7	7	7	7	7	7	7	7
	Non-Detects	7	7	1	0	7	5	2	3	2	6	6	3
	Detects	0	0	6	7	0	2	5	4	5	1	1	4
	Minimum	.	.	1.2	2	.	0.83	2	0.99	2.85	2	1.6	0.92
	Maximum	.	.	4.9	19	.	3.1	13	4.1	17.1	2	1.6	3.6
	Median	.	.	2.2	6.5	.	1.965	2.8	1.25	3.9	2	1.6	1.115
	Mean	.	.	2.62	7.61	.	1.97	4.86	1.90	6.55	2.00	1.60	1.69
	Std. Deviation	.	.	1.48	5.65	.	1.61	4.59	1.48	5.95	.	.	1.29

1. All units are in micrograms per cubic meter of air (ug/m^3)
2. All samples were analyzed utilizing EPA Method TO-15.
3. VOCs were not detected in any of the three "Trip Blank" SUMMA canisters.
4. "c" – EPA classifies as Carcinogen
5. "nc" – EPA classifies as Non-Carcinogen.
6. Occupational Safety and Health Permissible Exposure Limits (OSHA PELs) and American Conference of Industrial Hygienists Threshold Limit Values (TLVs®) were converted from parts per billion (ppb) to ug/m^3 using the following formula: ug/m^3=(ppb*MW)/24.45.
7. US EPA Regional Screening Levels, November 2012, adjusted to 1E-05 for carcinogens; HI of 1.0 for non-carcinogens.
8. Pennsylvania Department of Environmental Protection (PADEP), Bureau of Land Recycling and Land Management, Technical Guidance Manual-Section IV.A.4 Vapor Intrusion into buildings from Groundwater and Soil under the Act 2 Statewide Health Standard. January 24, 2004 (Table 3-Indoor Air Criteria).

APPENDIX A

LABORATORY REPORT

November 8, 2012

John Reiter
Stantec Consulting Services, Inc.
12075 Corporate Pkwy, Ste. 200
Mequon, WI 53092

RE: Sunoco IH Air Testing / 213402094

Dear John:

Enclosed are the results of the samples submitted to our laboratory on October 31, 2012. For your reference, these analyses have been assigned our service request number P1204493.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA200007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-12-3; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA01527Z012-Z; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen
Project Manager

Client: Stantec Consulting Services, Inc. Service Request No: P1204493
Project: Sunoco IH Air Testing / 213402094

CASE NARRATIVE

The samples were received intact under chain of custody on October 31, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of Columbia Analytical Services, Inc. dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

DETAIL SUMMARY REPORT

Client: Stantec Consulting Services, Inc.
Project ID: Sunoco IH Air Testing / 213402094

Service Request: P1204493

Date Received: 10/31/2012
Time Received: 09:10

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
Sample 1	P1204493-001	Air	10/24/2012	14:35	AC01003	-3.85	3.67	X
Sample 2	P1204493-002	Air	10/24/2012	14:39	AC00760	-6.54	3.79	X
Sample 3	P1204493-003	Air	10/24/2012	14:50	AC01853	-3.60	3.61	X
Sample 4	P1204493-004	Air	10/24/2012	14:52	AC01010	-3.29	3.63	X
Sample 5	P1204493-005	Air	10/24/2012	15:07	AC01928	-3.21	3.60	X
Sample 6	P1204493-006	Air	10/24/2012	15:10	AC01669	-4.20	3.70	X
Sample 7	P1204493-007	Air	10/24/2012	15:13	AC00641	-3.08	3.75	X
Sample 8	P1204493-008	Air	10/24/2012	15:16	AC00747	-3.67	3.78	X
Sample 9	P1204493-009	Air	10/24/2012	16:26	AC01113	-3.10	3.67	X
Sample 10	P1204493-010	Air	10/24/2012	16:31	AC01436	-5.08	3.56	X
Sample 11	P1204493-011	Air	10/24/2012	16:33	AC01376	-3.84	3.74	X
Sample 12	P1204493-012	Air	10/24/2012	16:37	AC00672	-2.29	3.58	X
Sample 13	P1204493-013	Air	10/24/2012	16:40	AC01145	-4.00	3.75	X
Sample 14	P1204493-014	Air	10/24/2012	16:44	AC00782	0.31	3.62	X
Sample 15	P1204493-015	Air	10/24/2012	16:48	AC00475	-1.47	3.55	X
Sample 16	P1204493-016	Air	10/24/2012	16:54	AC01263	-3.77	3.76	X
Sample 17	P1204493-017	Air	10/24/2012	17:10	AC01215	-2.97	3.72	X
Sample 18	P1204493-018	Air	10/24/2012	17:13	AC01670	-2.52	3.64	X
Sample 19	P1204493-019	Air	10/24/2012	17:27	AC01930	-2.75	3.57	X
Sample 20	P1204493-020	Air	10/24/2012	17:30	AC01420	-3.07	3.72	X
Sample 21	P1204493-021	Air	10/24/2012	17:35	AC01464	-1.69	3.65	X
Sample 22	P1204493-022	Air	10/24/2012	17:51	AC00590	-2.29	3.77	X
Sample 24 TB	P1204493-023	Air	10/24/2012	00:00	AC01830	-14.50	3.68	X

Columbia Analytical Services
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1204493

Company Name & Address (Reporting Information): Stantec, 12075 Corporate Pkwy, Mequon, WI 53092

Project Name: Sunoco IH Air Testing

Project Number: 213402094

Project Manager: John Reiter

P.O. # / Billing Information: John Reiter

Phone: 262-643-9154

Fax: 262-241-4901

Email Address for Result Reporting: John.Reiter@Stantec.com

Sampler (Print & Sign)

CAS Contact:

Analysis Method

Comments e.g. Actual Preservative or specific instructions

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume			
Sample 1	1-3.54	10/24/12	10:35 14:35	AC01003	FCA00317	29.5	8				
Sample 2	2-6.55	10/24/12	10:37 14:39	AC00760	FCA00595	29.5	13.0				
Sample 3	3-3.63	10/24/12	10:50 14:50	AC01853	FCA00134	29.5	7.0				
Sample 4	4-3.33	10/24/12	10:53 14:53	AC01010	FCA00188	29.6	7.25				
Sample 5	5-3.14	10/24/12	11:07 15:07	AC01928	FCA00161	29.5	9.0				
Sample 6	6-4.21	10/24/12	11:10 15:10	AC01669	FCA00564	29.5	9.0				
Sample 7	7-3.57	10/24/12	11:13 15:13	AC00641	FCA00023	29.5	6.5				
Sample 8	8-3.67	10/24/12	11:16 15:16	AC00747	FCA00604	29.5	7.5				
Sample 9	9-3.14	10/24/12	12:26 16:26	AC01113	FCA00575	29.5	7.0				
Sample 10	10-5.11	10/24/12	12:31 16:31	AC01436	FCA00521	29.4	10.0				
Sample 11	11-3.87	10/24/12	12:33 16:33	AC01376	FCA00349	29.4	8.0				
Sample 12	12-2.33	10/24/12	12:36 16:37	AC00672	FCA00198	29.4	4.75				
Sample 13	13-4.03	10/24/12	12:40 16:40	AC00[illegible]45	FCA00374	29.4	6.5				
Sample 14	14-0.85	10/24/12	12:44 16:44	AC00782	FCA00298	29.6	0.0				

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: _____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 10/24/12	Time: 1830	Received by: (Signature)	Date: 10/25/12	Time: 0910
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

Columbia Analytical Services
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. R12-3443

CAS Contact:

Company Name & Address (Reporting Information): Stantec, 12075 Corporate Pkwy, Mequon, WI 53092

Project Name: Sunoco IH Air Testing

Project Number: 213402094

Project Manager: John Reiter

P.O. # / Billing Information: John Reiter

Phone: 262-643-9154 Fax: 262-241-4901

Email Address for Result Reporting: John.reiter@stantec.com

Sampler (Print & Sign): Richard Page

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume			Comments e.g. Actual Preservative or specific instructions
Sample 15	15-1.53	10/24/12	12:48 16:49	AC00475	FCA00402	29.5	3.5				
Sample 16	16-3.82	10/24/12	12:58 16:54	AC01263	FCA00516	29.4	9.5				
Sample 17	17-3.04	10/24/12	13:10 17:10	AC01215	FCA00365	29.5	8.0				
Sample 18	18-2.63	10/24/12	13:13 17:13	AC01670	FCA00319	29.6	5.5				
Sample 19	19-2.77	10/24/12	13:27 17:27	AC01930	FCA00016	29.5	7.0				
Sample 20	20-3.14	10/24/12	13:38 17:38	AC01420	FCA00397	29.5	6.25				
Sample 21	21-1.75	10/24/12	13:35 17:35	AC01464	FAC00034	29.5	3.0				
Sample 22	22-2.34	10/24/12	13:51 17:51	AC00590	FCA00168	29.8	7.75				
~~Sample 23~~		~~10/24/12~~	~~13:54~~	~~AC01664~~	~~FCA00422~~	~~29.5~~					Not Collected
Sample 24TB	23-14.47	10/24/12	—	AC01830	—	29.4	29.4				

Report Tier Levels - please select
Tier I - Results (Default if not specified) _____
Tier II (Results + QC Summaries) _____
Tier III (Results + QC & Calibration Summaries) _____
Tier IV (Data Validation Package) 10% Surcharge _____
EDD required Yes / No
Type: _____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	10/24/12	18:30	[signature]	10/25/12	0910
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____°C

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1204493
Project: Sunoco IH Air Testing / 213402094
Sample(s) received on: 10/31/12 Date opened: 10/31/12 by: MZAMORA

Note: This form is used forall samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1204493-001.01	6.0 L Ambient Can					
P1204493-002.01	6.0 L Ambient Can					
P1204493-003.01	6.0 L Ambient Can					
P1204493-004.01	6.0 L Ambient Can					
P1204493-005.01	6.0 L Ambient Can					
P1204493-006.01	6.0 L Ambient Can					
P1204493-007.01	6.0 L Ambient Can					
P1204493-008.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1204493

Project: Sunoco IH Air Testing / 213402094

Sample(s) received on: 10/31/12 Date opened: 10/31/12 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1204493-009.01	6.0 L Ambient Can					
P1204493-010.01	6.0 L Ambient Can					
P1204493-011.01	6.0 L Ambient Can					
P1204493-012.01	6.0 L Ambient Can					
P1204493-013.01	6.0 L Ambient Can					
P1204493-014.01	6.0 L Ambient Can					
P1204493-015.01	6.0 L Ambient Can					
P1204493-016.01	6.0 L Ambient Can					
P1204493-017.01	6.0 L Ambient Can					
P1204493-018.01	6.0 L Ambient Can					
P1204493-019.01	6.0 L Ambient Can					
P1204493-020.01	6.0 L Ambient Can					
P1204493-021.01	6.0 L Ambient Can					
P1204493-022.01	6.0 L Ambient Can					
P1204493-023.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 1** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-001

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01003

Initial Pressure (psig): -3.85 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.85	ND	0.23	
107-06-2	1,2-Dichloroethane	ND	0.85	ND	0.21	
71-43-2	Benzene	**4.3**	0.85	**1.3**	0.26	
108-88-3	Toluene	**7.4**	0.85	**2.0**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.85	ND	0.11	
100-41-4	Ethylbenzene	**1.3**	0.85	**0.31**	0.19	
179601-23-1	m,p-Xylenes	**4.5**	1.7	**1.0**	0.39	
95-47-6	o-Xylene	**1.6**	0.85	**0.37**	0.19	
98-82-8	Cumene	**2.1**	0.85	**0.43**	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.85	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**1.5**	0.85	**0.30**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 2** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-002

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00760

Initial Pressure (psig): -6.54 Final Pressure (psig): 3.79

Canister Dilution Factor: 2.27

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	1.1	ND	0.31	
107-06-2	1,2-Dichloroethane	ND	1.1	ND	0.28	
71-43-2	Benzene	**3.9**	1.1	**1.2**	0.36	
108-88-3	Toluene	**6.5**	1.1	**1.7**	0.30	
106-93-4	1,2-Dibromoethane	ND	1.1	ND	0.15	
100-41-4	Ethylbenzene	ND	1.1	ND	0.26	
179601-23-1	m,p-Xylenes	**3.7**	2.3	**0.86**	0.52	
95-47-6	o-Xylene	**1.4**	1.1	**0.32**	0.26	
98-82-8	Cumene	**2.0**	1.1	**0.40**	0.23	
108-67-8	1,3,5-Trimethylbenzene	ND	1.1	ND	0.23	
95-63-6	1,2,4-Trimethylbenzene	**1.3**	1.1	**0.26**	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 3** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-003

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01853

Initial Pressure (psig): -3.60 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.83	ND	0.23	
107-06-2	1,2-Dichloroethane	ND	0.83	ND	0.20	
71-43-2	Benzene	**2.1**	0.83	**0.66**	0.26	
108-88-3	Toluene	**7.0**	0.83	**1.9**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.83	ND	0.11	
100-41-4	Ethylbenzene	**1.5**	0.83	**0.35**	0.19	
179601-23-1	m,p-Xylenes	**4.0**	1.7	**0.93**	0.38	
95-47-6	o-Xylene	**1.5**	0.83	**0.35**	0.19	
98-82-8	Cumene	**1.0**	0.83	**0.21**	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.83	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**1.7**	0.83	**0.35**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 4** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-004

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01010

Initial Pressure (psig): -3.29 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.81	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.81	ND	0.20	
71-43-2	Benzene	**1.8**	0.81	**0.56**	0.25	
108-88-3	Toluene	**6.8**	0.81	**1.8**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.81	ND	0.10	
100-41-4	Ethylbenzene	**1.2**	0.81	**0.28**	0.19	
179601-23-1	m,p-Xylenes	**3.8**	1.6	**0.88**	0.37	
95-47-6	o-Xylene	**1.4**	0.81	**0.33**	0.19	
98-82-8	Cumene	ND	0.81	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.81	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.5**	0.81	**0.31**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 5** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-005

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01928

Initial Pressure (psig): -3.21 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.80	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.80	ND	0.20	
71-43-2	Benzene	**3.5**	0.80	**1.1**	0.25	
108-88-3	Toluene	**7.2**	0.80	**1.9**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.80	ND	0.10	
100-41-4	Ethylbenzene	**1.3**	0.80	**0.31**	0.18	
179601-23-1	m,p-Xylenes	**3.7**	1.6	**0.86**	0.37	
95-47-6	o-Xylene	**1.4**	0.80	**0.32**	0.18	
98-82-8	Cumene	**1.0**	0.80	**0.21**	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.80	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.6**	0.80	**0.33**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 6** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-006

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01669

Initial Pressure (psig): -4.20 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.88	ND	0.24	
107-06-2	1,2-Dichloroethane	ND	0.88	ND	0.22	
71-43-2	Benzene	**4.2**	0.88	**1.3**	0.27	
108-88-3	Toluene	**7.5**	0.88	**2.0**	0.23	
106-93-4	1,2-Dibromoethane	ND	0.88	ND	0.11	
100-41-4	Ethylbenzene	**2.2**	0.88	**0.50**	0.20	
179601-23-1	m,p-Xylenes	**4.6**	1.8	**1.1**	0.40	
95-47-6	o-Xylene	**1.7**	0.88	**0.38**	0.20	
98-82-8	Cumene	**1.3**	0.88	**0.26**	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.88	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	**1.8**	0.88	**0.37**	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 7** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-007

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00641

Initial Pressure (psig): -3.08 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.80	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.80	ND	0.20	
71-43-2	Benzene	**4.2**	0.80	**1.3**	0.25	
108-88-3	Toluene	**12**	0.80	**3.1**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.80	ND	0.10	
100-41-4	Ethylbenzene	**1.8**	0.80	**0.41**	0.18	
179601-23-1	m,p-Xylenes	**6.3**	1.6	**1.4**	0.37	
95-47-6	o-Xylene	**2.2**	0.80	**0.51**	0.18	
98-82-8	Cumene	**2.0**	0.80	**0.41**	0.16	
108-67-8	1,3,5-Trimethylbenzene	**1.2**	0.80	**0.25**	0.16	
95-63-6	1,2,4-Trimethylbenzene	**4.0**	0.80	**0.82**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 8** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-008

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00747

Initial Pressure (psig): -3.67 Final Pressure (psig): 3.78

Canister Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.84	ND	0.23	
107-06-2	1,2-Dichloroethane	ND	0.84	ND	0.21	
71-43-2	Benzene	**3.1**	0.84	**0.97**	0.26	
108-88-3	Toluene	**7.8**	0.84	**2.1**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.84	ND	0.11	
100-41-4	Ethylbenzene	**1.5**	0.84	**0.34**	0.19	
179601-23-1	m,p-Xylenes	**4.9**	1.7	**1.1**	0.39	
95-47-6	o-Xylene	**1.8**	0.84	**0.42**	0.19	
98-82-8	Cumene	**1.5**	0.84	**0.30**	0.17	
108-67-8	1,3,5-Trimethylbenzene	**0.97**	0.84	**0.20**	0.17	
95-63-6	1,2,4-Trimethylbenzene	**3.2**	0.84	**0.65**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 9** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-009

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01113

Initial Pressure (psig): -3.10 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.20	
71-43-2	Benzene	**2.3**	0.79	**0.72**	0.25	
108-88-3	Toluene	**6.9**	0.79	**1.8**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
100-41-4	Ethylbenzene	**1.3**	0.79	**0.29**	0.18	
179601-23-1	m,p-Xylenes	**4.2**	1.6	**0.97**	0.36	
95-47-6	o-Xylene	**1.5**	0.79	**0.36**	0.18	
98-82-8	Cumene	**1.4**	0.79	**0.28**	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.79	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.6**	0.79	**0.32**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 10** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-010

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01436

Initial Pressure (psig): -5.08 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.90

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.95	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	0.95	ND	0.23	
71-43-2	Benzene	**2.2**	0.95	**0.69**	0.30	
108-88-3	Toluene	**6.9**	0.95	**1.8**	0.25	
106-93-4	1,2-Dibromoethane	ND	0.95	ND	0.12	
100-41-4	Ethylbenzene	**1.2**	0.95	**0.27**	0.22	
179601-23-1	m,p-Xylenes	**3.6**	1.9	**0.83**	0.44	
95-47-6	o-Xylene	**1.3**	0.95	**0.31**	0.22	
98-82-8	Cumene	**1.0**	0.95	**0.20**	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.95	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	**1.3**	0.95	**0.26**	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 11** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-011

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01376

Initial Pressure (psig): -3.84 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.70

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.85	ND	0.24	
107-06-2	1,2-Dichloroethane	ND	0.85	ND	0.21	
71-43-2	Benzene	**1.6**	0.85	**0.50**	0.27	
108-88-3	Toluene	**6.1**	0.85	**1.6**	0.23	
106-93-4	1,2-Dibromoethane	ND	0.85	ND	0.11	
100-41-4	Ethylbenzene	**0.86**	0.85	**0.20**	0.20	
179601-23-1	m,p-Xylenes	**2.7**	1.7	**0.63**	0.39	
95-47-6	o-Xylene	**1.0**	0.85	**0.24**	0.20	
98-82-8	Cumene	ND	0.85	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.85	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**0.93**	0.85	**0.19**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 12** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-012

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00672

Initial Pressure (psig): -2.29 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.74	ND	0.20	
107-06-2	1,2-Dichloroethane	ND	0.74	ND	0.18	
71-43-2	Benzene	**1.7**	0.74	**0.54**	0.23	
108-88-3	Toluene	**6.2**	0.74	**1.6**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.74	ND	0.096	
100-41-4	Ethylbenzene	**0.99**	0.74	**0.23**	0.17	
179601-23-1	m,p-Xylenes	**2.9**	1.5	**0.67**	0.34	
95-47-6	o-Xylene	**1.1**	0.74	**0.25**	0.17	
98-82-8	Cumene	ND	0.74	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.74	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.0**	0.74	**0.21**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 13** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-013

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/6/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01145

Initial Pressure (psig): -4.00 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.86	ND	0.24	
107-06-2	1,2-Dichloroethane	ND	0.86	ND	0.21	
71-43-2	Benzene	**1.5**	0.86	**0.47**	0.27	
108-88-3	Toluene	**5.6**	0.86	**1.5**	0.23	
106-93-4	1,2-Dibromoethane	ND	0.86	ND	0.11	
100-41-4	Ethylbenzene	**0.86**	0.86	**0.20**	0.20	
179601-23-1	m,p-Xylenes	**2.6**	1.7	**0.60**	0.40	
95-47-6	o-Xylene	**0.96**	0.86	**0.22**	0.20	
98-82-8	Cumene	ND	0.86	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.86	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	ND	0.86	ND	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 14** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-014

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00782

Initial Pressure (psig): 0.31 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.22

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.61	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.61	ND	0.15	
71-43-2	Benzene	**1.6**	0.61	**0.51**	0.19	
108-88-3	Toluene	**6.0**	0.61	**1.6**	0.16	
106-93-4	1,2-Dibromoethane	ND	0.61	ND	0.079	
100-41-4	Ethylbenzene	**1.1**	0.61	**0.26**	0.14	
179601-23-1	m,p-Xylenes	**3.0**	1.2	**0.70**	0.28	
95-47-6	o-Xylene	**1.1**	0.61	**0.26**	0.14	
98-82-8	Cumene	**0.79**	0.61	**0.16**	0.12	
108-67-8	1,3,5-Trimethylbenzene	ND	0.61	ND	0.12	
95-63-6	1,2,4-Trimethylbenzene	**1.0**	0.61	**0.20**	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 15** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-015

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00475

Initial Pressure (psig): -1.47 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.69	ND	0.19	
107-06-2	1,2-Dichloroethane	ND	0.69	ND	0.17	
71-43-2	Benzene	**1.9**	0.69	**0.61**	0.22	
108-88-3	Toluene	**6.4**	0.69	**1.7**	0.18	
106-93-4	1,2-Dibromoethane	ND	0.69	ND	0.090	
100-41-4	Ethylbenzene	**1.2**	0.69	**0.28**	0.16	
179601-23-1	m,p-Xylenes	**3.4**	1.4	**0.78**	0.32	
95-47-6	o-Xylene	**1.2**	0.69	**0.29**	0.16	
98-82-8	Cumene	**1.0**	0.69	**0.21**	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.69	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	**1.2**	0.69	**0.25**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 16** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-016

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01263

Initial Pressure (psig): -3.77 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.69

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.85	ND	0.23	
107-06-2	1,2-Dichloroethane	ND	0.85	ND	0.21	
71-43-2	Benzene	**1.3**	0.85	**0.42**	0.26	
108-88-3	Toluene	**4.6**	0.85	**1.2**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.85	ND	0.11	
100-41-4	Ethylbenzene	ND	0.85	ND	0.19	
179601-23-1	m,p-Xylenes	**2.0**	1.7	**0.46**	0.39	
95-47-6	o-Xylene	ND	0.85	ND	0.19	
98-82-8	Cumene	ND	0.85	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.85	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.85	ND	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 17** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-017

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01215

Initial Pressure (psig): -2.97 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.19	
71-43-2	Benzene	**9.0**	0.79	**2.8**	0.25	
108-88-3	Toluene	**8.3**	0.79	**2.2**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
100-41-4	Ethylbenzene	**1.8**	0.79	**0.41**	0.18	
179601-23-1	m,p-Xylenes	**4.3**	1.6	**0.98**	0.36	
95-47-6	o-Xylene	**1.5**	0.79	**0.34**	0.18	
98-82-8	Cumene	**2.5**	0.79	**0.50**	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.79	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.3**	0.79	**0.25**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 18** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-018

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01670

Initial Pressure (psig): -2.52 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.51

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.76	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.76	ND	0.19	
71-43-2	Benzene	**7.2**	0.76	**2.2**	0.24	
108-88-3	Toluene	**8.2**	0.76	**2.2**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.76	ND	0.098	
100-41-4	Ethylbenzene	**0.97**	0.76	**0.22**	0.17	
179601-23-1	m,p-Xylenes	**3.2**	1.5	**0.75**	0.35	
95-47-6	o-Xylene	**1.2**	0.76	**0.28**	0.17	
98-82-8	Cumene	**1.9**	0.76	**0.39**	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.76	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.2**	0.76	**0.24**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 19** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-019

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01930

Initial Pressure (psig): -2.75 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.77	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.77	ND	0.19	
71-43-2	Benzene	**3.6**	0.77	**1.1**	0.24	
108-88-3	Toluene	**14**	0.77	**3.6**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.77	ND	0.10	
100-41-4	Ethylbenzene	**2.9**	0.77	**0.66**	0.18	
179601-23-1	m,p-Xylenes	**11**	1.5	**2.6**	0.35	
95-47-6	o-Xylene	**3.7**	0.77	**0.85**	0.18	
98-82-8	Cumene	**0.77**	0.77	**0.16**	0.16	
108-67-8	1,3,5-Trimethylbenzene	**1.3**	0.77	**0.27**	0.16	
95-63-6	1,2,4-Trimethylbenzene	**3.3**	0.77	**0.68**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 20** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-020

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/6/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01420

Initial Pressure (psig): -3.07 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.20	
71-43-2	Benzene	**2.1**	0.79	**0.65**	0.25	
108-88-3	Toluene	**7.4**	0.79	**2.0**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
100-41-4	Ethylbenzene	**0.83**	0.79	**0.19**	0.18	
179601-23-1	m,p-Xylenes	**2.8**	1.6	**0.65**	0.36	
95-47-6	o-Xylene	**1.1**	0.79	**0.24**	0.18	
98-82-8	Cumene	ND	0.79	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.79	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**0.92**	0.79	**0.19**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 21** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-021

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01464

Initial Pressure (psig): -1.69 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.71	ND	0.20	
107-06-2	1,2-Dichloroethane	ND	0.71	ND	0.17	
71-43-2	Benzene	**4.9**	0.71	**1.5**	0.22	
108-88-3	Toluene	**19**	0.71	**5.0**	0.19	
106-93-4	1,2-Dibromoethane	ND	0.71	ND	0.092	
100-41-4	Ethylbenzene	**3.1**	0.71	**0.70**	0.16	
179601-23-1	m,p-Xylenes	**13**	1.4	**3.0**	0.32	
95-47-6	o-Xylene	**4.1**	0.71	**0.94**	0.16	
98-82-8	Cumene	ND	0.71	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	**1.6**	0.71	**0.33**	0.14	
95-63-6	1,2,4-Trimethylbenzene	**3.6**	0.71	**0.74**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 22** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-022

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00590

Initial Pressure (psig): -2.29 Final Pressure (psig): 3.77

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.75	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.75	ND	0.18	
71-43-2	Benzene	**1.7**	0.75	**0.53**	0.23	
108-88-3	Toluene	**9.2**	0.75	**2.4**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.75	ND	0.097	
100-41-4	Ethylbenzene	**1.7**	0.75	**0.39**	0.17	
179601-23-1	m,p-Xylenes	**4.6**	1.5	**1.1**	0.34	
95-47-6	o-Xylene	**1.5**	0.75	**0.34**	0.17	
98-82-8	Cumene	**0.85**	0.75	**0.17**	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.75	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.2**	0.75	**0.24**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 24 TB**
Client Project ID: **Sunoco IH Air Testing / 213402094**

CAS Project ID: P1204493
CAS Sample ID: P1204493-023

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC01830

Date Collected: 10/24/12
Date Received: 10/31/12
Date Analyzed: 11/5/12
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P121103-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P121105-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P121106-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/6/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Project ID: P1204493

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 10/24/12
Analyst: Wida Ang Date(s) Received: 10/31/12
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 11/3 - 11/6/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P121103-MB	**97**	**98**	**102**	70-130	
Method Blank	P121105-MB	**96**	**102**	**104**	70-130	
Method Blank	P121106-MB	**94**	**100**	**106**	70-130	
Lab Control Sample	P121103-LCS	**99**	**101**	**104**	70-130	
Lab Control Sample	P121105-LCS	**97**	**98**	**106**	70-130	
Lab Control Sample	P121106-LCS	**97**	**100**	**108**	70-130	
Sample 1	P1204493-001	**97**	**99**	**104**	70-130	
Sample 2	P1204493-002	**101**	**98**	**102**	70-130	
Sample 3	P1204493-003	**100**	**98**	**104**	70-130	
Sample 3	P1204493-003DUP	**98**	**95**	**103**	70-130	
Sample 4	P1204493-004	**102**	**96**	**105**	70-130	
Sample 5	P1204493-005	**97**	**98**	**106**	70-130	
Sample 6	P1204493-006	**98**	**98**	**105**	70-130	
Sample 7	P1204493-007	**98**	**96**	**107**	70-130	
Sample 8	P1204493-008	**96**	**100**	**108**	70-130	
Sample 9	P1204493-009	**99**	**98**	**107**	70-130	
Sample 10	P1204493-010	**97**	**100**	**105**	70-130	
Sample 11	P1204493-011	**98**	**98**	**106**	70-130	
Sample 12	P1204493-012	**95**	**101**	**106**	70-130	
Sample 13	P1204493-013	**96**	**97**	**107**	70-130	
Sample 14	P1204493-014	**96**	**101**	**107**	70-130	
Sample 15	P1204493-015	**97**	**100**	**103**	70-130	
Sample 15	P1204493-015DUP	**94**	**104**	**110**	70-130	
Sample 16	P1204493-016	**97**	**97**	**105**	70-130	
Sample 17	P1204493-017	**99**	**98**	**109**	70-130	
Sample 18	P1204493-018	**96**	**100**	**106**	70-130	
Sample 19	P1204493-019	**96**	**101**	**107**	70-130	
Sample 20	P1204493-020	**95**	**101**	**108**	70-130	
Sample 21	P1204493-021	**98**	**98**	**102**	70-130	
Sample 22	P1204493-022	**97**	**99**	**100**	70-130	
Sample 24 TB	P1204493-023	**94**	**105**	**103**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P121103-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/03/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	204	**231**	**113**	67-116	
107-06-2	1,2-Dichloroethane	208	**220**	**106**	70-118	
71-43-2	Benzene	208	**214**	**103**	66-121	
108-88-3	Toluene	208	**211**	**101**	67-111	
106-93-4	1,2-Dibromoethane	208	**228**	**110**	73-122	
100-41-4	Ethylbenzene	206	**217**	**105**	71-117	
179601-23-1	m,p-Xylenes	412	**427**	**104**	70-116	
95-47-6	o-Xylene	200	**212**	**106**	70-116	
98-82-8	Cumene	196	**210**	**107**	70-116	
108-67-8	1,3,5-Trimethylbenzene	208	**230**	**111**	71-121	
95-63-6	1,2,4-Trimethylbenzene	200	**228**	**114**	73-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P121105-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/05/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	204	**210**	**103**	67-116	
107-06-2	1,2-Dichloroethane	208	**199**	**96**	70-118	
71-43-2	Benzene	208	**199**	**96**	66-121	
108-88-3	Toluene	208	**191**	**92**	67-111	
106-93-4	1,2-Dibromoethane	208	**211**	**101**	73-122	
100-41-4	Ethylbenzene	206	**205**	**100**	71-117	
179601-23-1	m,p-Xylenes	412	**407**	**99**	70-116	
95-47-6	o-Xylene	200	**202**	**101**	70-116	
98-82-8	Cumene	196	**198**	**101**	70-116	
108-67-8	1,3,5-Trimethylbenzene	208	**216**	**104**	71-121	
95-63-6	1,2,4-Trimethylbenzene	200	**213**	**107**	73-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P121106-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/06/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	204	**221**	**108**	67-116	
107-06-2	1,2-Dichloroethane	208	**209**	**100**	70-118	
71-43-2	Benzene	208	**203**	**98**	66-121	
108-88-3	Toluene	208	**202**	**97**	67-111	
106-93-4	1,2-Dibromoethane	208	**221**	**106**	73-122	
100-41-4	Ethylbenzene	206	**210**	**102**	71-117	
179601-23-1	m,p-Xylenes	412	**416**	**101**	70-116	
95-47-6	o-Xylene	200	**206**	**103**	70-116	
98-82-8	Cumene	196	**206**	**105**	70-116	
108-67-8	1,3,5-Trimethylbenzene	208	**226**	**109**	71-121	
95-63-6	1,2,4-Trimethylbenzene	200	**223**	**112**	73-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 3** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-003DUP

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01853

Initial Pressure (psig): -3.60 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.65

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	2.12	0.663	2.30	0.721	2.21	**8**	25	
Toluene	6.97	1.85	6.97	1.85	6.97	**0**	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
Ethylbenzene	1.53	0.352	1.58	0.364	1.555	**3**	25	
m,p-Xylenes	4.03	0.928	4.16	0.957	4.095	**3**	25	
o-Xylene	1.51	0.348	1.54	0.356	1.525	**2**	25	
Cumene	1.02	0.209	1.03	0.210	1.025	**1**	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	1.73	0.352	1.78	0.362	1.755	**3**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 15** CAS Project ID: P1204493
Client Project ID: **Sunoco IH Air Testing / 213402094** CAS Sample ID: P1204493-015DUP

Test Code: EPA TO-15 Date Collected: 10/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 10/31/12
Analyst: Wida Ang Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00475

Initial Pressure (psig): -1.47 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.38

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	1.95	0.609	2.06	0.645	2.005	**5**	25	
Toluene	6.44	1.71	6.80	1.80	6.62	**5**	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
Ethylbenzene	1.21	0.279	1.21	0.279	1.21	**0**	25	
m,p-Xylenes	3.40	0.784	3.41	0.785	3.405	**0.3**	25	
o-Xylene	1.25	0.288	1.28	0.294	1.265	**2**	25	
Cumene	1.01	0.205	1.08	0.220	1.045	**7**	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	1.24	0.251	1.28	0.261	1.26	**3**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY REPORT

November 8, 2012

John Reiter
Stantec Consulting Services, Inc.
12075 Corporate Pkwy, Ste. 200
Mequon, WI 53092

RE: Sunoco IH Air Testing / 213402094

Dear John:

Enclosed are the results of the samples submitted to our laboratory on October 31, 2012. For your reference, these analyses have been assigned our service request number P1204494.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA200007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-12-3; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA01527Z012-Z; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen
Project Manager

Client: Stantec Consulting Services, Inc. Service Request No: P1204494
Project: Sunoco IH Air Testing / 213402094

CASE NARRATIVE

The samples were received intact under chain of custody on October 31, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of Columbia Analytical Services, Inc. dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

DETAIL SUMMARY REPORT

Client: Stantec Consulting Services, Inc.
Project ID: Sunoco IH Testing / 213402094

Service Request: P1204494

Date Received: 10/31/2012
Time Received: 09:10

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
Sample 23	P1204494-001	Air	10/25/2012	12:17	AC01664	-6.14	3.79	X
Sample 25	P1204494-002	Air	10/25/2012	00:00	AC01093	-14.50	3.74	X
Sample 26	P1204494-003	Air	10/25/2012	12:59	AC00540	-3.15	3.59	X
Sample 27	P1204494-004	Air	10/25/2012	13:08	AC01810	-4.85	3.59	X
Sample 28	P1204494-005	Air	10/25/2012	13:10	AC01350	-2.60	3.71	X
Sample 29	P1204494-006	Air	10/25/2012	12:23	AC00716	-0.41	4.20	X
Sample 30	P1204494-007	Air	10/25/2012	12:29	AC00501	-2.50	3.61	X
Sample 31	P1204494-008	Air	10/25/2012	12:34	AC00765	-3.73	3.68	X
Sample 32	P1204494-009	Air	10/25/2012	12:37	AC01403	-5.30	3.76	X
Sample 33	P1204494-010	Air	10/25/2012	12:41	AC01573	-0.55	3.66	X
Sample 34	P1204494-011	Air	10/25/2012	12:44	AC00947	-2.79	3.49	X
Sample 35	P1204494-012	Air	10/25/2012	12:48	AC00033	-2.24	3.50	X
Sample 36	P1204494-013	Air	10/25/2012	12:51	AC01790	-2.23	3.48	X
Sample 37	P1204494-014	Air	10/25/2012	13:00	AC01886	-3.04	3.62	X
Sample 38	P1204494-015	Air	10/25/2012	13:08	AC01487	-2.38	3.62	X
Sample 39	P1204494-016	Air	10/25/2012	13:40	AC01115	-3.59	3.71	X
Sample 40	P1204494-017	Air	10/25/2012	13:43	AC01243	-0.40	3.96	X
Sample 41	P1204494-018	Air	10/25/2012	13:51	AC01218	-3.00	3.67	X
Sample 42	P1204494-019	Air	10/25/2012	13:55	AC01179	-1.52	3.71	X
Sample 43	P1204494-020	Air	10/25/2012	14:00	AC00870	-3.27	3.76	X
Sample 44	P1204494-021	Air	10/25/2012	10:05	AC00993	-14.47	3.72	X

Columbia Analytical Services™
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P120444

CAS Contact:

Company Name & Address (Reporting Information): Stantec, 12075 Corporate Pky, Mequon, WI 53092

Project Name: Sunoco IH Testing

Project Number: 213402094

Project Manager: John Reiter

P.O. # / Billing Information: John Reiter

Phone: 262-

Fax: 262-241-4901

Email Address for Result Reporting: John.Reiter@Stantec.com

Sampler (Print & Sign): Richard Pager

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method		Comments e.g. Actual Preservative or specific instructions
Sample 23	(1)-6.16	10/25/12	8:17 12:17	AC01664	FCA00422	29.0	11.0				
Sample 25	(2)-14.45	10/25/12		AC01093	FCA00058	29.5	—		Field	Blank	
Sample 26	(3)-3.18	10/25/12	8:59 12:59	AC00540	FCA00482	29.3	8.5				
Sample 27	(4)-4.58	10/25/12	9:07 13:07	AC01830	FCA00609	29.4	8.0				
Sample 28	(5)-2.65	10/25/12	9:10 13:10	AC01350	FCA00454	29.5	5.0				
Sample 29	(6)-0.47	10/25/12	8:23 12:23	AC00716	FCA00239	29.5	0.0				
Sample 30	(7)-2.59	10/25/12	8:29 12:29	AC00501	FCA00015	29.5	6.0				
Sample 31	(8)-3.74	10/25/12	8:34 12:34	AC00765	FCA00303	29.5	5.75				
Sample 32	(9)-5.62	10/25/12	8:37 12:37	AC01403	FCA00432	29.5	10.0				
Sample 33	(10)-0.55	10/25/12	8:41 12:41	AC01573	FCA00449	29.5	3.0				
Sample 34	(11)-2.74	10/25/12	8:44 12:44	AC00947	FCA00632	29.5	5.0				
Sample 35	(12)-2.27	10/25/12	8:48 12:48	AC0033	FCA00473	29.5	4.0				
Sample 36	(13)-2.23	10/25/12	8:51 12:51	AC01790	FCA00538	29.5	3.5				
Sample 37	(14)-3.03	10/25/12	9:00 13:00	AC01886	FCA00275	29.5	5.0				

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____
Tier II (Results + QC Summaries) _____
Tier III (Results + QC & Calibration Summaries) _____
Tier IV (Data Validation Package) 10% Surcharge _____

EDD required Yes / No
Type: _____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Richard Pager	10/25	15:09	[illegible]	10/26/12	0910
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____°C

Columbia Analytical Services™
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1204494

CAS Contact:

Company Name & Address (Reporting Information)

Project Name

Project Number

Project Manager

P.O. # / Billing Information

Phone

Fax

Email Address for Result Reporting

Sampler (Print & Sign) Richard Pager Richard Pager

Analysis Method

Comments e.g. Actual Preservative or specific instructions

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume			
Sample 38	15-2.36	10/25/12	9:08 13:08	AC01487	FCA00418	29.5	4.5				
Sample 39	16-3.56	10/25/12	9:40 13:40	AC01115	FCA00503	29.6	6.5				
Sample 40	17-0.40	10/25/12	9:43 13:43	AC01243	FCA00603	29.4	2.0				
Sample 41	18-3.00	10/25/12	9:51 13:51	AC01218	FCA00405	29.6	9.0				
Sample 42	19-1.55	10/25/12	9:55 13:55	AC01179	FCA00040	29.6	4.75				
Sample 43	20-3.31	10/25/12	10:00 14:00	AC00870	FCA00215	29.5	6.0				
Sample 44	21-14.40	10/25/12	10:05	AC00993	FCA00619	29.5	~~FRTP~~ Field		Blank		
	-19.47(3)										

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Richard Pager	10/25	15:09	[signature]	10/31/12	0910
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____°C

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1204494
Project: Sunoco IH Testing / 213402094
Sample(s) received on: 10/31/12 Date opened: 10/31/12 by: MZAMORA

Note: This form is used forall samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☐	☒	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☐	☒	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1204494-001.01	6.0 L Ambient Can					
P1204494-002.01	6.0 L Ambient Can					
P1204494-003.01	6.0 L Ambient Can					
P1204494-004.01	6.0 L Ambient Can					
P1204494-005.01	6.0 L Ambient Can					
P1204494-006.01	6.0 L Ambient Can					
P1204494-007.01	6.0 L Ambient Can					
P1204494-008.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

Sample -002 has an ID of "Sample 25" on the COC, and "Sample 28" on the canister tag.

Sample -004 has canister SN AC01830, we received canister AC01810.

Sample -018 has an ID of "Sample 41" on the COC, and "Sample 40" on the canister tag.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Stantec Consulting Services, Inc. Work order: P1204494

Project: Sunoco IH Testing / 213402094

Sample(s) received on: 10/31/12 Date opened: 10/31/12 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1204494-009.01	6.0 L Ambient Can					
P1204494-010.01	6.0 L Ambient Can					
P1204494-011.01	6.0 L Ambient Can					
P1204494-012.01	6.0 L Ambient Can					
P1204494-013.01	6.0 L Ambient Can					
P1204494-014.01	6.0 L Ambient Can					
P1204494-015.01	6.0 L Ambient Can					
P1204494-016.01	6.0 L Ambient Can					
P1204494-017.01	6.0 L Ambient Can					
P1204494-018.01	6.0 L Ambient Can					
P1204494-019.01	6.0 L Ambient Can					
P1204494-020.01	6.0 L Ambient Can					
P1204494-021.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 23** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-001

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01664

Initial Pressure (psig): -6.14 Final Pressure (psig): 3.79

Canister Dilution Factor: 2.16

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	1.1	ND	0.30	
107-06-2	1,2-Dichloroethane	ND	1.1	ND	0.27	
71-43-2	Benzene	ND	1.1	ND	0.34	
108-88-3	Toluene	**3.8**	1.1	**1.0**	0.29	
106-93-4	1,2-Dibromoethane	ND	1.1	ND	0.14	
100-41-4	Ethylbenzene	ND	1.1	ND	0.25	
179601-23-1	m,p-Xylenes	ND	2.2	ND	0.50	
95-47-6	o-Xylene	ND	1.1	ND	0.25	
98-82-8	Cumene	ND	1.1	ND	0.22	
108-67-8	1,3,5-Trimethylbenzene	ND	1.1	ND	0.22	
95-63-6	1,2,4-Trimethylbenzene	ND	1.1	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 25**
Client Project ID: **Sunoco IH Testing / 213402094**

CAS Project ID: P1204494
CAS Sample ID: P1204494-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC01093

Date Collected: 10/25/12
Date Received: 10/31/12
Date Analyzed: 11/2/12
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 26** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-003

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00540

Initial Pressure (psig): -3.15 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.20	
71-43-2	Benzene	**2.1**	0.79	**0.67**	0.25	
108-88-3	Toluene	**4.0**	0.79	**1.1**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
100-41-4	Ethylbenzene	**0.99**	0.79	**0.23**	0.18	
179601-23-1	m,p-Xylenes	**3.8**	1.6	**0.87**	0.36	
95-47-6	o-Xylene	**1.3**	0.79	**0.31**	0.18	
98-82-8	Cumene	**1.1**	0.79	**0.22**	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.79	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.4**	0.79	**0.29**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 27** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-004

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01810

Initial Pressure (psig): -4.85 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.93	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	0.93	ND	0.23	
71-43-2	Benzene	**2.3**	0.93	**0.71**	0.29	
108-88-3	Toluene	**3.6**	0.93	**0.96**	0.25	
106-93-4	1,2-Dibromoethane	ND	0.93	ND	0.12	
100-41-4	Ethylbenzene	ND	0.93	ND	0.21	
179601-23-1	m,p-Xylenes	**3.0**	1.9	**0.69**	0.43	
95-47-6	o-Xylene	**1.1**	0.93	**0.26**	0.21	
98-82-8	Cumene	ND	0.93	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.93	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.93	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 28** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-005

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01350

Initial Pressure (psig): -2.60 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.76	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.76	ND	0.19	
71-43-2	Benzene	**2.3**	0.76	**0.70**	0.24	
108-88-3	Toluene	**2.0**	0.76	**0.54**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.76	ND	0.099	
100-41-4	Ethylbenzene	ND	0.76	ND	0.18	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.35	
95-47-6	o-Xylene	ND	0.76	ND	0.18	
98-82-8	Cumene	ND	0.76	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.76	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.76	ND	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 29** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-006

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00716

Initial Pressure (psig): -0.41 Final Pressure (psig): 4.20

Canister Dilution Factor: 1.32

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.66	ND	0.18	
107-06-2	1,2-Dichloroethane	ND	0.66	ND	0.16	
71-43-2	Benzene	**1.6**	0.66	**0.50**	0.21	
108-88-3	Toluene	**6.5**	0.66	**1.7**	0.18	
106-93-4	1,2-Dibromoethane	ND	0.66	ND	0.086	
100-41-4	Ethylbenzene	**0.95**	0.66	**0.22**	0.15	
179601-23-1	m,p-Xylenes	**3.3**	1.3	**0.76**	0.30	
95-47-6	o-Xylene	**1.1**	0.66	**0.25**	0.15	
98-82-8	Cumene	ND	0.66	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.66	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	**0.99**	0.66	**0.20**	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 30** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-007

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00501

Initial Pressure (psig): -2.50 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.75	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.75	ND	0.19	
71-43-2	Benzene	**1.2**	0.75	**0.36**	0.23	
108-88-3	Toluene	**4.4**	0.75	**1.2**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.75	ND	0.098	
100-41-4	Ethylbenzene	ND	0.75	ND	0.17	
179601-23-1	m,p-Xylenes	**2.3**	1.5	**0.53**	0.35	
95-47-6	o-Xylene	**0.87**	0.75	**0.20**	0.17	
98-82-8	Cumene	ND	0.75	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.75	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.1**	0.75	**0.23**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 31** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-008

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00765

Initial Pressure (psig): -3.73 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.84	ND	0.23	
107-06-2	1,2-Dichloroethane	ND	0.84	ND	0.21	
71-43-2	Benzene	**1.3**	0.84	**0.41**	0.26	
108-88-3	Toluene	**4.8**	0.84	**1.3**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.84	ND	0.11	
100-41-4	Ethylbenzene	ND	0.84	ND	0.19	
179601-23-1	m,p-Xylenes	**2.5**	1.7	**0.57**	0.39	
95-47-6	o-Xylene	**0.91**	0.84	**0.21**	0.19	
98-82-8	Cumene	ND	0.84	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.84	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**0.94**	0.84	**0.19**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 32** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-009

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01403

Initial Pressure (psig): -5.30 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.98	ND	0.27	
107-06-2	1,2-Dichloroethane	ND	0.98	ND	0.24	
71-43-2	Benzene	**1.3**	0.98	**0.41**	0.31	
108-88-3	Toluene	**5.2**	0.98	**1.4**	0.26	
106-93-4	1,2-Dibromoethane	ND	0.98	ND	0.13	
100-41-4	Ethylbenzene	ND	0.98	ND	0.23	
179601-23-1	m,p-Xylenes	**2.5**	2.0	**0.58**	0.45	
95-47-6	o-Xylene	ND	0.98	ND	0.23	
98-82-8	Cumene	ND	0.98	ND	0.20	
108-67-8	1,3,5-Trimethylbenzene	ND	0.98	ND	0.20	
95-63-6	1,2,4-Trimethylbenzene	ND	0.98	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 33** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-010

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01573

Initial Pressure (psig): -0.55 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.65	ND	0.18	
107-06-2	1,2-Dichloroethane	ND	0.65	ND	0.16	
71-43-2	Benzene	**1.4**	0.65	**0.45**	0.20	
108-88-3	Toluene	**5.0**	0.65	**1.3**	0.17	
106-93-4	1,2-Dibromoethane	ND	0.65	ND	0.085	
100-41-4	Ethylbenzene	**0.93**	0.65	**0.21**	0.15	
179601-23-1	m,p-Xylenes	**3.5**	1.3	**0.81**	0.30	
95-47-6	o-Xylene	**1.1**	0.65	**0.26**	0.15	
98-82-8	Cumene	ND	0.65	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.65	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	**0.97**	0.65	**0.20**	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 34** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-011

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00947

Initial Pressure (psig): -2.79 Final Pressure (psig): 3.49

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.77	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.77	ND	0.19	
71-43-2	Benzene	**1.3**	0.77	**0.41**	0.24	
108-88-3	Toluene	**4.9**	0.77	**1.3**	0.20	
106-93-4	1,2-Dibromoethane	ND	0.77	ND	0.10	
100-41-4	Ethylbenzene	**0.89**	0.77	**0.21**	0.18	
179601-23-1	m,p-Xylenes	**3.3**	1.5	**0.75**	0.35	
95-47-6	o-Xylene	**1.3**	0.77	**0.30**	0.18	
98-82-8	Cumene	ND	0.77	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.77	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.1**	0.77	**0.23**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 35** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-012

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/3/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00033

Initial Pressure (psig): -2.24 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.73	ND	0.20	
107-06-2	1,2-Dichloroethane	ND	0.73	ND	0.18	
71-43-2	Benzene	**1.2**	0.73	**0.39**	0.23	
108-88-3	Toluene	**5.9**	0.73	**1.6**	0.19	
106-93-4	1,2-Dibromoethane	ND	0.73	ND	0.095	
100-41-4	Ethylbenzene	**1.0**	0.73	**0.24**	0.17	
179601-23-1	m,p-Xylenes	**3.7**	1.5	**0.84**	0.34	
95-47-6	o-Xylene	**1.4**	0.73	**0.31**	0.17	
98-82-8	Cumene	ND	0.73	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.73	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**0.95**	0.73	**0.19**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 36** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-013

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01790

Initial Pressure (psig): -2.23 Final Pressure (psig): 3.48

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.73	ND	0.20	
107-06-2	1,2-Dichloroethane	ND	0.73	ND	0.18	
71-43-2	Benzene	**0.94**	0.73	**0.29**	0.23	
108-88-3	Toluene	**4.0**	0.73	**1.1**	0.19	
106-93-4	1,2-Dibromoethane	ND	0.73	ND	0.095	
100-41-4	Ethylbenzene	**0.74**	0.73	**0.17**	0.17	
179601-23-1	m,p-Xylenes	**2.5**	1.5	**0.59**	0.34	
95-47-6	o-Xylene	**0.97**	0.73	**0.22**	0.17	
98-82-8	Cumene	ND	0.73	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.73	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**0.78**	0.73	**0.16**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 37** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-014

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01886

Initial Pressure (psig): -3.04 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.19	
71-43-2	Benzene	**11**	0.79	**3.6**	0.25	
108-88-3	Toluene	**88**	0.79	**23**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
100-41-4	Ethylbenzene	**11**	0.79	**2.5**	0.18	
179601-23-1	m,p-Xylenes	**42**	1.6	**9.7**	0.36	
95-47-6	o-Xylene	**9.1**	0.79	**2.1**	0.18	
98-82-8	Cumene	**1.3**	0.79	**0.26**	0.16	
108-67-8	1,3,5-Trimethylbenzene	**1.4**	0.79	**0.28**	0.16	
95-63-6	1,2,4-Trimethylbenzene	**3.9**	0.79	**0.79**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 38** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-015

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01487

Initial Pressure (psig): -2.38 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.75	ND	0.21	
107-06-2	1,2-Dichloroethane	ND	0.75	ND	0.18	
71-43-2	Benzene	**8.4**	0.75	**2.6**	0.23	
108-88-3	Toluene	**330**	7.5	**87**	2.0	**D**
106-93-4	1,2-Dibromoethane	ND	0.75	ND	0.097	
100-41-4	Ethylbenzene	**6.0**	0.75	**1.4**	0.17	
179601-23-1	m,p-Xylenes	**24**	1.5	**5.5**	0.34	
95-47-6	o-Xylene	**7.6**	0.75	**1.8**	0.17	
98-82-8	Cumene	**2.6**	0.75	**0.52**	0.15	
108-67-8	1,3,5-Trimethylbenzene	**3.9**	0.75	**0.80**	0.15	
95-63-6	1,2,4-Trimethylbenzene	**11**	0.75	**2.2**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 39** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-016

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01115

Initial Pressure (psig): -3.59 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	**0.96**	0.83	**0.27**	0.23	
107-06-2	1,2-Dichloroethane	ND	0.83	ND	0.21	
71-43-2	Benzene	**1.4**	0.83	**0.45**	0.26	
108-88-3	Toluene	**6.4**	0.83	**1.7**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.83	ND	0.11	
100-41-4	Ethylbenzene	**1.1**	0.83	**0.25**	0.19	
179601-23-1	m,p-Xylenes	**3.9**	1.7	**0.89**	0.38	
95-47-6	o-Xylene	**1.4**	0.83	**0.32**	0.19	
98-82-8	Cumene	ND	0.83	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.83	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**1.1**	0.83	**0.23**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 40** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-017

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01243

Initial Pressure (psig): -0.40 Final Pressure (psig): 3.96

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	**1.6**	0.65	**0.43**	0.18	
107-06-2	1,2-Dichloroethane	ND	0.65	ND	0.16	
71-43-2	Benzene	**2.0**	0.65	**0.64**	0.20	
108-88-3	Toluene	**8.8**	0.65	**2.3**	0.17	
106-93-4	1,2-Dibromoethane	ND	0.65	ND	0.085	
100-41-4	Ethylbenzene	**1.4**	0.65	**0.33**	0.15	
179601-23-1	m,p-Xylenes	**5.4**	1.3	**1.2**	0.30	
95-47-6	o-Xylene	**1.8**	0.65	**0.42**	0.15	
98-82-8	Cumene	ND	0.65	ND	0.13	
108-67-8	1,3,5-Trimethylbenzene	ND	0.65	ND	0.13	
95-63-6	1,2,4-Trimethylbenzene	**1.5**	0.65	**0.31**	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 41** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-018

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01218

Initial Pressure (psig): -3.00 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.19	
71-43-2	Benzene	**1.8**	0.79	**0.55**	0.25	
108-88-3	Toluene	**9.0**	0.79	**2.4**	0.21	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
100-41-4	Ethylbenzene	**1.3**	0.79	**0.31**	0.18	
179601-23-1	m,p-Xylenes	**5.2**	1.6	**1.2**	0.36	
95-47-6	o-Xylene	**1.9**	0.79	**0.44**	0.18	
98-82-8	Cumene	ND	0.79	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	**1.1**	0.79	**0.22**	0.16	
95-63-6	1,2,4-Trimethylbenzene	**3.1**	0.79	**0.64**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 42** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-019

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01179

Initial Pressure (psig): -1.52 Final Pressure (psig): 3.71

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.70	ND	0.19	
107-06-2	1,2-Dichloroethane	ND	0.70	ND	0.17	
71-43-2	Benzene	**1.7**	0.70	**0.53**	0.22	
108-88-3	Toluene	**8.2**	0.70	**2.2**	0.19	
106-93-4	1,2-Dibromoethane	ND	0.70	ND	0.091	
100-41-4	Ethylbenzene	**1.1**	0.70	**0.25**	0.16	
179601-23-1	m,p-Xylenes	**4.6**	1.4	**1.1**	0.32	
95-47-6	o-Xylene	**1.7**	0.70	**0.38**	0.16	
98-82-8	Cumene	ND	0.70	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	**0.87**	0.70	**0.18**	0.14	
95-63-6	1,2,4-Trimethylbenzene	**2.5**	0.70	**0.50**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 43** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-020

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00870

Initial Pressure (psig): -3.27 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.81	ND	0.22	
107-06-2	1,2-Dichloroethane	ND	0.81	ND	0.20	
71-43-2	Benzene	**1.2**	0.81	**0.37**	0.25	
108-88-3	Toluene	**10**	0.81	**2.7**	0.22	
106-93-4	1,2-Dibromoethane	ND	0.81	ND	0.11	
100-41-4	Ethylbenzene	ND	0.81	ND	0.19	
179601-23-1	m,p-Xylenes	**2.8**	1.6	**0.65**	0.37	
95-47-6	o-Xylene	**0.99**	0.81	**0.23**	0.19	
98-82-8	Cumene	ND	0.81	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.81	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**0.93**	0.81	**0.19**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 44**
Client Project ID: **Sunoco IH Testing / 213402094**

CAS Project ID: P1204494
CAS Sample ID: P1204494-021

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC00993

Date Collected: 10/25/12
Date Received: 10/31/12
Date Analyzed: 11/5/12
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P121102-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 11/2/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Method Blank** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P121105-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
108-88-3	Toluene	ND	0.50	ND	0.13	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
98-82-8	Cumene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Project ID: **Sunoco IH Testing / 213402094** CAS Project ID: P1204494

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date(s) Collected: 10/25/12
Analyst: Lusine Hakobyan Date(s) Received: 10/31/12
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 11/2 - 11/5/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P121102-MB	**101**	**99**	**96**	70-130	
Method Blank	P121105-MB	**102**	**100**	**97**	70-130	
Lab Control Sample	P121102-LCS	**99**	**99**	**100**	70-130	
Lab Control Sample	P121105-LCS	**99**	**100**	**99**	70-130	
Sample 23	P1204494-001	**101**	**101**	**95**	70-130	
Sample 25	P1204494-002	**101**	**101**	**95**	70-130	
Sample 26	P1204494-003	**101**	**101**	**97**	70-130	
Sample 27	P1204494-004	**102**	**100**	**97**	70-130	
Sample 28	P1204494-005	**101**	**100**	**96**	70-130	
Sample 29	P1204494-006	**101**	**100**	**97**	70-130	
Sample 30	P1204494-007	**101**	**100**	**97**	70-130	
Sample 31	P1204494-008	**101**	**99**	**96**	70-130	
Sample 32	P1204494-009	**102**	**99**	**97**	70-130	
Sample 33	P1204494-010	**101**	**99**	**97**	70-130	
Sample 34	P1204494-011	**102**	**100**	**97**	70-130	
Sample 35	P1204494-012	**101**	**100**	**97**	70-130	
Sample 36	P1204494-013	**100**	**101**	**97**	70-130	
Sample 37	P1204494-014	**100**	**101**	**97**	70-130	
Sample 38	P1204494-015	**99**	**100**	**98**	70-130	
Sample 39	P1204494-016	**101**	**100**	**98**	70-130	
Sample 40	P1204494-017	**101**	**100**	**97**	70-130	
Sample 40	P1204494-017DUP	**100**	**100**	**96**	70-130	
Sample 41	P1204494-018	**101**	**101**	**97**	70-130	
Sample 42	P1204494-019	**100**	**102**	**96**	70-130	
Sample 43	P1204494-020	**101**	**101**	**98**	70-130	
Sample 44	P1204494-021	**100**	**101**	**96**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P121102-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 11/02/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	204	**187**	**92**	67-116	
107-06-2	1,2-Dichloroethane	208	**180**	**87**	70-118	
71-43-2	Benzene	208	**187**	**90**	66-121	
108-88-3	Toluene	208	**172**	**83**	67-111	
106-93-4	1,2-Dibromoethane	208	**182**	**88**	73-122	
100-41-4	Ethylbenzene	206	**170**	**83**	71-117	
179601-23-1	m,p-Xylenes	412	**328**	**80**	70-116	
95-47-6	o-Xylene	200	**163**	**82**	70-116	
98-82-8	Cumene	196	**160**	**82**	70-116	
108-67-8	1,3,5-Trimethylbenzene	208	**169**	**81**	71-121	
95-63-6	1,2,4-Trimethylbenzene	200	**165**	**83**	73-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P121105-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 11/05/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	204	**191**	**94**	67-116	
107-06-2	1,2-Dichloroethane	208	**184**	**88**	70-118	
71-43-2	Benzene	208	**190**	**91**	66-121	
108-88-3	Toluene	208	**178**	**86**	67-111	
106-93-4	1,2-Dibromoethane	208	**189**	**91**	73-122	
100-41-4	Ethylbenzene	206	**174**	**84**	71-117	
179601-23-1	m,p-Xylenes	412	**338**	**82**	70-116	
95-47-6	o-Xylene	200	**167**	**84**	70-116	
98-82-8	Cumene	196	**164**	**84**	70-116	
108-67-8	1,3,5-Trimethylbenzene	208	**173**	**83**	71-121	
95-63-6	1,2,4-Trimethylbenzene	200	**171**	**86**	73-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Stantec Consulting Services, Inc.**
Client Sample ID: **Sample 40** CAS Project ID: P1204494
Client Project ID: **Sunoco IH Testing / 213402094** CAS Sample ID: P1204494-017DUP

Test Code: EPA TO-15 Date Collected: 10/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 10/31/12
Analyst: Lusine Hakobyan Date Analyzed: 11/5/12
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01243

Initial Pressure (psig): -0.40 Final Pressure (psig): 3.96

Canister Dilution Factor: 1.30

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Methyl tert-Butyl Ether	1.55	0.431	1.57	0.436	1.56	**1**	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	2.03	0.637	2.03	0.634	2.03	**0**	25	
Toluene	8.79	2.33	8.75	2.32	8.77	**0.5**	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
Ethylbenzene	1.45	0.333	1.43	0.329	1.44	**1**	25	
m,p-Xylenes	5.39	1.24	5.35	1.23	5.37	**0.7**	25	
o-Xylene	1.83	0.422	1.82	0.419	1.825	**0.5**	25	
Cumene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	1.54	0.314	1.53	0.311	1.535	**0.7**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

APPENDIX D
Soil Analytical Reports (on CD)

APPENDIX E
Supplemental Site Characterization Report for Aboveground Storage Tanks GP-270, GP-271, GP-275, GP-283, and LO-1000

SUPPLEMENTAL SITE CHARACTERIZATION REPORT
ABOVEGROUND STORAGE TANKS GP-270, GP-271, GP-275, GP-283, AND LO-1000
AREA OF INTEREST 7

PHILADELPHIA ENERGY SOLUTIONS REFINING AND MARKETING LLC FACILITY
PHILADELPHIA, PENNSYLVANIA

Sunoco, Inc. (R&M)
3144 Passyunk Avenue
Philadelphia, Pennsylvania 19145

Prepared by:
Langan Engineering & Environmental Services, Inc.
30 South 17th Street
Suite 1300
Philadelphia, Pennsylvania 19103

September 19, 2013
2574601

SUPPLEMENTAL SITE CHARACTERIZATION REPORT
ABOVEGROUND STORAGE TANKS GP-270, GP-271, GP-275, GP-283, AND LO-1000
AOI 7

Prepared by:
Langan Engineering & Environmental Services, Inc.
30 South 17th Street
Suite 1300
Philadelphia, Pennsylvania 19103

and

Aquaterra Technologies, Inc.
122 South Church Street
West Chester, PA 19382

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIFFANI LYNN DOERR
GEOLOGIST
No.PG004577

Tiffani L. Doerr, P.G.
Senior Hydrogeologist
Aquaterra Technologies, Inc.
PG004577

Kevin J. McKeever, P.E., P.G.
Senior Project Manager

September 19, 2013
2574601

TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1
1.1 OBJECTIVE 1
1.2 SCOPE OF WORK SUMMARY 2
2.0 SITE LOCATION AND DESCRIPTION 2
2.1 SITE DESCRIPTION 3
2.2 TOPOGRAPHY AND PHYSIOGRAPHY 4
3.0 GEOLOGY AND HYDROGEOLOGY 4
3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY 4
3.2 SITE SPECIFIC GEOLOGY AND HYDROGEOLOGY 6
4.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIATION EFFORTS 8
4.1 AST GP-270 8
4.2 AST GP-271 8
4.3 AST GP-275 9
4.4 AST GP-283 10
4.5 AST LO-1000 11
5.0 SUPPLEMENTAL SOIL SAMPLING ACTIVITIES 12
5.1 AST GP-271 12
6.0 SUPPLEMENTAL SOIL SAMPLING RESULTS 12
6.1 AST GP-271 12
7.0 LNAPL CHARACTERIZATION 13
8.0 GROUNDWATER INVESTIGATION 13
8.1 AST GP-270 14
8.2 AST GP-271 14
8.3 AST GP-275 14
8.4 AST GP-283 15
8.5 AST LO-1000 15
9.0 FATE AND TRANSPORT ANALYSIS 15
10.0 HUMAN HEALTH EXPOSURE ASSESSMENT/RISK ASSESSMENT 16
10.1 SURFACE WATER 17
10.2 SOILS (0-15 FEET BELOW GRADE) 17
10.3 GROUNDWATER 19
10.4 LNAPL 20
10.5 VAPOR 20
11.0 CONCLUSIONS AND RECOMMENDATIONS 20

LIST OF TABLES

Table 1 Compounds of Concern
Table 2 Summary of Surface Soil Sample Analytical Results for AOI 7 ASTs
Table 3 Summary of Subsurface Soil Sample Analytical Results for AOI 7 ASTs

LIST OF FIGURES

Figure 1 Site Location Plan
Figure 2 Site Plan
Figure 3 Cross Section Location Plan
Figure 4a Geologic Cross Section Z-Z' and BB-BB'
Figure 4b Geologic Cross Section AA-AA'
Figure 4c Geologic Cross Section CC-CC'
Figure 5 Shallow Groundwater Conditions in AOI 7
Figure 6 AST GP-270 Soil Sample Locations and Exceedances
Figure 7 AST GP-271 Soil Sample Locations and Exceedances
Figure 8 AST GP-275 Soil Sample Locations and Exceedances
Figure 9 AST GP-283 Soil Sample Locations and Exceedances
Figure 10 AST LO-1000 Soil Sample Locations and Exceedances

LIST OF APPENDICES

Appendix A PADEP Correspondence and Previous Tank Assessments and Closure Reports

1.0 INTRODUCTION

This Supplemental Site Characterization Report (SCR) has been prepared to document closure and/or corrective action activities that have been completed for aboveground storage tanks (ASTs) GP-270, GP-271, GP-275, GP-283 and LO-1000 within Area of Interest (AOI) 7 in the Philadelphia Energy Solutions Refining and Marketing LLC (PES) facility, herein referred to as facility. This Supplemental SCR is an attachment to the overall Addendum to the AOI 7 SCR/Remedial Investigation Report (RIR), dated February 29, 2011, which was submitted to the Pennsylvania Department of Environmental Protection (PADEP) and the Environmental Protection Agency (EPA) in accordance with PA One Cleanup Program. The purpose of the Supplemental SCR is to document the status of each tank and to summarize the previous and more-recent supplemental closure and/or corrective action work completed by the previous owner Sunoco Inc. (R&M) (Sunoco) in these tank areas. All of this work has been completed pursuant to the requirements of 25 Pa Code Chapter 245. Where applicable, the more-recent supplemental investigation work considered other investigation work completed at the refinery under the PA One Cleanup Program.

Numerous ASTs were removed from AOI 7 prior to August 5, 1989. Conditions in tank areas where tanks were removed prior to August 5, 1989 are being characterized under the PA One Cleanup Program investigation and are discussed in the Addendum to the AOI 7 SCR/RIR. Four tanks in AOI 7, GP-271, GP-275, GP-283 and LO-1000, have been closed-in-place. Closure documentation and/or corrective action reports were previously prepared for these tanks. One existing tank, GP 270, has had a previous release. A SCR, prepared consistent with the requirements of 25 Pa. Code §245.310, was previously prepared for this release. Refer to Appendix A of this Supplemental SCR for previous correspondence between the PADEP and Sunoco regarding these ASTs.

1.1 Objective

Since August 5, 1989, one regulated AST in AOI 7 has had a release and four regulated ASTs in AOI 7 have been closed-in-place. These ASTs include:

- AST GP 270 – Active with a release;
- AST GP 271 – Closed-in-place with no release;
- AST GP 275 – Closed-in-place with no release;

- AST GP 283 – Closed-in-place with no release; and
- AST LO 1000 – Closed-in-place with no release.

The purpose of the Supplemental SCR is to document the status of each tank and to summarize the previous and more-recent supplemental closure and/or corrective action work completed by Sunoco in these tank areas.

1.2 Scope of Work Summary

This Supplemental SCR is focused on the work completed for AOI 7 ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000. Additional site characterization activities were completed as part of the larger and more-recent AOI 7 site characterization effort to supplement previously-existing site characterization work performed by others. These supplemental activities are described in this report relative to the tank areas, and in the Addendum to the AOI 7 SCR/RIR. Soil and groundwater samples were analyzed for the site constituents of concern (COCs) as provided in Table 1. The COCs include the current constituents from the Corrective Action Process (CAP) Regulation Amendments effective December 1, 2001 (as amended).

2.0 SITE LOCATION AND DESCRIPTION

The PES Facility is located in Southwest Philadelphia. AOI 7, also known as the Girard Point Fuels Processing Area, is located on the east side of the Schuylkill River. AOI 7 is bordered by Lanier Avenue to the east, Pennypacker Avenue to the south and Schuylkill River to the west and north (Figures 1 and 2). AOI 7 encompasses approximately 130 acres, and is covered by approximately 40% of impervious surfaces. The entire western and northern boundary of AOI 7 along the Schuylkill River is bound by a sheet pile wall which is keyed into the Middle Clay Unit. The extent of the wall and the locations of ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000 are shown in Figure 2.

2.1 Site Description

The PES Facility has a long history of petroleum transportation, storage, and processing. The oldest portion of the facility started petroleum related activities in the 1860s, when the Atlantic Refining Company established an oil distribution center. In the 1900s, crude oil processing began followed by full-scale gasoline production during World War II. In addition to refining crude oil, various chemicals, such as acids and ammonia, were also produced at the Facility for a time.

AOI 7 formerly contained a fluid catalytic cracker (FCC) unit, CO boiler, sulfur plant, East and West Sludge Basin - RCRA Tank, Hazardous Waste Incinerator, and crude units. Based on review of historical reports and aerial photographs, early refining units in AOI 7 were built in the 1940s.

Currently, AOI 7 consists of crude units, FCC and alkylation units, flares, and ASTs. The ASTs contain primarily naphtha crude, waste oil, and cat charge stocks. Eight liquefied petroleum gases (LPG) tanks are located in the south-central portion of this area. A wastewater treatment plant (WWTP) is located along the southwestern portion of AOI 7. A sheet pile wall, which is keyed into the Middle Clay, extends along the entire western boundary of the AOI 7 between the Schuylkill River and AOI 7. The extent of the wall is shown in Figure 2.

The existing monitoring well network in AOI 7 includes a total of 70 wells and piezometers used investigate LNAPL and groundwater conditions. The Number 3 Separator System is the only active remediation system in AOI 7. Installed in August 2012, the system includes 10 total fluids recovery wells and extracts water and oil along the sheet pile/bulkhead and between the sheet pile/bulkhead and the No. 3 Separator. Groundwater gauging of select monitoring wells in AOI 7 occurs on an annual basis during the second quarter of each year. Annual gauging activities and results are reported to the PADEP and EPA in Quarterly Reports prepared by Sunoco. Refer to the SCR/RIR for more detail regarding AOI 7 groundwater monitoring wells.

2.2 Topography and Physiography

The overall refinery and AOI 7 falls within the Atlantic Coastal Plain Physiographic Province which is generally low-lying and relatively flat. Northwest of the Facility, bedrock outcrops along the Fall Line (the line between the area where bedrock outcrops to the west and the Coastal Plain sediments lay to the east); near the site, bedrock is overlain with thick, unconsolidated deposits of layered sand and gravel, silts, and clays. These deposits are somewhat thin along the western portion of the Coastal Plain where bedrock is at shallower depths, and gradually thicken in a southeast direction to the coast, where these deposits are several thousand feet thick. Within the refinery, at the northwestern end of the Coastal Plain, existing boring information indicates the unconsolidated deposits to be generally less than 100 feet in thickness. Land surface topography at the Facility is relatively flat, with the land surface elevation being generally less than 30 feet above mean sea level. The flatness of the topography is representative of the Coastal Plain where alluvial sediments have been deposited by meandering streams and rivers with deposition ultimately controlled by the proximity to sea level. There are no significant areas of topographic relief within the refinery.

3.0 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology and Hydrogeology

The regional aquifers underlying the Philadelphia area and the Coastal Plain have been studied extensively by the USGS and State Agencies. Site specific geology and hydrogeology were determined from site specific borings and wells.

The geology beneath the refinery is composed of several different units, which can be generally characterized as: filled land in many portions of the site; unconsolidated sand, gravel, silt, and clay, which occur as layered and differentiated units, and bedrock. The following summary discussion presents a description of each of the geologic units at the site in terms of geologic history, lithology, and regional hydrogeology.

Wissahickon Formation - According to the American Institute of Professional Geologists mapping (Bennison, 1976), the oldest geologic unit underlying the site is the

Wissahickon Formation of lower Cambrian age (540-570 million years). This formation is a metamorphosed micaceous schist and quartzite into which igneous bodies have intruded (Greenman, et al, 1961). The surface of the Wissahickon Formation was eroded by the paleo-Schuylkill River, which formed 4 channels (troughs) which fed the paleo-Delaware River. Greenman, et. al 1961, mapped the Point Breeze Trough within the Sunoco refinery. Work completed by CVM in 1985 reportedly verified the existence of this trough at the Facility.

The Wissahickon Formation is overlain by an extensive confining unit derived from the weathering of the bedrock. Near its top, the confining unit is predominately a micaceous, soft clay which grades downward, becoming increasingly sandy as the degree of weathering of the crystalline formation lessens and competent bedrock is reached. The clay layer acts as a confining layer to the water-bearing fractures of the Wissahickon Formation. Where the clay layer is present, the Wissahickon Formation behaves as an artesian aquifer, with flow generally to the southeast away from the Fall Line at a steep gradient.

Lower Sand Unit of the PRM - At the Facility, the Wissahickon Formation is overlain by the Lower Sand, which is the lowest member of the Potomac-Raritan Magothy System (upper Cretaceous age; 65 to 98 million years). The Lower Sand is a fine gravel and course sand that grades upward into medium to fine sands and contains a few layers of clay (Greenman and others, 1961). The Lower Sand is yellowish gray to yellowish brown in color and is generally overlain by the Lower and Middle Clay.

The Lower Sand is generally separated hydraulically from surface waters (i.e., Delaware River and Schuylkill River) and the surficial unconfined aquifer by superjacent, confining clays (Lower and Middle Clays). Where these confining clay layers are absent, the Lower Sand is hydraulically connected to the overlying Trenton Gravels unconfined aquifer, so that both units may behave as one hydrologic and geochemical unit.

Middle/Lower Clay - The Middle Clay member of the Raritan Formation is the most extensive clay layer in the Philadelphia area. Regionally, the thickness of the Middle Clay ranges from 0 to 60 feet, with thicknesses commonly greater than 20 feet. The Middle

and Lower Clay units appear to become one unit beneath the facility and therefore it is called the Middle/Lower Clay in this document, whereas this unit has been referred to as the Middle Clay or Lower Clay in historical reports. The Middle/Lower Clay appears to have been eroded away in parts of the Facility, particularly under AOI 10 (West Yard) and potentially in portions of AOI 8 (North Yard) and AOIs 1-4 (South Yard). The Middle/Lower Clay is characterized by a very low permeability and forms an effective barrier to groundwater flow. Shelby tube samples were collected in the Middle/Lower Clay in 2001 by URS. The results of the Atterburg limits and grain size analysis classified the Middle/Lower clay as Silty Sand, Elastic Silt and a Fat Clay.

Trenton Gravels - The Trenton Gravel overlies the Middle/Lower Clay and Lower Sand with thicknesses up to 80 feet and a typical thickness of 40 feet. The Trenton Gravel is of Pleistocene Age (Ice Age; less than 2 million years) and is a very heterogeneous unit comprised of a predominant brown to gray sand, gravel and minor amounts of clay (Owens and Minard, 1979). Along the Schuylkill River, most of the Pleistocene formations have been eroded away; although it is present over the entire Facility area.

Recent Alluvium - Overlying the Trenton Gravels Formation is recent alluvium with depths up to 78 feet. These deposits generally consist of dark gray organic clayey mud or silt and fine sand. Based on available data it is unclear if the alluvium exists throughout AOI 3. The recent alluvium is unimportant as a water source because it is significantly less permeable that the subjacent aquifers. The alluvium acts, however, as a leaky confining bed, impeding flow of groundwater to the lower aquifers. Where it overlies the Trenton Gravels, the recent alluvium may cause the Trenton Gravel to respond as an artesian aquifer. The primary hydrologic features in the vicinity of the site include the Schuylkill and Delaware Rivers. Groundwater flow in the fill/alluvium and in the Trenton Gravel is generally toward the south-southwest toward the Schuylkill River; however, there is south-southeast component of flow toward the confluence of the Delaware and Schuylkill Rivers.

3.2 Site Specific Geology and Hydrogeology

Geologic unit descriptions are provided in Section 3.1, above. To illustrate the geology at AOI 7, geologic cross section locations are shown in Figure 3 and three geologic

cross sections (Figures 4a, 4b, and 4c) trending north-south, east-west, and northwest to southeast are provided. The most recent groundwater contour information is provided in Figure 5. The following summarizes relevant information concerning geology and hydrogeology in AOI 7.

- The depth to bedrock beneath AOI 7 is at approximately 66 to 78 ft. bgs. The depth to bedrock is generally consistent with previous geologic cross sections prepared by Dames & Moore and with the USGS's interpretation (USGS, 1961);
- The Lower Sand overlies bedrock throughout AOI 7 and is generally shallower in the eastern and northern portions of AOI 7;
- In the eastern portion of AOI 7, the Middle/Lower Clay appears to be interfingered with the Lower Sand;
- Trenton Gravel is undifferentiated from the fill/alluvium throughout AOI 7 and is only present in the northwestern and northeastern portions of AOI 7;
- The fill/alluvium materials are present throughout AOI 7, and range in thickness between 10 to 25 feet;
- Groundwater in the shallow/intermediate monitoring wells occurs at depths ranging between approximately 0.8 and 9.0 ft. above mean seal level (amsl);
- Based on the January 2012 groundwater gauging event, the hydraulic gradient in the shallow/intermediate monitoring wells ranged from 0.04 near C-142 in the northwest part of AOI 7 near the sheet pile wall to 0.001 near C-131 in the southeast part of AOI 7;
- The groundwater gradient in the central portion of AOI 7 is relatively flat;
- Along the western boundary of AOI 7, flow in the shallow/intermediate zone is generally towards the east-southeast, away from the sheet pile wall; and
- Generally, groundwater flow in the shallow/intermediate zone in AOI 7 is towards the west-northwest and groundwater flow in the northern portions of AOI 7 is north.

For a more detailed description of the geology and hydrology related to AOI 7 refer to the AOI 7 SCR/RIR.

4.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIATION EFFORTS

Previous interim remedial measures or site assessment activities completed for ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000 are summarized in the following sections.

4.1 AST GP-270

Sunoco previously implemented interim remedial measures pursuant to the Corrective Action Program in response to a reported release on June 28, 2009 of approximately 2,720 gallons of recovered oil (consisting of recovered oil, slop oil, and oily water) from AST GP-270 located within AOI 7. As summarized in a Stantec Consulting Corporation (Stantec) report dated November 23, 2009 (provided in Appendix A), the recovered oil release impacted approximately 800 cubic yards of surface soil, up to a depth of 4 feet below ground surface (bgs), which Sunoco subsequently excavated. Stantec proceeded to conduct site assessment activities during and following the interim remedial measures by collecting 15 post-excavation soil samples from 4 separate soil excavations (refer to Figure 3 within Appendix A). The post-excavation soil samples were collected from 0 to 0.5 feet into the sidewalls/bottoms of the excavations. The soil samples were analyzed for the Act 2 short-list of parameters for Fuel Oil No. 4, 5, 6, waste oil, and total xylenes. Refer to Appendix A for additional soil sampling methodology.

All post-excavation soil sample results were below the PADEP non-residential Medium Specific Concentrations (MSCs) in the 15 soil samples. The Stantec sample locations are displayed on Figure 6. Historical soil sample analytical results from Stantec's 2009 report are provided in Tables 2 and 3 and displayed on Figure 6. Refer to Appendix A for additional information regarding the previous investigation.

4.2 AST GP-271

AST GP- 271 was a 3,360,000 gallon tank that measured 118 feet in diameter and was historically used to store crude oil. SECOR International Incorporated (SECOR) had previously submitted a closure report (refer to Appendix A), on behalf of Sunoco, dated July 10, 2002, to the PADEP. The purpose of this report was to formally close in place AST GP-271 as of May 16, 2002, and to adhere to the PA Code Title 25, Chapter 245 requirements with regard to tank closure assessment. Prior to the closure report

submittal, Sunoco informed the PADEP that the analytical results within the forthcoming closure report may indicate a former release related to AST GP-271. At the request of the PADEP, Sunoco submitted a SCR to the PADEP on December 27, 2002 that was prepared by SECOR and dated December 20, 2002 (refer to Appendix A). The SCR was conducted by Sunoco to further characterize the tank closure and to adhere to the PA Code Title 25, Chapter 245 requirements. As described in the 2007 SCR, SECOR conducted two rounds of soil sampling on June 4, 2002 and September 17, 2002. In June 2002, 6 soil borings were installed and surface and subsurface soil samples were collected from 4 borings and only surface samples were collected from the remaining 2 borings due to shallow groundwater. The 6 surface soil samples were collected at depths between 0and 2feet bgs and the 4 subsurface subsurface soil samples were collected from approximately 3 to 9 feet bgs above the soil to groundwater interface. All of these samples were analyzed for the PADEP Act 2 short list of parameters for Fuel Oil Numbers 4, 5, 6, and lubricating oils and fluids. The results of the samples were below PADEP Nonresidential MSCs, with the exception of two samples. The samples with results that exceeded the Nonresidential MSC for benzene were GP-4/1.5-2 ft. bgs and GP-5/1.5-2 ft. bgs with concentrations of 2.2 mg/kg and 1.2 mg/kg, respectively.

The September 2002 sampling event was conducted to vertically delineate the shallow exceedance in GP-5. A sample was collected at GP-5 from a depth of 3.5 to 4 ft. bgs with a non-detect analytical result for benzene.

The SECOR boring locations are displayed on Figure 7. Historical soil sample analytical results from Stantec's 2011 report are provided in Tables 2 and 3 and displayed on Figure 7. Refer to Appendix A for additional information regarding the previous investigation and assessment.

4.3 AST GP-275

SECOR conducted regulated tank closure assessment activities for the closure in place of AST GP-275 and documented the results in a tank closure report dated January 7, 2008. There is no record of issuance of this report by Sunoco to the PADEP or acknowledgement of receipt of this report by the PADEP (refer to Appendix A for report

details). AST GP-275 measured 120 feet in diameter and was historically used to store residual oil; there were no reported releases associate with the tank.

SECOR installed six soil borings around the perimeter of AST GP-275, three angled subsurface tank soil borings and four soil borings adjacent/beneath the aboveground delivery piping associated with the tank as part of the closure assessment activities. The perimeter soil samples were collected from approximately 3 feet bgs and the angled subsurface tank soil samples were collected from a vertical depth of approximately 5 feet bgs. The delivery piping soil samples were collected from approximately 0 to 0.5 feet bgs. All of these samples were analyzed for the PADEP Act 2 short list of parameters for Fuel Oil Numbers 4, 5, 6, and used motor oil (with the exception of lead). The soil sample results were compared to the PADEP non-residential soil MSCs. All of the soil sample results associated with AST GP-275 had reported concentrations below the referenced non-residential MSCs. Historical soil sample analytical results from SECOR's 2008 report are provided in Tables 2 and 3 and displayed in Figure 8. Refer to Appendix A for additional information regarding the SECOR's 2008 report.

4.4 AST GP-283

SECOR conducted regulated tank closure assessment activities for the change-in-service of AST GP-283 and documented the results in a tank change-in-service report dated October 26, 2005. AST GP-283 measured 120 feet in diameter. The AST was historically used to store oily water and there were no reported releases associate with the tank.

SECOR completed five soil borings around the perimeter of AST GP-283 and one soil boring adjacent/beneath the aboveground delivery piping associated with the tank. Soil borings could not be advanced along the downgradient side of the tank perimeter because this area was not accessible. Due to shallow groundwater conditions, the upgradient perimeter soil samples were collected between 0 and 1.5 feet bgs. The delivery piping soil sample was collected between 0 and 0.5 feet bgs. All samples were analyzed for the PADEP Act 2 short lists of parameters for all petroleum products with the exception of all mineral insulating oils. The soil sample results were compared to

the PADEP non-residential MSCs. All of the soil samples exhibited COC concentrations below the non-residential MSCs. Historical soil sample analytical results from SECOR's 2005 report are provided in Tables 2 and 3 and displayed in Figure 9. Refer to Appendix A for additional information regarding the SECOR's 2005 report.

During the soil boring installations, SECOR also installed a temporary monitoring well at location SB-2 to obtain a groundwater characterization sample. The groundwater sample was collected through a peristaltic pump following purging of the well and a hydrocarbon sheen was observed within the temporary well. The groundwater sample was analyzed for the PADEP Act 2 short lists of parameters except for dissolved lead and mineral insulating oils. The groundwater sample results were screened against PADEP non-residential used aquifer (TDS<2,500 mg/l) groundwater MSCs. The sample exhibited COC concentrations above the MSCs for the following compounds: benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene and chrysene. Historical groundwater sample analytical results from SECOR's 2005 report are provided in Table 3 and displayed in Figure 5. Refer to Appendix A for additional information regarding the SECOR's 2005 report.

4.5 AST LO-1000

SECOR conducted regulated tank closure assessment activities for the closure in place of AST LO-1000 and documented the results in a tank closure report dated July 7, 2007. AST LO-1000 measured 20 feet in diameter and was historically used to store sodium hydroxide. There were no reported releases associated with this tank.

SECOR installed three soil borings along the perimeter of AST LO-1000 - one angled subsurface tank soil boring and four soil borings adjacent/beneath the two aboveground delivery pipes associated with the tank. The perimeter soil samples were collected from approximately 3 feet bgs and the angled subsurface tank soil sample was collected from a depth of 5 feet bgs. The delivery piping soil samples were collected from between 0 and 0.5 feet bgs. All of these samples were analyzed for sodium and pH. Sodium was not detected above the method detection limits in all soil samples collected. The soil samples exhibited a range of pH between 5.45 to 11.44 standard units. The PADEP does not have a cleanup standard established for pH. Historical soil

sample analytical results from SECOR's 2007 report are provided in Appendix A (refer to the analytical table of the SECOR 2007 report) and displayed in Figure 10. Refer to Appendix A for additional information regarding the SECOR's 2007 report.

5.0 SUPPLEMENTAL SOIL SAMPLING ACTIVITIES

The following sections summarize the additional site characterization activities completed by Langan Engineering & Environmental Services, Inc. (Langan) in AOI 7 to supplement previously-completed work at AST GP-271. All soil samples were analyzed for the site COCs provided in Table 1. For AOI 7 soil sampling field work procedures, refer to the Addendum to the AOI 7 SCR/ RIR. For additional detail of the AOI 7 site characterization activities completed, refer to the AOI 7 SCR/RIR.

5.1 AST GP-271

The supplemental soil characterization activities completed by Langan for AST GP-271 included advancement of three soil borings (BH-12-98, BH-12-99, and BH-13-50) in the former tank area and collection of soil samples for laboratory analysis. The supplemental soil sample locations are displayed on Figure 7. Light non-aqueous phase liquids (LNAPL) was not encountered within any of the three soil borings.

6.0 SUPPLEMENTAL SOIL SAMPLING RESULTS

6.1 AST GP-271

The soil characterization sample results for BH-12-98, BH-12-99, and BH-13-50 are displayed in Table 2 and Figure 7. Concentrations of benzene and lead above their respective PADEP non-residential MSCs were reported in the sample from BH-12-98 (0.53 milligrams/kilogram (mg/kg) for benzene and 955 mg/kg for lead). No other sample concentrations were above the MSCs.

7.0 LNAPL CHARACTERIZATION

Previous site characterization activities and reports have included LNAPL investigations and results that have allowed for the detection of separate LNAPL plumes within the subsurface of AOI 7. The results have assisted with the calculations of LNAPL specific volume and mobility. More detailed information for the LNAPL investigations, results, and conclusions are presented in the AOI 7 SCR/RIR. The results of the LNAPL characterization and modeling from the SCR/RIR identified four different types or mixtures of LNAPL were identified in AOI 7 which included extremely weathered residual oil, lube oil, middle distillate, and light crude oil. LNAPL and other groundwater conditions in AOI 7 are illustrated in Figure 5. Based on the location of LNAPL in AOI 7, and the LNAPL types, the following can be concluded with regard to ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000:

<u>GP-270</u>

- Wells in the vicinity of GP-270 do not contain LNAPL.

<u>GP-271</u>

- Wells in the vicinity of GP-271 do not contain LNAPL.

<u>GP-275</u>

- Wells in the vicinity of GP-275 do not contain LNAPL.

<u>GP-283</u>

- Wells in the vicinity of GP-283 do not contain LNAPL.

<u>LO-1000</u>

- A lube oil plume exists toward the northwest of AST LO-1000 behind the sheet pile wall; however, AST LO-1000 was used to store sodium hydroxide and not lube oil.

8.0 GROUNDWATER INVESTIGATION

The groundwater monitoring well network in AOI 7 includes 70 monitoring points. Groundwater gauging of select monitoring wells in AOI 7 occurs on an annual basis during the

second quarter of each year. Annual gauging activities and results are reported to the PADEP and EPA in Quarterly Reports prepared by Sunoco. Refer to the AOI 7 SCR/RIR for more detail regarding AOI 7 groundwater monitoring wells, gauging, aquifer testing, groundwater sampling and groundwater analytical results.

The most-recent groundwater gauging and sampling of wells in AOI 7 was completed as part of the AOI 7 SCR/RIR characterization work during January 2012. The groundwater conditions, as measured during these events, are illustrated in Figure 5. The following sections discuss groundwater conditions in the vicinity of ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000 based on these groundwater monitoring events.

8.1 AST GP-270

The shallow groundwater gradient in the area of AST GP-270 is relatively flat and generally decreases to east and the west within AOI 7. These conditions are illustrated in Figure 5. The nearest shallow/intermediate well to AST GP-270 with reported historical exceedances (SVOCs) above the PADEP non-residential groundwater MSCs is C-133 which is generally in the same flat groundwater gradient area as AST GP-270. The reported exceedance of site COCs was chrysene as illustrated in Figure 5. Refer to the SCR/RIR/Cleanup Plan for further information of AOI 7 groundwater flow and reported groundwater sample exceedances.

8.2 AST GP-271

The shallow groundwater gradient in the area of AST GP-271 is relatively flat and generally decreases to east and the west within AOI 7. These conditions are illustrated in Figure 5. Given the close proximity of AST GP-271 to AST GP-270, refer to Section 8.1 above for groundwater exceedances in the vicinity of AST GP-271.

8.3 AST GP-275

The shallow groundwater gradient in the area of AST GP-275 is relatively flat and generally decreases to the west within this portion of AOI 7. These conditions are illustrated in Figure 5. The nearest shallow well to AST GP-275 with reported historical exceedances (SVOCs) above the PADEP non-residential groundwater MSCs is C-131

which is generally in the same flat groundwater gradient area as AST GP-275. The reported exceedance of site COCs was chrysene as illustrated in Figure 5. Refer to the SCR/RIR/Cleanup Plan for further information of AOI 7 groundwater flow and reported groundwater sample exceedances.

8.4 AST GP-283

The shallow groundwater gradient in the area of AST GP-283 generally flows from the east and the boundary with AOI 3 to a groundwater low to the western portion of AOI 7. These conditions are illustrated in Figure 5. The closest well to AST GP-283 that had reported historical exceedances (SVOCs) above the PADEP non-residential groundwater MSCs is C-57 which is located slightly downgradient from AST GP-283. The reported exceedance of site COCs was chrysene as illustrated in Figure 5. Refer to the SCR/RIR/Cleanup Plan for further information of AOI 7 groundwater flow and reported groundwater sample exceedances.

8.5 AST LO-1000

In the vicinity of AST LO-1000 and the western boundary of AOI 7, groundwater flow in the shallow/intermediate zone is generally towards the east-southeast, away from the sheet pile wall. These conditions are illustrated in Figure 5. The closest well to AST LO-1000 that had reported historical exceedances (SVOCs) above the PADEP non-residential groundwater MSCs is C-140 which is located towards the southwest and across from a groundwater depression. The reported exceedance of site COCs was chrysene as displayed on Figure 5. Refer to the SCR/RIR/Cleanup Plan for further information of AOI 7 groundwater flow and reported groundwater sample exceedances.

9.0 FATE AND TRANSPORT ANALYSIS

The results of previous characterization work completed in response to release assessments for ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000 were used in the fate and transport analysis for the AOI 7 SCR/RIR. Please refer to Section 7.0 of the AOI 7 SCR/RIR for information about the analysis.

10.0 HUMAN HEALTH EXPOSURE ASSESSMENT/RISK ASSESSMENT

Based on the current and future intended non-residential site use, an exposure assessment was conducted for any compounds in shallow soils (0-2 feet bgs) or deep soils (2-15 feet bgs) that exceeded the non-residential statewide health soil MSC. Potential human health exposures for the refinery are for an industrial worker scenario.

Direct contact exposure pathways to shallow soil, groundwater, and LNAPL are being evaluated under the industrial use scenario because PES has standards for personal protective equipment (PPE) and procedures for soil excavation and handling. However, because direct contact to soils could occur outside of excavation activities, soil samples were collected to further evaluate the potential for unacceptable risk of exposure.

The table on the following page serves as a summary of potential human health exposure pathways that can be reasonably expected under the current and intended future non-residential use for AOI 7. The table lists potentially contaminated media, potential receptors for these media, and a summary of whether any potentially complete exposure pathways exist at AOI 7 from the media to these receptors.

Exposure Pathway Evaluation Summary

Contaminated Media	Residents	Workers	Day Care	Construction	Trespassers	Recreation	Food
Groundwater	NA	No(1)	NA	No (2)	No	NA	NA
Air (indoor)	NA	No (3)	NA	No(3)	No	NA	NA
Soil <2 feet bgs.	NA	Yes	NA	Yes	No	NA	NA
Soil >2 feet bgs.	NA	No(4)	NA	No(4)	No	NA	NA
Surface Water	NA	No(5)	NA	No(5)	NA	NA	NA
Sediment	NA	NA	NA	NA	NA	NA	NA
LNAPL	NA	No(1)	NA	No (2)	NA	NA	NA

Notes:

(1) No complete groundwater or LNAPL pathways exist for workers that are not addressed through on-site permitting procedures and PPE.
(2) No complete groundwater or LNAPL pathway exists for construction workers that are not addressed through on-site permitting procedures and PPE.
(3) No current complete pathway to indoor air exists based on the evaluation described in Section 9.0.
(4) No complete pathway exists for site soil >2 feet deep that are not addressed through on-site permitting procedures and PPE.
(5) No complete pathway exists for surface water or sediment that is not addressed through on-site permitting procedures and PPE.

Na - Not applicable
No - No potential complete exposure pathway
Yes – Potential complete exposure pathway

A more detailed evaluation of each of these potential human health exposure pathways is presented in the following sections by media. Note – the evaluation pertains to AOI-wide data that includes data collected at ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000 as part of previous and supplemental characterization work.

10.1 Surface Water

Given the QD simulations presented in Section 7.0 of the AOI 7 SCR/RIR, groundwater flow direction in AOI 7 and the presence of the sheet pile wall located along the northern and western boundaries of AOI 7, groundwater concentrations above the PADEP non-residential groundwater MSC are not expected to reach the Schuylkill River or the other refinery boundaries. Sunoco maintains spill control equipment (absorbent booms) within the Schuylkill River in the Area of the No. 3 Separator as a preventative measure to minimize impact of LNAPL to the river, if encountered.

10.2 Soils (0-15 Feet Below Grade)

Direct Contact Exposure

Based on the data collected between 2002 and 2013, concentrations of benzene, benzo(a)pyrene, lead, naphthalene, ethylene dibromide, 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB were detected in shallow soils above the non-residential soil MSC and concentrations of benzene, lead, ethylene dibromide and 1,3,5-TMB were detected in deep soils above the non-residential soil MSC. To refine the list of compounds carried forward in the risk assessment, the compounds listed above were further screened against the EPA Region III Risk-Based Concentrations (aka, EPA Regional Screening Levels [RSLs]) in accordance with Section IV of the PADEP's Technical Guidance Manual (TGM) (dated June 8, 2002). Based on this screening, concentrations of 1,3,5-TMB and ethylene dibromide were below the EPA RSLs for industrial soil and were, therefore, eliminated from the risk assessment. Concentrations of benzene, lead naphthalene, benzo(a)pyrene, and 1,2,4-TMB were above the EPA RSLs and were, therefore, further evaluated as outlined in the January 2013 Soil Screening Procedure for Philadelphia Energy Solutions memorandum (Sunoco 2013).

As described in the January 2013 memorandum, the compounds that exceeded both the non-residential statewide health standards and EPA RSLs were compared to the

PADEP's Non-Residential Direct Contact MSC. To maintain conservatism, all soil samples (surface and subsurface) were screened against the more stringent 0-2 feet below grade direct contact criteria regardless of sample depth in the event that soils are re-used elsewhere on the Facility. Based on this screening, concentrations of naphthalene, benzene, and 1,2,4-TMB were eliminated from the risk assessment. The compounds identified for further risk assessment are benzo(a)pyrene and lead. Benzo(a)pyrene is a carcinogenic compound and risk was evaluated through the probability of an individual developing cancer as a result of lifetime exposure. Since most lead-based human health effects data are based on blood-lead concentrations instead of external dose, the traditional approach for risk assessment is not applied to characterize exposure to lead. Consequently, exposure to lead is evaluated based on the predicted concentration of lead in the blood and is evaluated separately.

The total cumulative excess cancer risk is the combined risk of exposure to the exposure point concentrations (EPCs) of any carcinogenic compounds that fail the initial screening for AOI-7. Benzo(a)pyrene is the only compound of concern carried forward for quantitative assessment and will represent total carcinogenic risk. The EPC is the representative concentration that is expected to be contacted by a receptor and is assumed to be universally present throughout the exposure area. Because soil at the Facility may be moved, the exposure area is understood to extend from the surface to 15 feet bgs. As described in the January 2013 memorandum, the 95UCL was used as the EPC except in cases where the 95UCL is higher than the maximum concentrations (USEPA 1989). If the maximum concentration is lower than the calculated 95UCL then the maximum concentration is used as the EPC. The 95UCL for benzo(a)pyrene in soil samples collected from 0 to 15 feet bgs was derived using USEPA's ProUCL Version 4.1 software. The ProUCL output is provided as Attachment A within Appendix F of the Addendum to the AOI 7 SCR/RIR.

Using the 95UCL, incremental cancer risk attributable to benzo(a)pyrene, which represents the total excess carcinogenic risk, was calculated to be 2E-06 (Table F-1 within Appendix F of the Addendum to the AOI 7 SCR/RIR). The total cumulative cancer risk, in accordance with the TGM, should not exceed 10^{-4}; therefore, carcinogenic risk is below the PADEP's acceptable level and no remedies are required.

The site-specific screening level for lead was calculated based on ingestion as presented in 25 Pa. Code § 250.306(e), Appendix A, Table 7. As described in 25 Pa. Code § 250.306(e), the non-residential soil screening value for lead is based on the method presented in the report 'The Society for Environmental Geochemistry and Health (SEGH) Task Force Approach to the Assessment of Lead in Soil' (Wixson, 1991). The model used by the PADEP and developed by SEGH was also used to calculate the site specific criterion for the Facility. Based on the SEGH model and PADEP's default parameters, PADEP's non-residential direct contact MSC default value for lead in shallow soil is 1,000 mg/kg. To develop a site-specific criteria for lead, the values used by PADEP for the target blood lead concentration (T) and geometric mean background blood lead concentration (B) were revised in consideration of site-specific conditions and updated lead data collected by the US Center for Disease Control and Prevention (CDC).

As described in Appendix F of the Addendum to the AOI 7 SCR/RIR, based on the revised parameters, the derived site-specific standard for lead in soil is 1,708 mg/kg for a facility worker. Two shallow soil samples (BH-10-26_1.5-2.0 and AOI 7 BH-12-47_1.5) have concentrations of lead above the site specific criteria and will be delineated and remediated as described in the Clean-up Plan.

10.3 Groundwater

Results of the groundwater sampling indicated COCs at concentrations above their respective PADEP non-residential groundwater MSCs, included benzene, chrysene, and lead. Based on the QD fate and transport analysis, there are no dissolved phase COCs in groundwater that appear to have the potential to extend beyond the refinery boundary. Based on the groundwater evaluation, there appears to be no unacceptable risk to ecological receptors in the Schuylkill River.

Excavations in AOI 7 are governed by PES's permitting procedures which protect against potential exposures to groundwater that could be encountered in an excavation. Also, there are no complete direct contact exposure pathways for groundwater within AOI 7 because of on-site refinery safety procedures and required PPE. Previous investigations and recent (2011) well searches verified that no monitoring wells located within 1.0 miles of the refinery are used for drinking water or agricultural use.

10.4 LNAPL

There are no complete direct contact exposure pathways for LNAPL within AOI 7 because of on-site procedures and required PPE.

10.5 Vapor

The Addendum to the AOI 7 SCR/RIR discusses the indoor air assessment that Stantec completed at the facility in October 2012. As part of this assessment, indoor air was sampled in one occupied building in AOI 7; the remainder of occupied buildings in AOI 7 are under positive pressure. The results were compared to the OSHA permissible exposure limits (PELs) because the facility is regulated by OSHA. All samples collected from the building located in AOI 7 meet OSHA's PELs, EPA Industrial Regional Screening Levels (RSLs) and PADEP Industrial Indoor Air Quality (IAQs) criteria for the protection of worker health; therefore, the potential vapor intrusion pathway for existing buildings in AOI 7 is not evaluated further in the risk assessment.

11.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the completed activities, the following conclusions and recommendations have been developed for soil, groundwater and soil vapor related to ASTs ASTs GP-270, GP-271, GP-275, GP-283 and LO-1000 within AOI 7.

<u>AST GP-270</u>
Site assessment and corrective action activities completed in response to the release associated with AST GP-270 have fulfilled the requirements of the corrective action process. Based on the results of these activities, no further corrective action is required for AST GP-270 and Sunoco requests the release from AST GP-271 be "administratively closed out."

<u>AST GP-271</u>
Based on the results of previous and supplemental characterization work completed in the vicinity of this tank pursuant to the requirements of the Corrective Action Program, including the results of fate and transport modeling and risk assessment completed, no remedies are

required to address risks associated with the soil and groundwater conditions at AST GP-271. Therefore, no further corrective action is required and Sunoco requests that AST GP-271 be "administratively closed out."

AST GP-275

Based on the results of previous and supplemental characterization work completed in the vicinity of this tank pursuant to the requirements of the Corrective Action Program, including the results of fate and transport modeling and risk assessment completed, no remedies are required to address risks associated with the soil and groundwater conditions at AST GP-275. Therefore, no further corrective action is required for this tank and AST GP-275 should be "administratively closed out."

AST GP-283

Based on the results of closure assessment work completed in the vicinity of this tank pursuant to the closure requirements of Chapter 245, no corrective action is required for the change-in-service of AST GP-283 and Sunoco requests this tank be "administratively closed out" for the change-in-service.

AST LO-1000

Based on the results of closure assessment work completed in the vicinity of this tank pursuant to the closure requirements of Chapter 245, no corrective action is required for AST LO-1000 and Sunoco requests this tank be "administratively closed out."

TABLES

Table 1
Constituents of Concern
AOI 7
PES Facility
Philadelphia, Pennsylvania

METALS	CAS No.
Lead (dissolved)	7439-92-1

VOCs	CAS No.
1,2-Dichloroethane	107-06-2
1,2,4-Trimethylbenzene	95-63-6
1,3,5-Trimethylbenzene	108-67-8
Benzene	71-43-2
Cumene	98-82-8
Ethylbenzene	100-41-4
Methyl tertiary butyl ether	1634-04-4
Toluene	108-88-3
Xylenes (total)	1330-20-7
Ethylene dibromide	106-93-4

SVOCs/ PAHs	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

Notes:
1. Constituents are from Pennsylvania Corrective Action Process (CAP) Regulation Amendments effective December 1, 2001; provided in Chapter VI, Section E (pgs. 29-30) of PADEP Document, *Closure Requirements for Underground Storage Tank Systems,* effective April 1, 1998 and the March 18, 2008 revised PADEP Petroleum Short List.

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP-271-GP-1				GP-271-GP-2				GP-271-GP-3				GP-271-GP-4				GP-271-GP-5				GP-271-GP-6			
							Sample ID	GP-1(0-0.5)				GP-2 (0.5-1.0)				GP-3 (1.5-2.0)				GP-4 (1.5-2.0)				GP-5 (1.5-2.0)				GP-6 (0-0.5)			
							Sample Date	6/4/2002				6/4/2002				6/4/2002				6/4/2002				6/4/2002				6/4/2002			
							Sample Depth	0-0.5				0.5-1				1.5-2				1.5-2				1.5-2				0-0.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND		0.27	1	ND		0.22	1	0.15	J	0.37	1	**2.2**		0.47	1	**1.2**		0.54	1	0.076	J	0.27	1
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	NA				NA				NA				NA				NA				NA			
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	NA				NA				NA				NA				NA				NA			
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	NA				NA				NA				NA				NA				NA			
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	ND		0.44	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	0.25	J	0.44	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		**16**	1	0.33	J	0.44	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	0.44		0.44	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	ND		0.44	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	ND		16	1	0.41	J	0.44	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	0.75		0.65	1	120		16	1	ND		0.44	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND		0.27	1	ND		0.22	1	1.2		0.37	1	1.5		0.47	1	ND		0.54	1	0.19	J	0.27	1
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND		0.37	1	ND		0.37	1	0.29	J	0.53	1	0.84		0.65	1	110		16	1	0.39	J	0.44	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND		0.37	1	ND		0.37	1	ND		0.53	1	ND		0.65	1	11	J	16	1	0.44		0.44	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	AST 283-SB-1				AST 283-SB-3				AST 283-SB-4				AST 283-SB-5				AST 283-CV-1				GP 1002-1002 PIPE-1			
							Sample ID	SB-1_06/28/2005				SB-3_06/28/2005				SB-4_06/28/2005				SB-5_06/28/2005				CV-1_06/28/2005				1002 PIPE-1			
							Sample Date	6/28/2005				6/28/2005				6/28/2005				6/28/2005				6/28/2005				4/7/2006			
							Sample Depth	1-1.5				1-1.5				1-1.5				1-1.5				0-0.5				unknown			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	ND	U	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	ND	U	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	51.44	0.059	J	0.0005	44.88	0.033	J	0.0005	50.92	ND	U	0.0005	46.21	ND	U	0.0005	47.48	ND		**0.52**	5405.4
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	0.17	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		1.3	5405.4
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	0.064	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		0.52	5405.4
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	ND	U	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		1.3	5405.4
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	ND	U	0.0005	51.44	ND	U	0.0005	44.88	ND	U	0.0005	50.92	ND	U	0.0005	46.21	ND	U	0.0005	47.48	NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.073	J	0.001	51.44	0.074	J	0.001	44.88	0.2	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	ND		0.52	5405.4
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.46	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	ND		0.014	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	ND	U	0.033	5	0.26	J	0.033	5	0.92	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.17		0.032	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	ND	U	0.033	5	0.26	J	0.033	5	0.9	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	1.2		0.048	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	ND	U	0.033	5	0.32	J	0.033	5	0.85	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.83		0.064	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.62	J	0.033	5	ND	U	0.033	5	0.26	J	0.033	5	13		0.064	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	1.6	J	0.033	5	0.22	J	0.033	5	1.1		0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.65		0.048	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.21	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	2		0.096	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	ND	U	0.033	5	ND	U	0.033	5	0.51	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	ND	U	0.001	51.44	ND	U	0.001	44.88	0.26	J	0.001	50.92	ND	U	0.001	46.21	ND	U	0.001	47.48	4	J	2.6	5405.4
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	ND	U	0.033	5	0.37	J	0.033	5	0.79	J	0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.16	J	0.048	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	ND	U	0.033	5	0.48	J	0.033	5	1		0.033	5	ND	U	0.033	5	ND	U	0.033	5	0.53	J	0.11	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	317		0.78	1	97.9		0.78	1	113		0.78	1	81.1		0.78	1	121		0.78	1	NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	13.3		0.5	1	12.5		0.5	1	13.7		0.5	1	15.6		0.5	1	12.1		0.5	1	16.8		0.5	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP 1002-1002 PIPE-2				GP 1002-1002-1				GP 1002-1002-2				GP 1002-1002-3				GP-1002-1002				GP 1100-1100-1			
							Sample ID	1002 PIPE-2				1002-1				1002-2				1002-3				1002				1100-1			
							Sample Date	4/7/2006				4/7/2006				4/7/2006				4/7/2006				5/11/2006				5/11/2006			
							Sample Depth	unknown				unknown				unknown				unknown				unknown				unknown			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.16		0.025	250.3	ND		**0.58**	1021.5	**1.4**		0.12	1053.7	ND		0.041	483.6	ND		0.017	26.32	**1**		0.017	21.89
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.27		0.063	250.3	2.2		0.3	1021.5	6.8		0.31	1053.7	1.9		0.13	483.6	ND		0.034	26.32	0.042	J	0.035	21.89
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.047	J	0.025	250.3	0.63		0.12	1021.5	1.9		0.12	1053.7	0.56		0.052	483.6	ND		0.034	26.32	0.59		0.035	21.89
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.064	J	0.063	250.3	5.8		0.3	1021.5	12		0.31	1053.7	6.2		0.13	483.6	0.52		0.034	26.32	0.18		0.035	21.89
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.12		0.025	250.3	0.6		0.12	1021.5	1.2		0.12	1053.7	0.23		0.052	483.6	ND		0.034	26.32	ND		0.035	21.89
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	0.076	J	0.015	1	9.1		0.17	10	5.5		0.18	10	8.9		0.16	10	4.8		0.21	1	82		5.3	10
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.31		0.033	1	6.1		0.39	10	3		0.39	10	5.4		0.36	10	2.9		0.21	1	16		0.53	10
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	1.2		0.05	1	5.8		0.58	10	2.8	J	0.59	10	4.9		0.54	10	2.3		0.21	1	9.7		0.53	10
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	1		0.067	1	4.8		0.77	10	2.5	J	0.79	10	5.5		0.72	10	2.6		0.21	1	9.3		0.53	10
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	5.7		0.067	1	6		0.77	10					5.5		0.72	10	1.6		0.21	1	4.2		0.53	10
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	0.33	J	0.05	1	11		0.58	10	6.6		0.59	10	11		0.54	10	3.6		0.21	1	29		0.53	10
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	0.47	J	0.1	1	22		1.2	10	20		1.2	10	20		1.1	10	6.3		0.21	1	210		5.3	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				NA				NA				NA				3.2		0.53	10
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	2.5		0.13	250.3	14		0.59	1021.5	**30**		0.62	1053.7	4.5		0.26	483.6	0.043	J	0.034	26.32	0.099	J	0.035	21.89
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.85		0.05	1	41		0.58	10	26		0.59	10	36		0.54	10	13		0.21	1	620		5.3	10
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	1.3		0.12	1	14		1.4	10	34		1.4	10	16		1.3	10	7.3		0.21	1	60		0.53	10
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	20.3		0.5	1	31.1		0.5	1	32.1		0.5	1	26.2		0.5	1	22		0.5	1	36.9		0.5	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP 1100-1100-2				GP 1100-1100-3				GP 1100-1100-CV-1				GP 1100-1100-CV-2				GP 1100-1100-CV-3				GP 1100-1100-ELBOW			
							Sample ID	1100-2				1100-3				1100-CV-1				1100-CV-2				1100-CV-3				1100-ELBOW			
							Sample Date	5/11/2006				5/11/2006				5/11/2006				5/11/2006				5/11/2006				5/11/2006			
							Sample Depth	unknown				unknown				unknown				unknown				unknown				unknown			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.097	J	0.017	22.14	0.25		0.021	25.35	0.017	J	0.015	24.06	ND		0.016	24.8	ND		0.015	24.85	0.16	J	0.017	25.46
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.13	J	0.034	22.14	0.11	J	0.042	25.35	ND		0.03	24.06	0.18		0.031	24.8	0.031	J	0.03	24.85	0.12	J	0.033	25.46
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.28		0.034	22.14	0.33		0.042	25.35	ND		0.03	24.06	ND		0.031	24.8	ND		0.03	24.85	ND		0.033	25.46
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.09	J	0.034	22.14	0.076	J	0.042	25.35	ND		0.03	24.06	ND		0.031	24.8	ND		0.03	24.85	ND		0.033	25.46
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	ND		0.034	22.14	ND		0.042	25.35	ND		0.03	24.06	ND		0.031	24.8	ND		0.03	24.85	0.25		0.033	25.46
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	21		0.26	10	32		0.55	10	NA				41		0.42	5	0.84	J	0.41	1	1.6	J	0.43	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	3.8		0.26	10	8.2		0.55	10	NA				26		0.42	5	0.63	J	0.41	1	0.89	J	0.43	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	2.6		0.26	10	3.8		0.55	10	NA				**13**		0.42	5	0.79	J	0.41	1	1.2	J	0.43	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	2.6		0.26	10	4		0.55	10	NA				8.5		0.42	5	0.81	J	0.41	1	0.87	J	0.43	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	1.9		0.26	10	2.4	J	0.55	10	NA				6.2		0.42	5	3.4		0.41	1	1.8	J	0.43	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	7.1		0.26	10	22		0.55	10	NA				41		0.42	5	2.3		0.41	1	3		0.43	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	64		2.6	10	160		5.5	10	NA				59		2.1	5	ND		0.41	1	1.1		0.43	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	1.5		0.26	10	1.8	J	0.55	10	NA				4		0.42	5	1.5	J	0.41	1	1.2	J	0.43	1
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.35		0.034	22.14	1.2		0.042	25.35	0.18		0.03	24.06	0.18		0.031	24.8	0.054	J	0.03	24.85	0.048	J	0.033	25.46
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	180		2.6	10	440		5.5	10	NA				160		2.1	5	0.63	J	0.41	1	2.6		0.43	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	17		0.26	10	41		0.55	10	NA				78		2.1	5	1	J	0.41	1	2.9		0.43	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	35.3		0.5	1	39.3		0.5	1	19.3		0.5	1	20.8		0.5	1	17.9		0.5	1	23.3		0.5	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP 1100-1100-JOINTS				GP 1100-1100CV-1				GP-275-LINE1				GP-275-LINE2				GP-275-LINE3				GP-275-LINE4			
							Sample ID	1100-JOINTS				1100CV-1				GP-275-LINE1				GP-275-LINE2				GP-275-LINE3				GP-275-LINE4			
							Sample Date	5/11/2006				6/19/2006				5/25/2007				5/25/2007				5/25/2007				5/25/2007			
							Sample Depth	unknown				unknown				0-0.5				0-0.5				0-0.5				0-0.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.33		0.019	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	86		0.38	286.7	NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	1.3		0.038	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	2.6		0.038	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	5.6		0.038	286.7	NA				ND	UD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	7.4		0.44	1	5.6		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	5		0.44	1	10		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	2.3		0.44	1	6.8		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	1.8	J	0.44	1	7.9		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	3.3		0.44	1	3.8		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	8.2		0.44	1	16		0.2	2	0.23	J	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	16		0.44	1	11		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	1.6	J	0.44	1	2.7		0.2	2	ND	U	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	5.6		0.038	286.7	NA				0.23	JD	0.24	50	ND	UD	0.21	50	ND	UD	0.23	50	ND	UD	0.16	50
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	31		0.44	1	22		0.2	2	0.56		0.34	1	0.21	J	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	13		0.44	1	31		0.41	2	0.33	J	0.34	1	ND	U	0.36	1	ND	U	0.37	1	ND	U	0.35	1
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	24.7		0.5	1	18.1		0.0005	1	NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP-277-LINE1				GP-277-LINE2				GP-277-LINE3				LO-1000-LINE-1				LO-1000-LINE-2				LO-1000-LINE-3			
							Sample ID	GP-277-LINE1				GP-277-LINE2				GP-277-LINE3				LO-1000-LINE-1				LO-1000-LINE-2				LO-1000-LINE-3			
							Sample Date	5/25/2007				5/25/2007				5/25/2007				5/30/2007				5/30/2007				5/30/2007			
							Sample Depth	0-0.5				0-0.5				0-0.5				0-0.5				0-0.5				0-0.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	**2.3**	D	0.23	50	ND	UD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.68	D	0.23	50	ND	UD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.12	JD	0.23	50	ND	UD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	1.7	D	0.23	50	0.098	JD	0.14	50	ND	UD	0.16	50	NA				NA				NA			
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.36	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	0.73	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	0.76	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	0.83	D	0.72	1	ND	U	0.36	1	0.26	J	0.38	1	NA				NA				NA			
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	0.63	JD	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	1.7	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	ND	UD	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	0.46	JD	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.58	D	0.23	50	0.13	JD	0.14	50	0.13	JD	0.16	50	NA				NA				NA			
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	0.86	D	0.72	1	ND	U	0.36	1	ND	U	0.38	1	NA				NA				NA			
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	2.5	D	0.72	1	ND	U	0.36	1	0.3	J	0.38	1	NA				NA				NA			
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				65	B	650	1	820		540	1	110	B	620	1
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	LO-1000-LINE-4				BH-10-09				GP-270-S-6				GP-270-S-11				GP-270-S-13				GP-270-S-14			
							Sample ID	LO-1000-LINE-4				BH-10-09				S-6_09/29/2009				S-11_10/06/2009				S-13_10/06/2009				S-14_10/06/2009			
							Sample Date	5/30/2007				4/6/2009				9/29/2009				10/6/2009				10/6/2009				10/6/2009			
							Sample Depth	0-0.5				0-2				1.5-2				1.5-2				1-1.5				1-1.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	0.13	J	0.001	75.2
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	ND	U	0.001	75.2
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	NA				NA				ND	U	0.0005	58.69	0.12	J	0.0005	54.42	ND	U	0.0005	74.76	ND	U	0.0005	75.2
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	NA				NA				ND	U	0.001	58.69	0.083	J	0.001	54.42	0.14	J	0.001	74.76	0.19	J	0.001	75.2
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	ND	U	0.001	75.2
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	NA				NA				ND	U	0.001	58.69	ND	U	0.001	54.42	ND	U	0.001	74.76	ND	U	0.001	75.2
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	NA				NA				0.36	J	0.001	58.69	0.4		0.001	54.42	0.4	J	0.001	74.76	0.28	J	0.001	75.2
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	NA				NA				7.5		0.033	10	0.89	J	0.033	10	1.1	J	0.033	10	1.1	J	0.033	10
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	NA				NA				8.8		0.033	10	1.6	J	0.033	10	1.8	J	0.033	10	1.9	J	0.033	10
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	NA				NA				7.1		0.033	10	1.6	J	0.033	10	2.4	J	0.033	10	2.5	J	0.033	10
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	NA				NA				8.6		0.033	10	2		0.033	10	2.8		0.033	10	3		0.033	10
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	NA				NA				3.7		0.033	10	1.1	J	0.033	10	1.9	J	0.033	10	2.3	J	0.033	10
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	NA				NA				11		0.033	10	1.9	J	0.033	10	1.9	J	0.033	10	1.9	J	0.033	10
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	NA				NA				7.3		0.033	10	0.65	J	0.033	10	ND	U	0.033	10	ND	U	0.033	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	NA				NA				3.1		0.033	10	0.96	J	0.033	10	1.6	J	0.033	10	1.9	J	0.033	10
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	NA				NA				0.41	J	0.001	58.69	0.29	J	0.001	54.42	0.67		0.001	74.76	0.8		0.001	75.2
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	NA				NA				17		0.033	10	1.7	J	0.033	10	3		0.033	10	2.5	J	0.033	10
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	NA				NA				23		0.033	10	3.5		0.033	10	2	J	0.033	10	2.3	J	0.033	10
Metals																															
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	NA				441		0.015	10	450		0.591	1	99.9		0.591	1	330		0.591	1	366		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	46	B	570	1	NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				14.7		0.5	1	44.9		0.5	1	15		0.5	1	35.9		0.5	1	33.8		0.5	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).

[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).

[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.

[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).

CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 2
Summary of Surface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Surface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Surface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[1]	Location	GP-270-S-15			
							Sample ID	S-15_10/06/2009			
							Sample Date	10/6/2009			
							Sample Depth	1.5-2			
							Sample Purpose	Tank Closure			
							Unit	Result	Q	DL	DF
Volatile Organic Compounds											
1,2,4-Trimethylbenzene	95-63-6	560	35	35	260	560	mg/kg	0.16	J	0.001	70.84
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	3.7	0.005	0.005	0.17	3.7	mg/kg	NA			
1,2-Dichloroethane	107-06-2	86	0.5	0.5	2.2	86	mg/kg	NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	480	9.3	9.3	10000	480	mg/kg	ND	U	0.001	70.84
Benzene	71-43-2	290	0.5	0.5	5.4	290	mg/kg	0.11	J	0.0005	70.84
Dimethyl Benzene/ Xylenes, Total	1330-20-7	8000	1000	1000	2700	8000	mg/kg	0.64		0.001	70.84
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.19	J	0.001	70.84
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	70.84
Tert-Butyl Methyl Ether	1634-04-4	3200	2	2	220	3200	mg/kg	NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.63		0.001	70.84
Semi-Volatile Organic Compounds											
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	4.4		0.033	10
Benzo(A)Anthracene	56-55-3	110	320	110	2.1	110	mg/kg	5.8		0.033	10
Benzo(A)Pyrene	50-32-8	11	46	11	0.21	11	mg/kg	6.5		0.033	10
Benzo(B)Fluoranthene	205-99-2	110	170	110	2.1	110	mg/kg	7.5		0.033	10
Benzo(G,H,I)Perylene	191-24-2	170000	180	180		170000	mg/kg	4.6		0.033	10
Chrysene	218-01-9	11000	230	230	210	11000	mg/kg	7.3		0.033	10
Fluorene	86-73-7	110000	3800	3800	22000	110000	mg/kg	3.2		0.033	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	110	28000	110	2.1	110	mg/kg	3.6		0.033	10
Naphthalene	91-20-3	56000	25	25	18	56000	mg/kg	0.43	J	0.001	70.84
Phenanthrene	85-01-8	190000	10000	10000		190000	mg/kg	4.9		0.033	10
Pyrene	129-00-0	84000	2200	2200	17000	84000	mg/kg	15		0.033	10
Metals											
Lead	7439-92-1	1000	450	450	800	1000	mg/kg	386		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA			
General Chemistry											
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	35.5		0.5	1

Notes:

[1] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
MSC - Medium Specific Concentration
DL - Lab detection limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Non-Res Soil MSC and EPA Soil RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
E - Compound was detected above the calibration range.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Subsurface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-271-GP-2				GP-271-GP-4				GP-271-GP-5				GP-271-GP-5				GP-275-PER1				GP-275-PER2			
							Sample ID	GP-2 (8.5-9.0)				GP-4 (3.5-4.0)				GP-5 (3.5-4)				GP-5(3.5-4)_09/17/2002				GP-275-PER1				GP-275-PER2			
							Sample Date	6/4/2002				6/4/2002				9/17/2002				9/17/2002				5/24/2007				5/24/2007			
							Sample Interval (ft)	8.5-9				3.5-4				3.5-4				3.5-4				3-3.5				3-3.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND		0.41	1	ND		0.35	1	ND		0.39	1	ND	U	0.001	48.22	ND	UD	0.27	50	ND	UD	0.27	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	NA				NA				NA				NA				ND	UD	0.27	50	ND	UD	0.27	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	NA				NA				NA				NA				ND	UD	0.27	50	ND	UD	0.27	50
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	NA				NA				NA				NA				0.59	D	0.27	50	0.71	D	0.27	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND		0.58	1	0.39	J	0.56	1	NA				NA				ND	U	0.58	1	ND	U	0.56	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	ND		0.58	1	0.44	J	0.56	1	NA				NA				1.8		0.58	1	0.38	J	0.56	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	ND		0.58	1	0.41	J	0.56	1	NA				NA				2		0.58	1	0.4	J	0.56	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	ND		0.58	1	0.46	J	0.56	1	NA				NA				2.5		0.58	1	0.56		0.56	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	ND		0.58	1	ND		0.56	1	NA				NA				1.1		0.58	1	ND	U	0.56	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	ND		0.58	1	0.58		0.56	1	NA				NA				2		0.58	1	0.7		0.56	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND		0.58	1	0.4	J	0.56	1	NA				NA				ND	U	0.58	1	ND	U	0.56	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	NA				NA				NA				NA				1.1		0.58	1	ND	U	0.56	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.92		0.41	1	0.72		0.35	1	NA				NA				0.43	D	0.27	50	0.6	D	0.27	50
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.6		0.58	1	1.5		0.56	1	NA				NA				2.2		0.58	1	0.59		0.56	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	0.57	J	0.58	1	1.4		0.56	1	NA				NA				2.9		0.58	1	1		0.56	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				37.7		0.5	1	NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10	Reported result exceeds the PADEP Non-Residential Soil MSC
10	Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10	Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10	RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Subsurface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-275-PER3				GP-275-PER4				GP-275-PER5				GP-275-PER6				GP-277-PER1				GP-277-PER2			
							Sample ID	GP-275-PER3				GP-275-PER4				GP-275-PER5				GP-275-PER6				GP-277-PER1				GP-277-PER2			
							Sample Date	5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007			
							Sample Interval (ft)	3-3.5				3-3.5				3-3.5				3-3.5				3-3.5				3-3.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	UD	0.23	50	ND	UD	0.23	50	ND	UD	0.2	50	ND	UD	0.34	50	**1.1**	D	0.16	50	**2.8**	D	0.17	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	UD	0.23	50	ND	UD	0.23	50	ND	UD	0.2	50	ND	UD	0.34	50	1.2	D	0.16	50	1.9	D	0.17	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	UD	0.23	50	ND	UD	0.23	50	ND	UD	0.2	50	ND	UD	0.34	50	1.7	D	0.16	50	2.4	D	0.17	50
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.49	D	0.23	50	0.5	D	0.23	50	0.38	D	0.2	50	ND	UD	0.34	50	1.4	D	0.16	50	2.6	D	0.17	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.55	1	ND	U	0.51	1	ND	U	0.5	1	ND	U	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.81		0.55	1	1.1		0.51	1	1		0.5	1	0.46	J	0.48	1	0.32	J	0.4	1	ND	U	0.38	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.99		0.55	1	1.7		0.51	1	1.4		0.5	1	0.59		0.48	1	0.31	J	0.4	1	ND	U	0.38	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	1.3		0.55	1	2.6		0.51	1	1.5		0.5	1	0.6		0.48	1	0.42		0.4	1	ND	U	0.38	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	0.39	J	0.55	1	0.57		0.51	1	0.83		0.5	1	ND	U	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.89		0.55	1	1.2		0.51	1	1.2		0.5	1	0.51		0.48	1	0.41		0.4	1	ND	U	0.38	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.55	1	ND	U	0.51	1	ND	U	0.5	1	ND	U	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	0.36	J	0.55	1	0.54		0.51	1	0.7		0.5	1	0.43	J	0.48	1	ND	U	0.4	1	ND	U	0.38	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.35	D	0.23	50	0.37	D	0.23	50	0.2	JD	0.2	50	ND	UD	0.34	50	1	D	0.16	50	0.87	D	0.17	50
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	0.83		0.55	1	0.85		0.51	1	0.64		0.5	1	0.47	J	0.48	1	0.51		0.4	1	ND	U	0.38	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	1.8		0.55	1	1.4		0.51	1	1.4		0.5	1	0.69		0.48	1	0.82		0.4	1	ND	U	0.38	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Subsurface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-277-PER3				GP-277-PER4				GP-277-PER5				GP-277-PER6				GP-277-SUB1				GP-277-SUB2			
							Sample ID	GP-277-PER3				GP-277-PER4				GP-277-PER5				GP-277-PER6				GP-277-SUB1				GP-277-SUB2			
							Sample Date	5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007				5/24/2007			
							Sample Interval (ft)	3-3.5				3-3.5				3-3.5				3-3.5				5-5.5				5-5.6			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				NA				NA			
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	**3.3**	D	0.24	50	**3**	D	0.24	50	**8.6**	D	0.23	50	**3.8**	D	0.26	50	**0.79**	D	0.25	50	**1.3**	D	0.26	50
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				NA				NA			
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	1.8	D	0.24	50	4.1	D	0.24	50	1.1	D	0.23	50	12	D	0.26	50	0.25	D	0.25	50	0.53	D	0.26	50
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	2.7	D	0.24	50	4.3	D	0.24	50	2.5	D	0.23	50	7.2	D	0.26	50	0.9	D	0.25	50	0.16	JD	0.26	50
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	2.7	D	0.24	50	4	D	0.24	50	3.1	D	0.23	50	4.3	D	0.26	50	0.37	D	0.25	50	0.79	D	0.26	50
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.55	1	2.7		0.54	1	ND	UD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	0.33	J	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	0.35	J	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	3.9	JD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	0.49	J	0.55	1	0.48	J	0.54	1	ND	UD	5.3	10	3.5	JD	5.6	10	ND	UD	5.5	10	0.55		0.54	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	ND	U	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	4.4	JD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	0.37	J	0.55	1	0.44	J	0.54	1	5.5	D	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.55	1	1.1		0.54	1	3.7	JD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	ND	U	0.55	1	ND	U	0.54	1	ND	UD	5.3	10	3.1	JD	5.6	10	ND	UD	5.5	10	ND	U	0.54	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.48	D	0.24	50	1.5	D	0.24	50	0.57	D	0.23	50	8.2	D	0.26	50	0.44	D	0.25	50	0.45	D	0.26	50
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	ND	U	0.55	1	2.7		0.54	1	11	D	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	0.62		0.54	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	0.46	J	0.55	1	0.4	J	0.54	1	4.9	JD	5.3	10	ND	UD	5.6	10	ND	UD	5.5	10	0.53	J	0.54	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				NA				NA			
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Subsurface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-277-SUB3				GP-275-SUB-1				GP-275-SUB-2				GP-275-SUB-3				GP-270-S-1				GP-270-S-2			
							Sample ID	GP-277-SUB3				GP-275-SUB-1				GP-275-SUB-2				GP-275-SUB-3				S-1_09/21/2009				S-2_09/21/2009			
							Sample Date	5/24/2007				9/4/2007				9/4/2007				9/4/2007				9/21/2009				9/21/2009			
							Sample Interval (ft)	5-5.5				5-5.5				5-5.5				5-5.5				4-4.5				4-4.5			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	NA				NA				NA				NA				ND	U	0.001	41.05	ND	U	0.001	37.48
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	NA				NA				NA				NA				ND	U	0.001	41.05	ND	U	0.001	37.48
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	**2.1**	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.0005	41.05	ND	U	0.0005	37.48
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	NA				NA				NA				NA				ND	U	0.001	41.05	ND	U	0.001	37.48
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.52	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.001	41.05	ND	U	0.001	37.48
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	0.92	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.001	41.05	ND	U	0.001	37.48
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	1	D	0.25	50	ND	U	0.0058	1	ND	U	0.0054	1	ND	U	0.0051	1	ND	U	0.001	41.05	ND	U	0.001	37.48
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	0.43		0.033	1	0.11	J	0.033	1
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.4		0.033	1	0.32		0.033	1
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.7		0.033	1	0.36		0.033	1
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	2.2		0.033	1	0.41		0.033	1
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.4		0.033	1	0.29		0.033	1
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.4		0.033	1	0.34		0.033	1
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	0.21	J	0.033	1	0.062	J	0.033	1
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.2		0.033	1	0.25		0.033	1
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.55	D	0.25	50	0.0022	J	0.0058	1	0.002	J	0.0054	1	0.0023	J	0.0051	1	0.18	J	0.001	41.05	ND	U	0.001	37.48
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.1		0.033	1	0.27		0.033	1
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	ND	U	0.54	1	ND	U	0.38	1	ND	U	0.36	1	ND	U	0.34	1	1.9		0.033	1	0.44		0.033	1
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	NA				NA				NA				NA				73.1		0.591	1	47.1		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				30.1		0.5	1	26.4		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Subsurface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-270-S-3				GP-270-S-4				GP-270-S-5				GP-270-S-7				GP-270-S-8				GP-270-S-9			
							Sample ID	S-3_09/21/2009				S-4_09/22/2009				S-5_09/22/2009				S-7_09/29/2009				S-8_09/29/2009				S-9_10/06/2009			
							Sample Date	9/21/2009				9/22/2009				9/22/2009				9/29/2009				9/29/2009				10/6/2009			
							Sample Interval (ft)	3-3.5				4-4.5				4-4.5				2.5-3				2-2.5				2.5-3			
							Sample Purpose	Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	ND	U	0.001	55.31	0.12	J	0.001	72.75
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA				NA				NA				NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA				NA				NA				NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	ND	U	0.001	55.31	ND	U	0.001	72.75
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	53.76	ND	U	0.0005	48.45	ND	U	0.0005	45.87	ND	U	0.0005	53.65	ND	U	0.0005	55.31	ND	U	0.0005	72.75
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	0.18	J	0.001	55.31	0.17	J	0.001	72.75
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	ND	U	0.001	53.65	ND	U	0.001	55.31	ND	U	0.001	72.75
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	53.76	ND	U	0.001	48.45	ND	U	0.001	45.87	0.1	J	0.001	53.65	ND	U	0.001	55.31	ND	U	0.001	72.75
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA				NA				NA				NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.41	J	0.001	53.76	ND	U	0.001	48.45	0.071	J	0.001	45.87	0.28	J	0.001	53.65	0.44	J	0.001	55.31	0.99		0.001	72.75
Semi-Volatile Organic Compounds																															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	4.7		0.033	1	0.23	J	0.033	1	0.095	J	0.033	1	4.1		0.033	10	2.1	J	0.033	10	2.5	J	0.033	10
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	6.4		0.033	1	0.52		0.033	1	0.23		0.033	1	4.9		0.033	10	2.2	J	0.033	10	3.5		0.033	10
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	5.1		0.033	1	0.59		0.033	1	0.26		0.033	1	3.5		0.033	10	2.2	J	0.033	10	2.9		0.033	10
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	7		0.033	1	0.69		0.033	1	0.34		0.033	1	3.9		0.033	10	2.5	J	0.033	10	3.1		0.033	10
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	3.4		0.033	1	0.47		0.033	1	0.23		0.033	1	1.6	J	0.033	10	1.5	J	0.033	10	1.7	J	0.033	10
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	7.1		0.033	1	0.61		0.033	1	0.26		0.033	1	5.6		0.033	10	2.6	J	0.033	10	3.7		0.033	10
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	4.1		0.033	1	0.16	J	0.033	1	0.047	J	0.033	1	4.3		0.033	10	1.7	J	0.033	10	2.2	J	0.033	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	2.8		0.033	1	0.41		0.033	1	0.21	J	0.033	1	1.4	J	0.033	10	1.1	J	0.033	10	1.3	J	0.033	10
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.41	J	0.001	53.76	ND	U	0.001	48.45	0.13	J	0.001	45.87	0.39	J	0.001	53.65	0.71		0.001	55.31	0.66		0.001	72.75
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	11		0.033	1	1.1		0.033	1	0.21	J	0.033	1	18		0.033	10	5.5		0.033	10	8.9		0.033	10
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	15		0.033	5	0.93		0.033	1	0.33		0.033	1	13		0.033	10	5.2		0.033	10	8.5		0.033	10
Metals																															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	264		0.591	1	20.7		0.591	1	28.9		0.591	1	387		0.591	1	443		0.591	1	328		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA				NA				NA				NA				NA			
General Chemistry																															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	34.7		0.5	1	30.3		0.5	1	25.2		0.5	1	38.8		0.5	1	37.1		0.5	1	36.1		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA				NA				NA				NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA				NA				NA				NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

Table 3
Summary of Subsurface Soil Analytical Results
AOI 7 ASTs
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Chemical Name	CAS Number	PADEP Non-Res Subsurface Soil Direct Contact MSC[1]	PADEP Non-Res Soil to GW MSC[2]	PADEP Non-Res Subsurface Soil MSC[3]	EPA Industrial Soil RSL[4]	PADEP Non-Res Surface Soil Direct Contact MSC[5]	Location	GP-270-S-10				GP-270-S-12			
							Sample ID	S-10_10/06/2009				S-12_10/06/2009			
							Sample Date	10/6/2009				10/6/2009			
							Sample Interval (ft)	2-2.5				2-2.5			
							Sample Purpose	Tank Closure				Tank Closure			
							Unit	Result	Q	DL	DF	Result	Q	DL	DF
Volatile Organic Compounds															
1,2,4-Trimethylbenzene	95-63-6	640	35	35	260	560	mg/kg	ND	U	0.001	69.32	0.12	J	0.001	67.54
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	4.3	0.005	0.005	0.17	3.7	mg/kg	NA				NA			
1,2-Dichloroethane	107-06-2	98	0.5	0.5	2.2	86	mg/kg	NA				NA			
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	550	9.3	9.3	10000	480	mg/kg	ND	U	0.001	69.32	ND	U	0.001	67.54
Benzene	71-43-2	330	0.5	0.5	5.4	290	mg/kg	ND	U	0.0005	69.32	0.061	J	0.0005	67.54
Dimethyl Benzene/ Xylenes, Total	1330-20-7	9100	1000	1000	2700	8000	mg/kg	0.25	J	0.001	69.32	0.19	J	0.001	67.54
Ethylbenzene	100-41-4	10000	70	70	27	10000	mg/kg	0.12	J	0.001	69.32	ND	U	0.001	67.54
Isopropylbenzene (Cumene)	98-82-8	10000	2500	2500	11000	10000	mg/kg	ND	U	0.001	69.32	ND	U	0.001	67.54
Tert-Butyl Methyl Ether	1634-04-4	3700	2	2	220	3200	mg/kg	NA				NA			
Toluene	108-88-3	10000	100	100	45000	10000	mg/kg	0.7		0.001	69.32	0.94		0.001	67.54
Semi-Volatile Organic Compounds															
Anthracene	120-12-7	190000	350	350	170000	190000	mg/kg	2	J	0.033	10	0.78	J	0.033	10
Benzo(A)Anthracene	56-55-3	190000	320	320	2.1	110	mg/kg	2.1	J	0.033	10	1	J	0.033	10
Benzo(A)Pyrene	50-32-8	190000	46	46	0.21	11	mg/kg	3.6		0.033	10	1	J	0.033	10
Benzo(B)Fluoranthene	205-99-2	190000	170	170	2.1	110	mg/kg	3.5		0.033	10	1.4	J	0.033	10
Benzo(G,H,I)Perylene	191-24-2	190000	180	180	NS	170000	mg/kg	4.5		0.033	10	0.76	J	0.033	10
Chrysene	218-01-9	190000	230	230	210	11000	mg/kg	2.6		0.033	10	1.1	J	0.033	10
Fluorene	86-73-7	190000	3800	3800	22000	110000	mg/kg	0.96	J	0.033	10	0.62	J	0.033	10
Indeno(1,2,3-C,D)Pyrene	193-39-5	190000	28000	28000	2.1	110	mg/kg	3.5		0.033	10	0.62	J	0.033	10
Naphthalene	91-20-3	190000	25	25	18	56000	mg/kg	0.87		0.001	69.32	0.85		0.001	67.54
Phenanthrene	85-01-8	190000	10000	10000	NS	190000	mg/kg	3.1		0.033	10	2.1	J	0.033	10
Pyrene	129-00-0	190000	2200	2200	17000	84000	mg/kg	2.7		0.033	10	1.9	J	0.033	10
Metals															
Lead	7439-92-1	190000	450	450	800	1000	mg/kg	447		0.591	1	235		0.591	1
Sodium	7440-23-5	NS	NS	NS	NS	NS	mg/kg	NA				NA			
General Chemistry															
Moisture, Percent	MOIST	NS	NS	NS	NS	NS	%	31.8		0.5	1	30.7		0.5	1
Ph	PH	NS	NS	NS	NS	NS	su	NA				NA			
Solids, Percent	SOLID	NS	NS	NS	NS	NS	%	NA				NA			

Notes:

[1] PADEP Non-Residential Direct Contact MSC for subsurface soils (2-15 feet below ground surface) (last updated Jan. 2011).
[2] PADEP Non-Residential Soil to Groundwater MSC for unsaturated soils in a used aquifer with total dissolved solids less than 2500 mg/l (last updated Jan. 2011).
[3] Criteria shown in gray were used to determine the non-residential soil MSCs used to screen the sample results. The lowest, most conservative, value of the soil-to-groundwater or direct contact criteria was used as the value for screening purposes.
[4] EPA Industrial Soil Regional Screening Level (last updated Nov 2012).
[5] PADEP Non-Residential Direct Contact MSC for surface soils (0-2 feet below ground surface) (last updated Jan. 2011).
CAS - Chemical Abstracts Service Registry Number
PADEP - Pennsylvania Department of Environmental Protection
mg/kg - milligram per kilogram
ft - Feet
MSC - Medium Specific Concentration
RL - Lab reporting limit (actual limit may be either the quantification or method detection limit)
ND - Not Detected
DF - Dilution Factor
Q - Lab Qualifier
NS - No Standard
Result screened against PADEP Surface Soil Direct Contact MSC only if the result also exceeds the PADEP Soil MSC and EPA RSL.

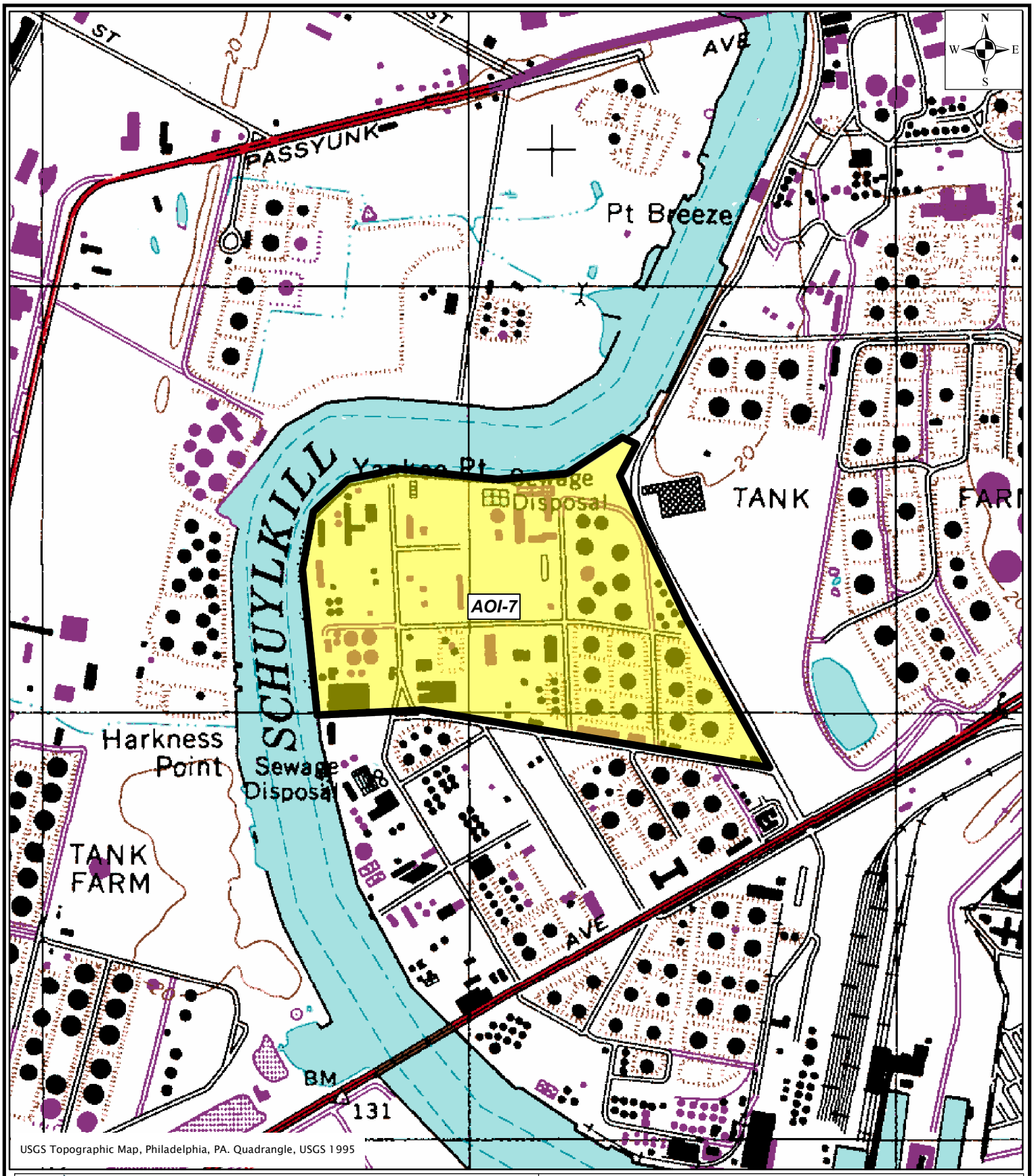
Qualifiers:

U - The analyte was analyzed but not detected above the reporting limit.
J - Compound was detected below the quantification limit and above the method detection limit. The result should be considered estimated.
D - Sample was diluted.

Exceedance Summary:

10 Reported result exceeds the PADEP Non-Residential Soil MSC
10 Reported result exceeds the PADEP Soil MSC and the EPA Industrial Soil RSL
10 Reported result exceeds the PADEP Soil MSC, EPA Industrial Soil RSL, and PADEP Surface Soil Direct Contact MSC
10 RL exceeds the PADEP Non-Residential Soil MSC

FIGURES



USGS Topographic Map, Philadelphia, PA. Quadrangle, USGS 1995

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA. 19145

PHILADELPHIA ENERGY SOLUTIONS

Figure 1: Site Location Map
AOI-7 Supplemental Site Characterization Report
PES Facility

Philadelphia Pennsylvania

Job Number	Scale: 1" = 1,000'	Date
2574601	0 500 1,000 Feet	July 2, 2013

Path: \\langan.com\data\DT\data6\2574601\ArcGIS\MapDocuments\AOI 7 Repackaged SCR\Figure 1- Site Location Map_7-2-13.mxd

N
W E
S

Legend

- 271 Tank Closed in Place
- 270 Tank With Release Assessment
- Sheet Pile Wall
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.

Figure 2: Site Plan
AOI 7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 150 300 Feet

SCALE: 1" = 150'
DATE: September 3, 2013
DRN. BY: MK
CKD. BY: PT
JOB# 2574601

Q:\Data\2574601\ArcGIS\MapDocuments\AOI 6 Site Characterization\Figure 8 Summary of Non SWMUs Soil Sample Exceedances.mxd

N
W E
S

Legend

- Monitoring Wells in AA-AA' Cross Section
- Monitoring Wells in BB-BB' Cross Section
- Monitoring Wells in CC-CC' Cross Section
- Monitoring Wells in Z-Z' Cross Section
- Deep Monitoring Wells
- Shallow Monitoring Wells
- Shallow Piezometer
- Shallow Recovery Well
- Monitoring Well Abandoned/Damaged/ Unable to Locate
- AA — AA' AOI-7 AA-AA' Cross Section Location
- BB — BB' AOI-7 BB-BB' Cross Section Location
- CC — CC' AOI-7 CC-CC' Cross Section Location
- Z — Z' AOI-7 Z-Z' Cross Section Location
- Sheet Pile Wall
- AOIs

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. A-A' from Aquaterra Technologies, Supplemental Subsurface Evaluation: Jackson Street Sewer-North Yard, 2002.
3. B-B' from GES, Inc., Remedial Action Plan North Yard Southern Property Boundary (PGW Border), 1993
4. F-F' from ENSR, Investigation of Shallow and Deep Groundwater Quality, Philadelphia Refinery, 1994 (Location is approximate)
5. J-J' from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery,1992
6. C-J' from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery, 1992
7. C-K from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery, 1992
8. C-L from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery, 1992
9. C-M from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery, 1992
10. N-C-J' from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery, 1992
11. C-J from Dames and Moore, RCRA Verification Investigation Report, Chevron Refinery, 1992

Figure 3: Cross Section Location Plan
AOI-7 Supplemental Site
Characterization Report
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA.
19145

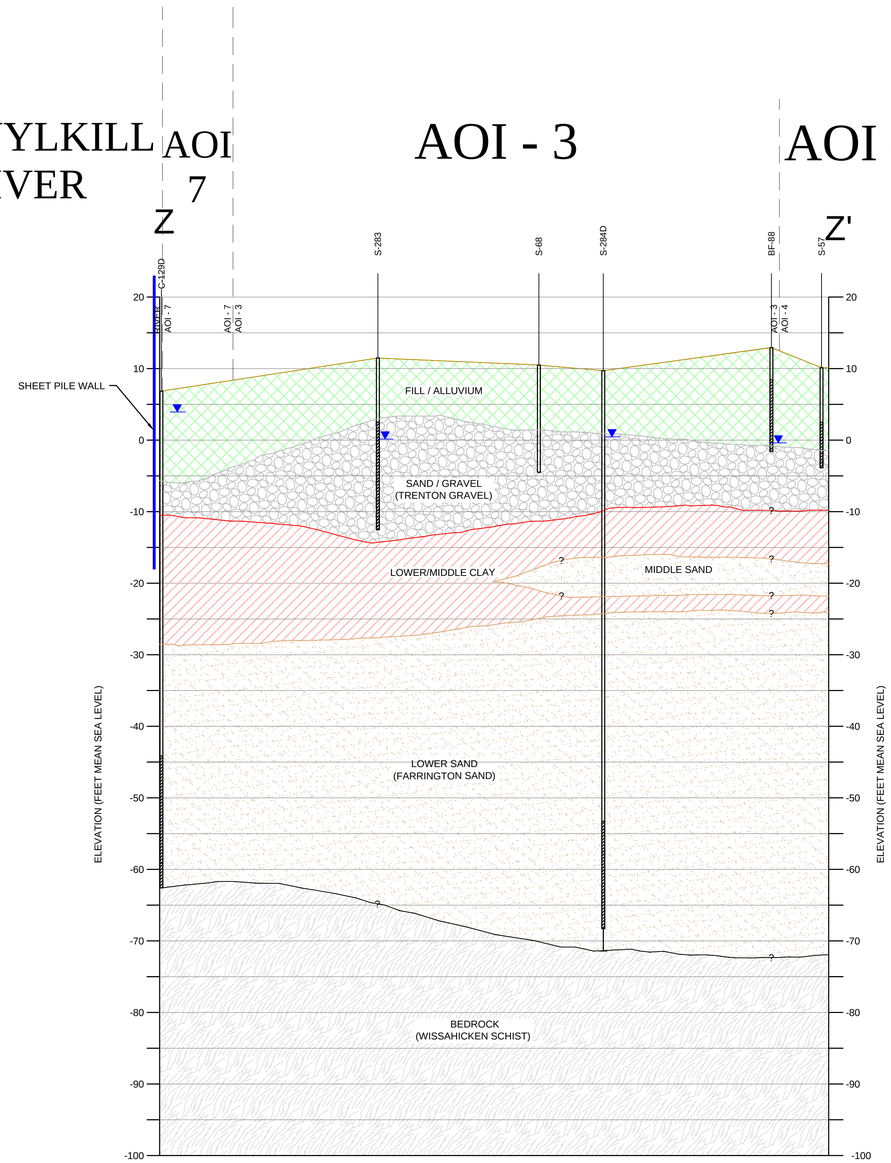
0 100 200 400 Feet

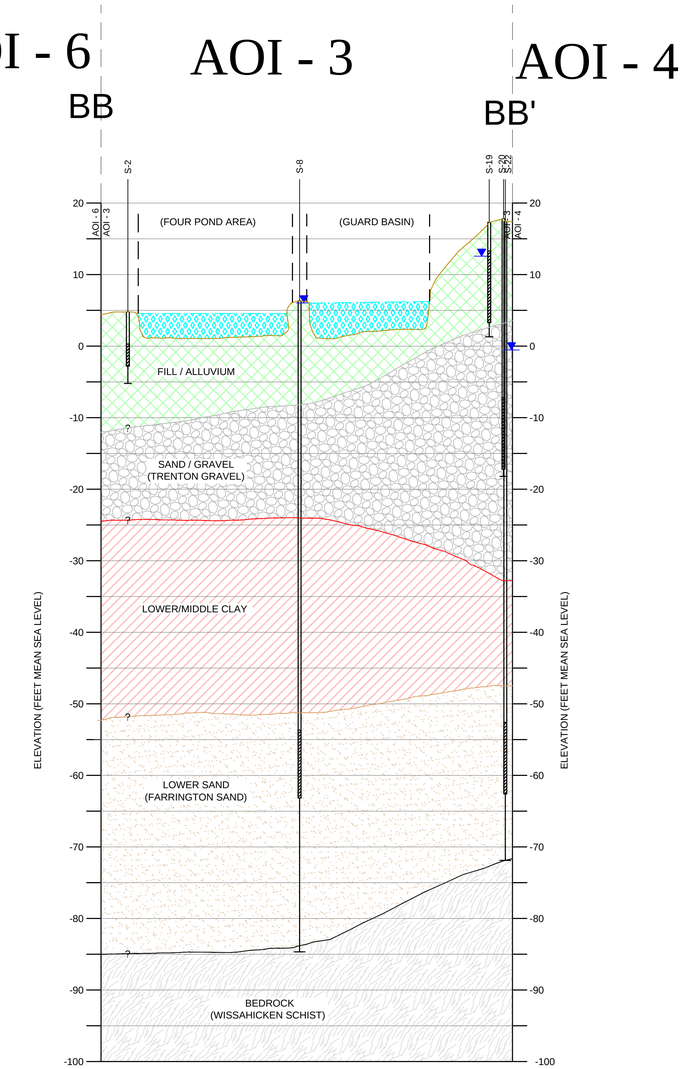
SCALE: 1" = 200'
DATE: September 3, 2013
DRN. BY: MK
CKD. BY: DW
JOB#: 2574601

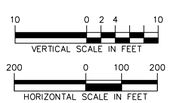
NOTES:
1. LITHOLOGY BASED ON INTERPOLATION FROM AVAILABLE NEW AND HISTORIC WELL / SOIL BORING LOGS.
2. WELL SCREEN INTERVAL INFORMATION NOT AVAILABLE FOR S-2 AND S-68
3. DEPTH OF SHEET PILE WAS DETERMINED FROM FIGURE 2-8 GENERALIZED GEOLOGICAL CROSS SECTION A-C DATED NOVEMBER 13, 1992 FROM DAMES AND MOORE, RCRA VERIFICATION INVESTIGATION REPORT, CHEVERON REFINERY, 1992, CROSS SECTION RENAMED C-J IN CCR.
4. GROUNDWATER ELEVATIONS COLLECTED IN JULY 2010.

LEGEND:

- WATER
- FILL / ALLUVIUM
- TRENTON GRAVEL
- CLAY
- SAND
- WEATHERED BEDROCK
- C-129D LOCATION ID
- WELL CASING/BOREHOLE
- WELL SCREEN
- BOTTOM OF BOREHOLE
- INFERRED CONTACTS
- GROUNDWATER LEVEL
- SHEET PILE WALL







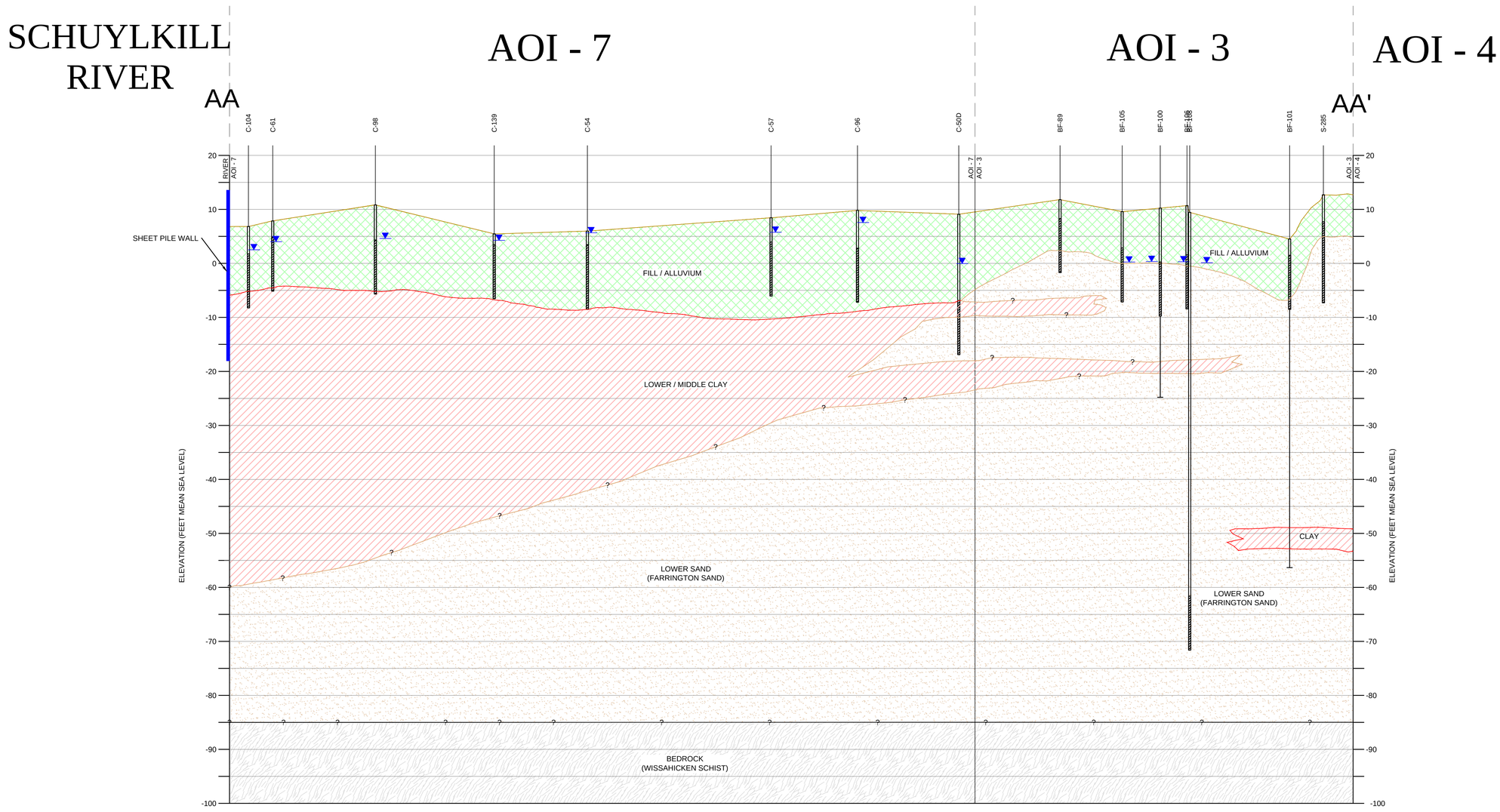
SUNOCO / PHILADELPHIA ENERGY SOLUTIONS	Project: SUNOCO PHILADELPHIA REFINERY — PHILADELPHIA COUNTY, PENNSYLVANIA	Drawing Title: GEOLOGIC CROSS SECTION Z-Z' & GEOLOGIC CROSS SECTION BB-BB'	Project No. 2574601
			Date 7/2/2013
			Scale 1" = 200' HOR. 1" = 10' VER.
			Drn. By SMH
			Last Revised X
			Figure No. 4A

Filename: \\langan.com\data\DT\data6\2574601\Cadd Data - 2574601\Dwg\Geologic Cross-Sections\AOI 7\Figure 4A - Cross-Section Z-Z'_7-2-13.dwg Date: 7/2/2013 Time: 16:21 User: mmking Style Table: Langan.stb Layout: 4A

NOTES:
1. LITHOLOGY BASED ON INTERPOLATION FROM AVAILABLE NEW AND HISTORIC WELL / SOIL BORING LOGS.
2. DEPTH OF SHEET PILE WAS DETERMINED FROM FIGURE 2-8 GENERALIZED GEOLOGICAL CROSS SECTION A-C DATED NOVEMBER 13, 1992 FROM DAMES AND MOORE, RCRA VERIIFICATION INVESTIGATION REPORT, CHEVERON REFINERY, 1992, CROSS SECTION RENAMED C-J IN CCR
3. GROUNDWATER ELEVATIONS COLLECTED IN JULY 2010.
4. THICKNESS OF LOWER / MIDDLE CLAY IN AOI-7 IS ESTIMATED FROM DEEP MONITORING WELLS C-144D, C-134D, AND C-50D.

LEGEND:

- FILL / ALLUVIUM
- SAND / GRAVEL (TRENTON GRAVEL)
- CLAY
- SAND
- BEDROCK (WISSAHICKON SCHIST)
- C-129D LOCATION ID
- WELL CASING/BOREHOLE
- WELL SCREEN
- BOTTOM OF BOREHOLE
- INFERRED CONTACTS
- GROUNDWATER LEVEL
- SHEET PILE WALL



10 0 2 4 10
VERTICAL SCALE IN FEET

200 0 100 200
HORIZONTAL SCALE IN FEET

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Project: SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA COUNTY PENNSYLVANIA

Drawing Title: GEOLOGIC CROSS SECTION AA-AA'

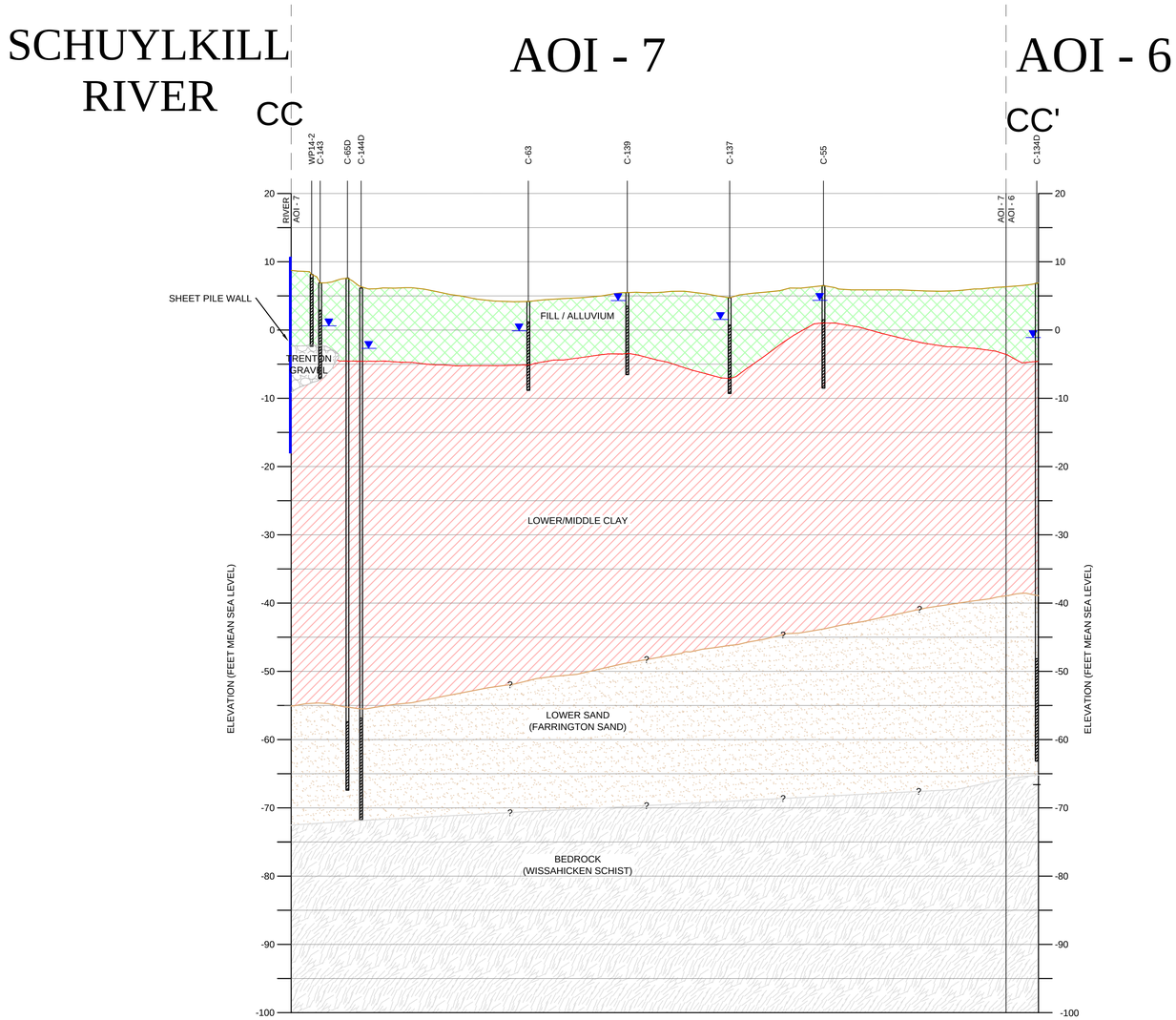
Project No.	2574601
Date	7/2/2013
Scale	1" = 200' HOR. 1" = 10' VER.
Drn. By	SMH
Last Revised	X
Figure No.	4B
	Of

Filename: \\langan.com\data\DT\data6\2574601\Cadd Data - 2574601\Dwg\Geologic Cross-Sections\AOI 7\Figure 4B - Cross-Section AA-AA'_7-2-13.dwg Date: 7/2/2013 Time: 16:21 User: mmking Style Table: Langan.stb Layout: 4B

NOTES:
1. LITHOLOGY BASED ON INTERPOLATION FROM AVAILABLE NEW AND HISTORIC WELL / SOIL BORING LOGS.
2. DEPTH OF SHEET PILE WAS DETERMINED FROM FIGURE 2-8 GENERALIZED GEOLOGICAL CROSS SECTION A-C DATED NOVEMBER 13, 1992 FROM DAMES AND MOORE, RCRA VERIIFICATION INVESTIGATION REPORT, CHEVERON REFINERY, 1992, CROSS SECTION RENAMED C-J IN CCR
3. GROUNDWATER ELEVATIONS COLLECTED IN JULY 2010.

LEGEND:

- FILL / ALLUVIUM
- SAND / GRAVEL (TRENTON GRAVEL)
- CLAY
- SAND
- WEATHERED BEDROCK (WISSAHICKON SCHIST)
- C-129D LOCATION ID
- WELL CASING/BOREHOLE
- WELL SCREEN
- BOTTOM OF BOREHOLE
- INFERRED CONTACTS
- GROUNDWATER LEVEL
- SHEET PILE WALL



10 0 2 4 10
VERTICAL SCALE IN FEET

200 0 100 200
HORIZONTAL SCALE IN FEET

SUNOCO / PHILADELPHIA ENERGY SOLUTIONS	Project: SUNOCO PHILADELPHIA REFINERY — PHILADELPHIA COUNTY, PENNSYLVANIA	Drawing Title: GEOLOGIC CROSS SECTION CC-CC'	Project No. 2574601
			Date 7/2/2013
			Scale 1" = 200' HOR. 1" = 10' VER.
			Drn. By SMH
			Last Revised X
			Figure No. 4C
			Of

Filename: \\langan.com\data\DT\data6\2574601\Cadd Data - 2574601\Dwg\Geologic Cross-Sections\AOI 7\Figure 4C - Cross-Section CC-CC'_7-2-13.dwg Date: 7/2/2013 Time: 16:33 User: mmking Style Table: Langan.stb Layout: 4C

N
W E
S

Legend

- Shallow Monitoring Well and Groundwater Elevation (ft.)
- Shallow Recovery Well and Groundwater Elevation (ft.)
- Deep Monitoring Wells
- Shallow Piezometer
- Monitoring Well Abandoned/Damaged/Unable to Locate
- Shallow Monitoring Well and Groundwater Elevation (ft. amsl)
- Shallow/Intermediate Monitoring Well and Groundwater Elevation (ft. amsl)
- Shallow/Intermediate Monitoring Well With No Exceedance of PADEP Non-Res Groundwater MSCs
- Shallow/Intermediate Monitoring Wells With Exceedance of PADEP Non-Res Groundwater MSCs
- 4 — Groundwater Contour (ft. amsl)
- 7 — Groundwater Contour Depression (ft. amsl)
- Bulkhead
- 271 — Tank Closed in Place
- 270 — Tank With Release Assessment
- Solid Waste Management Unit (SWMU)
- Area of Interest (AOI) Boundary

LNAPL Types

- Lube Oil
- Middle Distillate
- Residual Oil

B-167 *VOCs in ug/L* Benzene - 89 — **Well ID** *Type of Exceedance* Exceedance - Exceedance Value

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. Groundwater elevations based on groundwater gauging data provided by Aquaterra, January 2012.

Figure 5 - Shallow/Intermediate Groundwater Elevation Contour Plan - January 2012
AOI-7 Supplimental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 70 140 280 Feet

SCALE: 1" = 140'
DATE: September 3, 2013
DRN. BY: MH
CKD. BY: DW
JOB#: 2574601

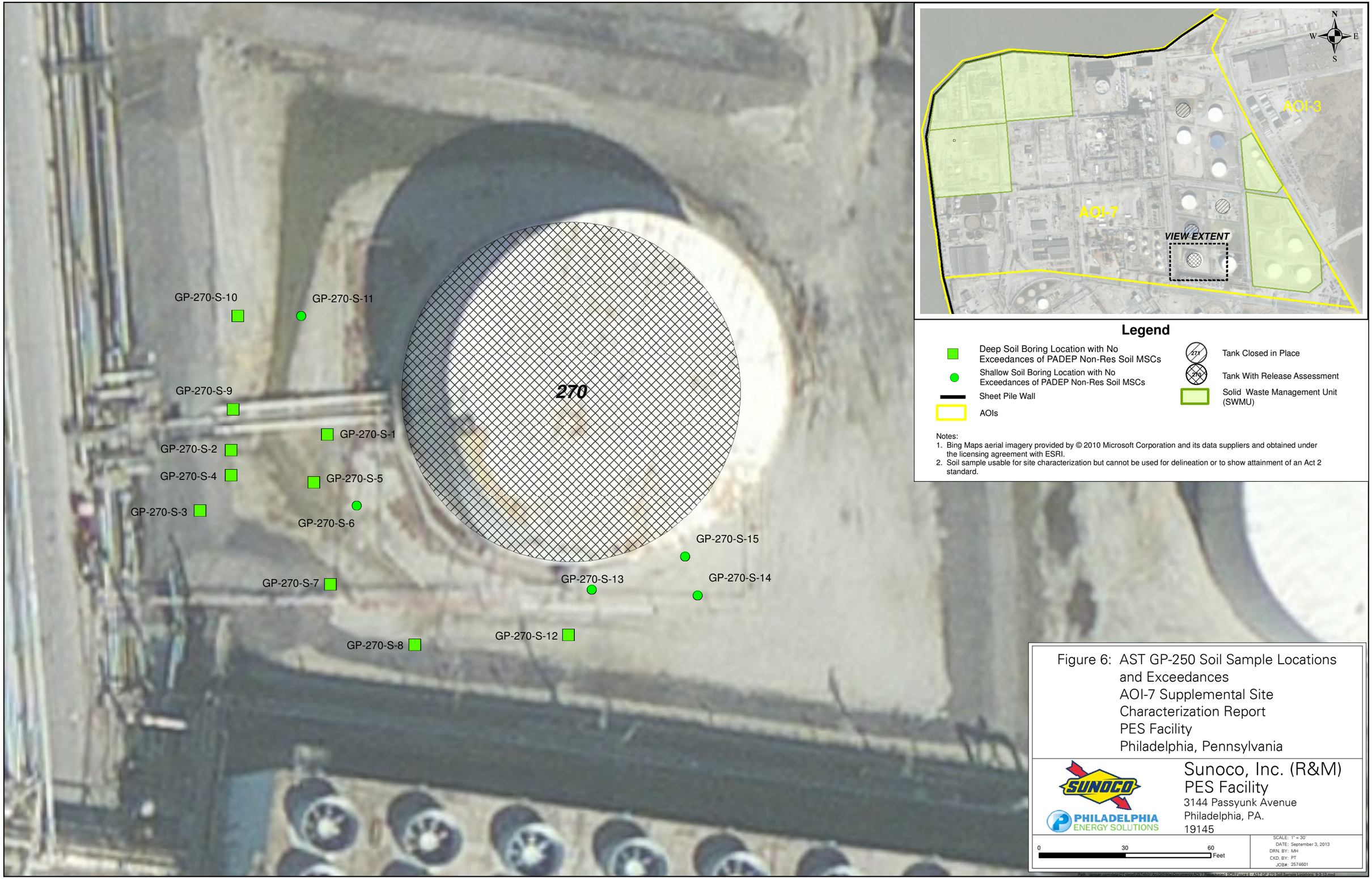
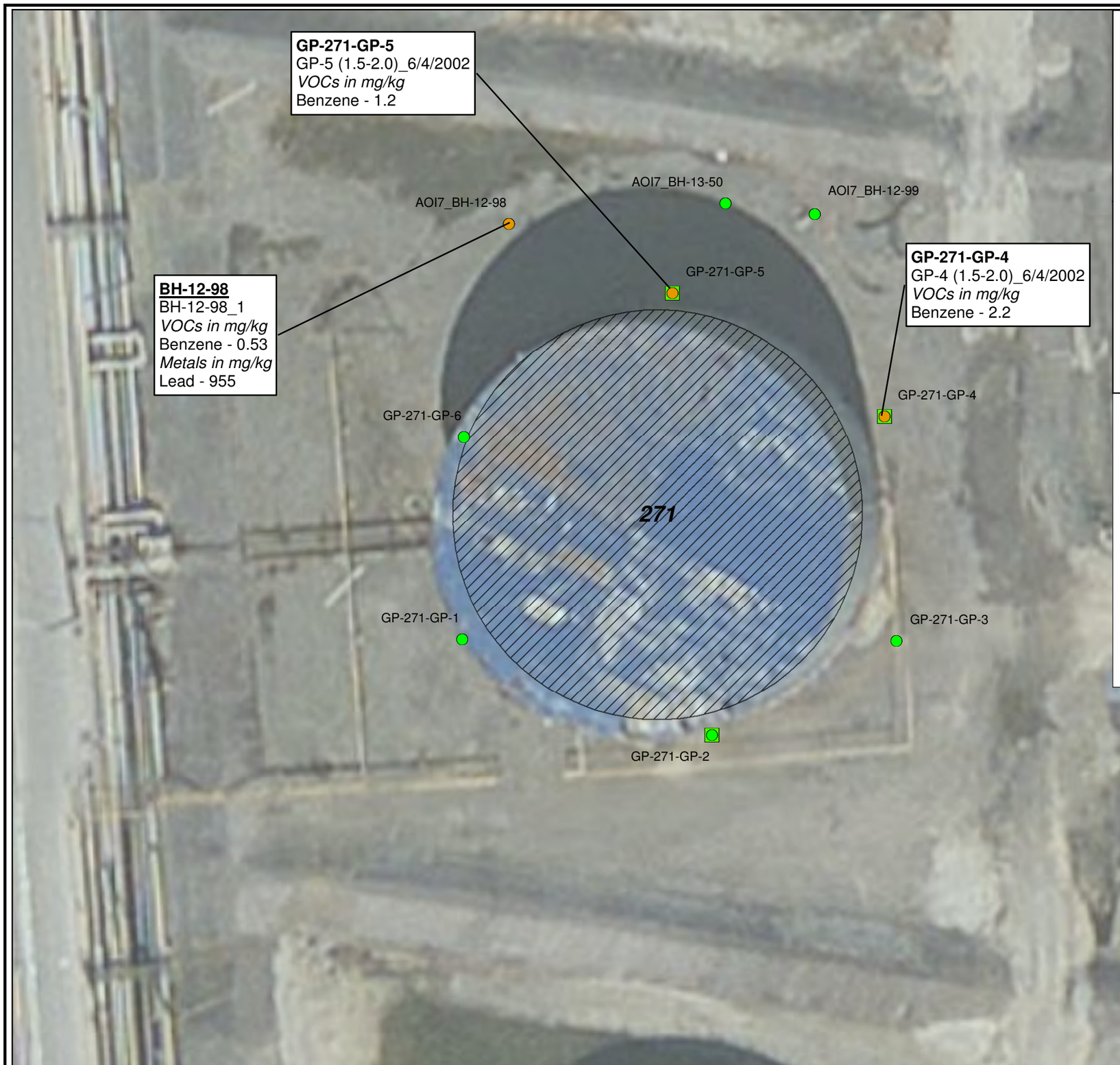
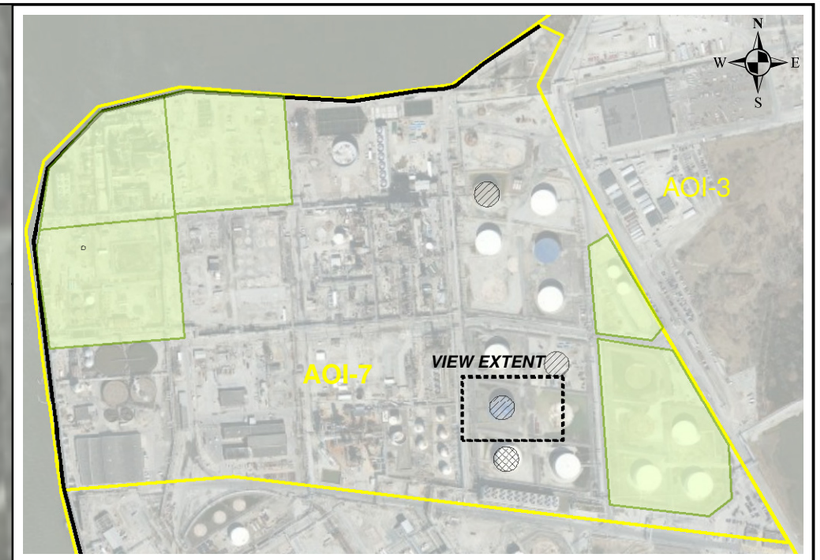


Figure 6: AST GP-250 Soil Sample Locations and Exceedances
AOI-7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145





Legend

- Deep Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Shallow Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Shallow Soil Boring Location with Exceedance of PADEP Non-Res Soil MSCs
- Sheet Pile Wall
- AOIs
- Tank Closed in Place
- Tank With Release Assessment
- Solid Waste Management Unit (SWMU)

GP-271-GP-4 GP-4 (1.5-2.0)_6/4/2002 *VOCs in mg/kg* Benzene - 2.2	**Well ID** System Sample Name *Type of Exceedance* Exceedance - Exceedance Value

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. Soil sample usable for site characterization but cannot be used for delineation or to show attainment of an Act 2 standard.

Figure 7: AST GP-271 Soil Sample Locations and Exceedances
AOI-7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

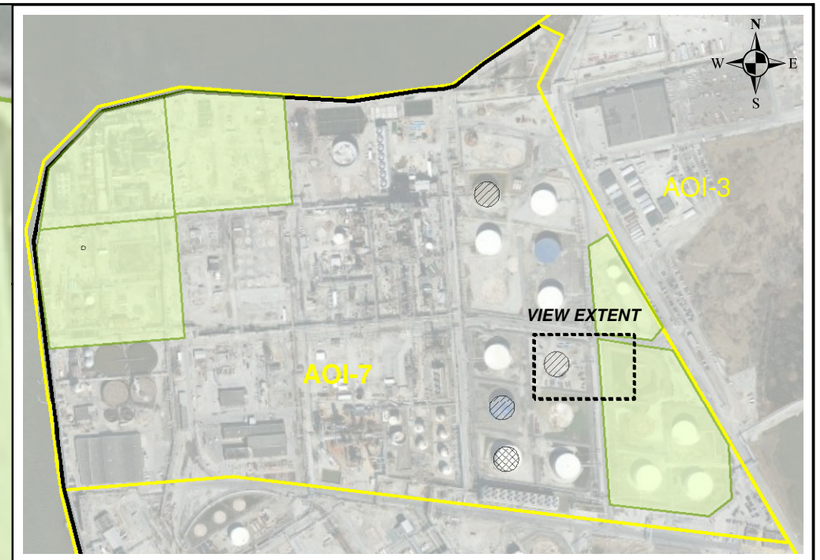
SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 30 60 Feet

SCALE: 1" = 30'
DATE: September 3, 2013
DRN. BY: MH
CKD. BY: PT
JOB#: 2574601

Path: \\scoan.com\data\DT\data\2574601\ArcGIS\MxDocuments\AOI 7 Repackaged SCR\Figure 7 - AST GP 271 Soil Sample Locations_9-3-13.mxd



Legend

- Deep Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Shallow Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Sheet Pile Wall
- AOIs
- Tank Closed in Place
- Tank With Release Assessment
- Solid Waste Management Unit (SWMU)

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. Soil sample usable for site characterization but cannot be used for delineation or to show attainment of an Act 2 standard.

Figure 8: AST GP-275 Soil Sample Locations and Exceedances
AOI-7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

SUNOCO
PHILADELPHIA ENERGY SOLUTIONS

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 30 60 Feet

SCALE: 1" = 30'
DATE: September 3, 2013
DRN. BY: MH
CKD. BY: PT
JOB#: 2574601

Path: \\langan.com\data\PT\data\2574601\ArcGIS\MapDocuments\AOI 7 Repackaged SCR\Figure 8 - AST GP 275 Soil Sample Locations_9-3-13.mxd

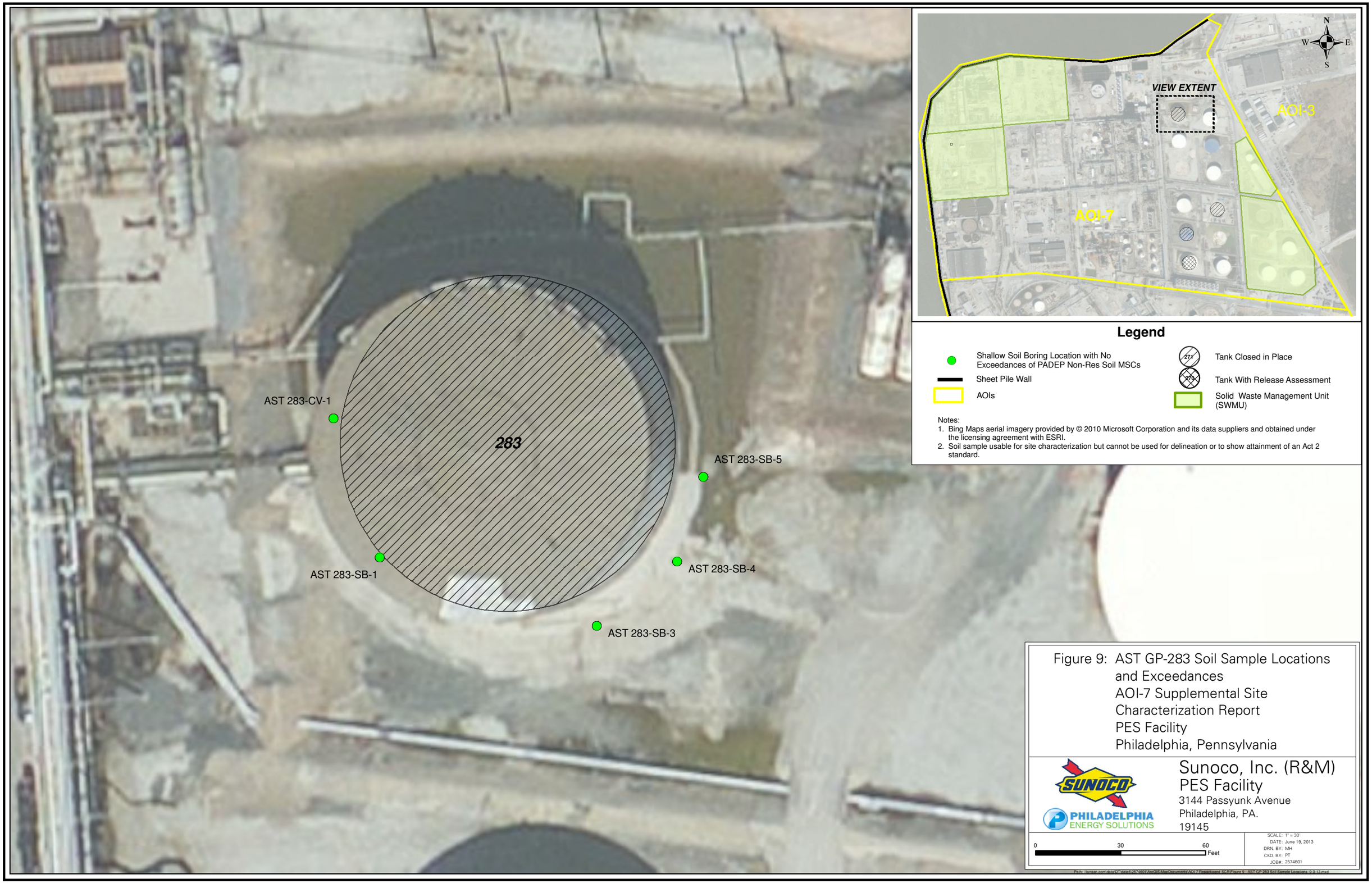
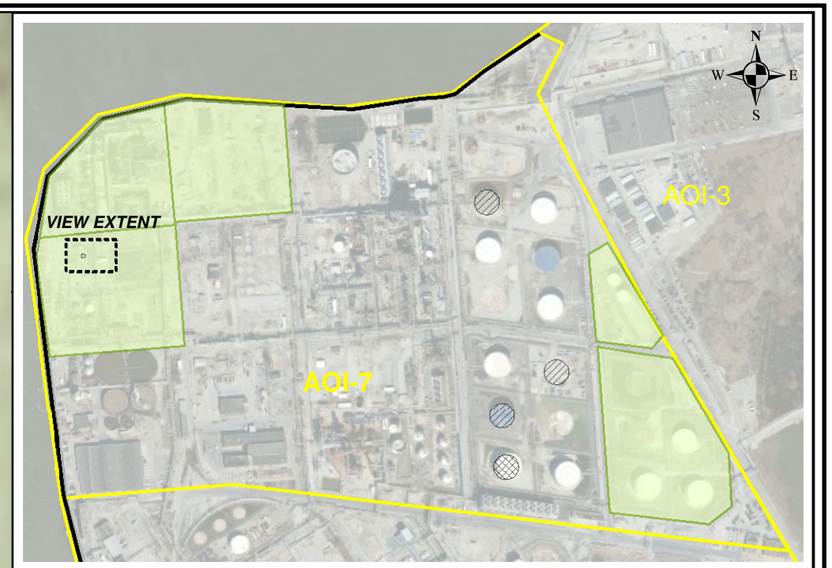


Figure 9: AST GP-283 Soil Sample Locations and Exceedances
AOI-7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania



Legend

- Deep Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Shallow Soil Boring Location with No Exceedances of PADEP Non-Res Soil MSCs
- Sheet Pile Wall
- AOIs
- Tank Closed in Place
- Tank With Release Assessment
- Solid Waste Management Unit (SWMU)

Notes:
1. Bing Maps aerial imagery provided by © 2010 Microsoft Corporation and its data suppliers and obtained under the licensing agreement with ESRI.
2. Soil sample usable for site characterization but cannot be used for delineation or to show attainment of an Act 2 standard.

Figure 10: AST LO-1000 Soil Sample Locations and Exceedances
AOI-7 Supplemental Site Characterization Report
PES Facility
Philadelphia, Pennsylvania

Sunoco, Inc. (R&M)
PES Facility
3144 Passyunk Avenue
Philadelphia, PA.
19145

0 15 30 Feet

SCALE: 1" = 30'
DATE: September 3, 2013
DRN. BY: MH
CKD. BY: PT
JOB#: 2574601

Path: \\langan.com\data\PT\data\62574601\ArcGIS\MapDocuments\AOI 7 Repackaged SCR\Figure 10 - AST LO 1000 Soil Sample Locations_9-3-131.mxd

GENERAL CORRESPONDENCE

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
February 26, 2008

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

RECEIVED
FEB 29 2008
By SB

Mr. Scott A. Baker, P.E.
Sunoco, Inc.
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-36558 & 51-19781
Sunoco Girard Point & Point Breeze Facilities
3144 Passyunk Avenue
Philadelphia County

Dear Mr. Baker:

Over the past few years, we have received documents from you that mention how Sunoco considers certain regulated storage tank release incidents to be covered by the 2003 Consent Order & Agreement (CO&A) between the Department and Sunoco, Inc. The purpose of this letter is to clarify for you which release incidents at the two above-mentioned facilities are covered under the 2003 CO&A. Paragraph 8 of the CO&A states that release incidents associated with a closure or change-in-service of an aboveground storage tank (AST) are covered by the CO&A. Thus, incidents not involving a tank closure or change-in-service are not covered.

All incidents occurring at these two facilities in the past few years (since we have been actively tracking regulated storage tank releases) are listed in the two tables below. There are multiple incidents that have occurred at these two facilities prior to our tracking of releases, which are not listed in the tables below and were not adequately addressed. Please be sure to address those releases incidents as well in accordance with either the CO&A or the corrective action process detailed in the storage tank regulations (25 Pa. Code Chapter 245 Subchapter D).

Please note that the CO&A does state that corrective actions required by Chapter 245 Sections 304, 305, 306, and 307 must still be completed for any AST closure and change-in-service.

Release incidents covered by 2003 CO&A

Facility	Sunoco Tank No.	PADEP Tank No.	Confirmed Release Date
Girard Point	1002	139A	4-7-06
Girard Point	1100	140A	5-31-06
Girard Point	277	039A	6-25-07
Girard Point	1208	025A	6-28-07
Point Breeze	119	024A	4-7-06
Point Breeze	182	048A	5-31-06
Point Breeze	181	047A	6-22-07
Point Breeze	848	116A	6-25-07
Point Breeze	252	055A	6-28-07

Release incidents NOT covered by 2003 CO&A

Facility	Sunoco Tank No.	PADEP Tank No.	Confirmed Release Date
Girard Point	250	030A	1-27-07
Girard Point	T-201	175A	12-10-07
Girard Point	1088	089A	12-31-07
Point Breeze	881	120A	9-3-05
Point Breeze	140	031A	9-15-05
Point Breeze	847	115A	9-3-06
Point Breeze	885	124A	10-15-06

The Department realizes that several corrective action reports have been submitted for some of the above-listed incidents which are not covered by the CO&A. We will issue a response for those reports. All incidents covered by the CO&A will be "administratively closed out" on our eFACTS database with a comment stating that the release will be addressed under the CO&A.

This letter is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Heidi J. Kunsch
Water Quality Specialist
Environmental Cleanup

cc: Philadelphia Health Department
Mr. Higgins, Philadelphia L&I
Mr. Stan Sneath, PADEP
Mr. Steve O'Neil, PADEP
Mr. Ayman Ghobrial, PADEP
Re

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
June 9, 2006

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

NOTICE OF VIOLATION

RECEIVED
JUN 12 2006
By RR

Mr. Ron Rosendorn
Sunoco Inc., R & M
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-36558 (140A)
Girard Point Processing Area
City of Philadelphia
Philadelphia County

Dear Mr. Rosendorn:

On May 31, 2006, a reportable release of recovered oil/fuel oil was confirmed at your above-named facility. This release constitutes a violation of Section 1310 of the Pennsylvania Storage Tank and Spill Prevention Act. Our purpose in sending you this notice is to advise you of your regulatory responsibility and to provide guidance and details to help you address this release quickly and effectively under the Department's corrective action regulations (Title 25, Chapter 245, subchapter D).

In order to ensure the release is addressed in a prompt and appropriate manner, you should provide a progress report to this office no later than August 29, 2006. A copy is enclosed for your use. Your site characterization report is due November 27, 2006. No extension of the site characterization report due date will be provided without prior written approval from the Department. All requests for deadline extensions shall include a reasonable alternate due date and be submitted to the Department in writing.

Please note that we intend to initiate a compliance action if you fail to comply with the regulations. We encourage you to proceed without delay to hire a qualified environmental consulting firm that has a Registered Professional Geologist on staff that can assist you in accomplishing the requirements outlined below.

1. INTERIM REMEDIAL ACTIONS

Effective interim actions may resolve a problem or reduce the severity of a problem making site cleanup easier and less expensive. Some typical interim actions are listed on the attached *90 Day Site Characterization Status Report* form.

If your release does affect or diminish a private or public water supply, you must provide a temporary water supply for affected users within 48 hours. Within 90 days, a permanent water supply must be in place. Treatment to remove or prevent contamination of a public water supply may require a permit from the Department. We recommend that you contact the regional Water Supply Management Program (WSM) at 484-250-5980 prior to any planned treatment installations on a public source. If you are unsure if a well is classified as a public water source, WSM can advise you.

The regulations require that within 15 days of the release you provide written notification of the release to the municipality where the release occurred and to each municipality that has been impacted. We recommend that you establish an open dialogue to insure the appropriate municipal officials remain informed of site activities.

2. CORRECTIVE ACTION ACTIVITIES AND REPORTS

After a release has been confirmed, other corrective actions are required in addition to the interim remedial actions listed on the *90 Day Site Characterization Status Report* form. Some of these requirements include fieldwork and report submission under the site characterization (which is required to identify your chosen cleanup standard), remedial action, and the remedial action completion report phases. In addition, the regulations specify time frames for conducting this work that must be followed.

If, in addition to your current release, you have had releases in the past, we request that these historic releases also be addressed in your current reports. If the past releases have been successfully remediated they should still be discussed in the narrative section of your site characterization report.

To discharge any treated groundwater you must have a General Permit (GP-5, Discharges from Petroleum Product Contaminated Groundwater Remediation Systems). Questions concerning General Permit approvals should be directed to our Water Management Program at 484-250-5970.

3. DOCUMENTS

Many of the documents mentioned in this letter can be found on the Department's website (www.depweb.state.pa.us) or by contacting our Regional Office at 484-250-5960.

Please feel free to contact Mr. Walter Payne by calling 484-250-5960 with any questions related to this letter. All reports referenced in this letter are to be submitted to:

Kathy Nagle, Storage Tank Section
PA DEP Southeast Region
2 E. Main Street
Norristown, PA 19401

This Notice of Violation is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Kathy J. Nagle
Chief, Storage Tank Section
Environmental Cleanup

Enclosure

cc: Philadelphia County Health Department
Mr. John Higgins, Philadelphia L & I
Mr. Kevin Gallagher
Mr. Walter Payne
Re 30

****PLEASE DO NOT FAX THIS REPORT****

90 DAY SITE CHARACTERIZATION STATUS REPORT

Facility ID Number: Report Date:

Facility Name:

Facility Address:

Facility Contact Name: Phone #:

Municipality: County:

Release Date:

Date Municipality Notified: _____ (if a written communication, please attach a copy)

ACTIVITIES (Check the appropriate box: 1 = finished; 2 = on-going; 3 = planned; N/A = not applicable):

1	2	3	N/A	
☐	☐	☐	☐	Identify & mitigate fire, explosion & safety hazards posed by vapor & free product
☐	☐	☐	☐	Identify & sample affected or potentially impacted public and private water supplies & water
☐	☐	☐	☐	Supply sample results to water supply owner(s) and DEP
☐	☐	☐	☐	Provide temporary water supply to replace affected or diminished supplies
☐	☐	☐	☐	Identify sensitive receptors including, but not limited to, basements and utility conduits
☐	☐	☐	☐	Determine or confirm source(s) of contamination
☐	☐	☐	☐	Remove regulated substance from tank system
☐	☐	☐	☐	Recover free product
☐	☐	☐	☐	Remove impacted soil as appropriate
☐	☐	☐	☐	Other (specify: _____

Describe any additional activities (accomplished and planned) performed towards completion of your site characterization report, including potential problems and significant findings:

NOTE: If you are actively working on your characterization and an extension of time beyond the 180 day report due date is needed, please contact the DEP project officer assigned to the case to discuss the situation.

Submitted by: Date Submitted:

Company Name: Phone Number:

Address:

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

January 29, 2003

RECEIVED
JAN 31 2003
By

Southeast Regional Office

Phone: 610-832-5950
Fax: 610-832-6143

Mr. Jim Tucker
Sunoco, Inc. (R&M)
3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Re: Storage Tank Program
Girard Point Processing Area AST 271
Facility ID No. 51-36558
Philadelphia Refinery
City of Philadelphia
Philadelphia County

Dear Mr. Tucker:

On December 27, 2002 we received your report entitled "Site Characterization Report", dated December 20, 2002, for the storage tank facility referenced above. We consider this submittal to be the Site Characterization Report required by the Corrective Action Process regulations, 25 Pa. Code Section 245.310.

You have identified your selected cleanup standard as the Site Specific Standard. As such, the Department will review attempt to this report within 90 days of its receipt and send a review letter to the facility owner.

If your submission did not include a remedial action plan, please be aware that it is your responsibility to determine whether remedial action is necessary to ensure that this facility meets a Department cleanup standard for soil and groundwater. If your site characterization report indicates that remediation is necessary, you are required to submit a remedial action plan to the Department. This plan must meet the requirements of Section 245.311 of the regulations. The plan due date, which is determined by your selected cleanup standard, is identified in Section 245.311(a).

If you have any questions concerning the requirements of the Corrective Action Process Regulations, please contact me at 610-832-5968.

Sincerely,

Stephan B. Sinding
Chief, Storage Tank Section
Environmental Cleanup

cc: Philadelphia County Health Department
City of Philadelphia
Mr. Baggett, SECOR
Mr. Ghobrial
Re 30 (RW03ECP)029.3

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
March 5, 2003

Southeast Regional Office

610-832-5949
Fax 610-832-6143

Mr. Jim Tucker
Senior Staff
Sun Co. Refining
Point Breeze Refinery
3144 Passyunk Avenue
Philadelphia, PA

Re: ECP - Tanks Program
Sunoco Point Breeze Refinery
AST #271 Site Characterization
Facility ID # 51-36558
e-FACTS Site # 456930
3144 Passyunk Avenue
City of Philadelphia

GP

Dear Mr. Tucker:

The Pennsylvania Department of Environmental Protection (DEP), has received and reviewed the Site Characterization Report, dated December 20, 2002, for the site referenced above. SECOR International Corporation (SECOR), environmental consultant for Sun Oil Company, submitted this Site Characterization Report to the DEP on December 27, 2002. Investigations at this site were initiated in conjunction with the closure of Tank #271 on May 16, 2002. This Above Ground Storage Tank (AST) was approximately 118 feet in diameter and was capable of containing 3,360,000 gallons. The tank was used to store crude oil.

SECOR investigated soil conditions surrounding the AST by sampling at six locations in the immediate vicinity of the AST on June 4, 2002. Analytical results for these surficial soil samples, collected at a 0-2 foot depth, exceed the Benzene Act 2 soil to groundwater pathway standard for non-residential used aquifers in boring GP-4 and GP-5. The results of this soil investigation were provided to the DEP. Sunoco submitted a notification of release on June 26, 2002 and received a Notice of Violation on July 31, 2002 requesting further characterization of soil and groundwater.

Subsequent site characterization activities were initiated on September 17, 2002. These additional investigations involved collecting two samples for SPLP analysis (GP-4 & GP-5) and one additional soil sample (GP-5 at 3.5 to 4.0' below grade) to provide vertical delineation. Soil samples collected at GP-4 failed the SPLP analysis for Benzene and the deep sample at GP-5 was non-detect for Benzene. No groundwater samples were collected. Relative groundwater elevations for the six borings

were noted in the text. Since wells were not installed, the borings were not surveyed to a common datum, therefore groundwater gradient across this site cannot be determined. Conditions at this site confirm Benzene contamination at boring GP-4 and GP-5. DEP offers the following comments :

1) The lateral extent of the impacted soil has not been delineated as described in §245.309 & §245.310 of the Department's regulations.

2) The lateral extent of the impacted groundwater has not been delineated as described in §245.309 & 310 of the Department's regulations.

3) Please provide a map showing the location and description of currently operating recovery systems that would intercept and/or recover any plume of contamination in this area.

4) Please provide a risk assessment demonstrating that potentially open exposure pathways associated with soil and groundwater conditions at this site are in compliance with our Act 2 Acceptable Risk Ranges. Interim Remedial Actions should be implemented if conditions are outside acceptable risk ranges.

5) Please provide any additional data that may be pertinent to the distribution of contaminants in groundwater associated with this site from other sources in the vicinity of tank 271. What engineering performance standards for soil were considered in the construction of the tank dike ?

At this time, the Site Characterization Report is determined to be incomplete due to the limited soil data available and the need to further evaluate soils and groundwater.

The closure of this regulated AST should follow the Corrective Action Procedures specified in Department regulations. A final demonstration of attainment must comply with our Act 2 Regulations (see §250). References to the USEPA Environmental Indicators Program do not supersede the requirements of the Pennsylvania Statutes referenced above.

DEP looks forward to receiving and reviewing a complete site characterization report that considers the comments offered in this letter. Please provide a schedule of events planned for this site that will move the Site Characterization closer to completion. Please prepare and submit Act 2 Demonstration of Attainment Reports for soil and groundwater at this site considering the comments offered above.

If you have any questions or need further information regarding this matter, please contact the Environmental Cleanup Program.

Sincerely,

Walter J. Payne, P.G.
Licensed Geological Professional
Environmental Cleanup Program

cc: Mr. Beitler
Mr. O'Neil
Mr. Day-Lewis
Mr. Sinding
Mr. Burke
Mr. S. Brown
Mr. Mountain
Mr. Swokal
Mr. Sneath, Esq.
Mr. Gotthold
Mr. Opppenheim
Mr. Zipin
Regional File

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Environmental Cleanup Program

2 East Main Street
Norristown, PA 19401

Date: 05/12/2004

Time: 1156 hours

Number of pages including cover sheet: 1

To: Sergio Morescalchi
SECOR International Incorporated

Phone: 484-875-3075
Fax phone: 484-875-9286
CC:

From: Stephan Brown
Water Quality Specialist

Stephan Brown

Phone: 484-250-5712
Fax phone: 484-250-5961

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please comment

This is in regard to the facsimile and emails you sent to the Department on May 3, 2004 for Tank 045A (Sunoco Tank number 283). The tank is scheduled to be closed-in-place in the near future. Based on the information submitted in the fax nine soils samples and four water samples should be collected. The soil samples should be equidistant around the tank and collected at the soil/water interface. The initial sample should be started at the most down gradient point based on groundwater flow and go around from there. Four ground water samples should also be collected. One from the up gradient end of the tank and three from down gradient soil locations around the perimeter of the concrete base. These can be taken from the same locations as the soil samples. Please follow standard protocol when collecting samples if contamination is encountered. The sampling of soils and groundwater should take into account tidal influence and geologic conditions.

PLEASE CALL IF YOU ENCOUNTER PROBLEMS WITH THIS FAX

3930-FM-WC0082 9/98

Department of Environmental Protection

STORAGE SYSTEM REPORT FORM
NARRATIVE INFORMATION

FACILITY ID NUMBER 19781 51-36558 S.B.	FACILITY NAME ~~Girard~~ S.B. Point Breeze Process Area
FACILITY ADDRESS/LOCATION 3144 Passyunk Ave. 19145	MUNICIPALITY
	COUNTY Philadelphia
OWNER NAME Patrick A. Chabeda	OWNER ADDRESS Sunoco, Inc. R&M 3144 Passyunk Avenue Philadelphia, PA 19145
OWNER TELEPHONE NUMBER 215-339-2528	

An inspection is being conducted at this facility after the Department was notified of a release of crude oil. The release occurred from a weld on a pipeline that goes through Tank 880 area but has nothing to do with that tank. The pipeline was connected to tank 850. The majority of the material has been recovered. Sampling is also taking place. The drains allowed material to ~~connect~~ S.B. travel to the diked area of Tank 881. However, the drain valves were already closed S.B. as part of normal procedures. This allowed the material to remain in the dike areas and not go to the oil/water separator. Crude oil was the substance released. A small amount of oil did reach the separator but was vacuumed out. The tank registered with the Department as 845A was also inspected. The tank is undergoing a change-in-service. There are small spills that ~~whic~~ S.B. are present in the containment area and the tank is on a concrete base. How thick the base of the ~~cone~~ S.B. tank is will be provided to the Department. The map should include the river and depth of groundwater.

DEP Representative Name (Print)	DEP Representative Signature	Title	Date
Stephan Brown	Stephan Brown	Water Quality Specialist	4-21-2004
			Telephone (484) 250-5712

Signature by the person interviewed does not necessarily imply concurrence with the findings on this report, but does acknowledge that the person was shown the report or that a copy was left with the person.

Name of Person Interviewed (Print)	Signature of Person Interviewed	Title	Date
Patrick A. Chabeda	[signature]	ENVIRONMENTAL ENGINEER	4/21/01
			Telephone ( )

FACILITY

GP 270

Stantec Consulting Corporation
1060 Andrew Drive, Suite 140
West Chester, PA 19380
Tel: (610) 840-2500
Fax: (610) 840-2501

November 23, 2009

Manuel Machado
Sunoco (R&S)
3144 Passyunk Avenue
Philadelphia, Pennsylvania 19145

RE: Tank GP 270 Release – Site Characterization Letter Report
Philadelphia Refinery, Philadelphia, Pennsylvania
SPO #: 09-PT2841
Work Order #: 09-000471-002

Dear Manuel Machado:

Tank GP 270 lies within the Sunoco Inc. Philadelphia Refinery (Sunoco), which is located at 3144 Passyunk Avenue in Philadelphia, Pennsylvania (**Figure 1 and Figure 2**). This letter summarizes the site characterization activities in response to a June 28, 2009 release of 2,720 gallons from aboveground storage tank GP 270. Tank GP 270 is a recovered oil tank and its contents are recovered oil, slop oil, and oily water. As a result of the release, interim remedial activities consisting of free product recovery were conducted by Sunoco on June 28, 2009. Subsequent interim remedial activities by Sunoco included excavation and removal of surface soils. Site characterization activities were conducted by Stantec Consulting Corporation (Stantec) during and following the excavation and removal of surface soils by Sunoco to determine whether additional remedial actions were necessary.

ONSITE SOIL EVALUATION

A Stantec representative was onsite during soil excavation activities to provide guidance to the Sunoco contractors conducting the excavation. A photoionization detector (PID) was used to screen soils to determine the limits of the excavation. The PID, which provides a response in parts per million-volume (ppm_v), was calibrated prior to use in accordance with the manufacturer's specifications. Initially, soils exhibited concentrations of volatile organic compounds (VOC) of up to approximately 2,200 ppm_v. Soils were excavated horizontally and to depths of up to 4 feet below ground surface (bgs) until a significant decrease in VOC concentrations were achieved. Soil excavation was completed in phases (one portion of the excavation at a time) so that areas supporting structures could be backfilled with clean materials promptly to maintain integrity. The extents of the excavation are illustrated in **Figure 3** and disposal documentation for the 800 cubic yards of soil removed is included in **Appendix A**.

SOIL SAMPLING METHODOLOGY

Stantec performed work in accordance with the requirements of the Pennsylvania Department of Environmental Protection (PADEP) Land Recycling and Environmental Remediation Standards Act (Act 2), administered under The Pennsylvania Code Title 25 (25 PA Code) Chapter 250, the Storage Tank and Spill Prevention Act (Act 32) administered under 25 PA Code Chapter 245, and the PADEP's Technical Guidance Manual (TGM) dated June 8, 2002.

Stantec collected a total of 15 soil samples on September 21, September 29, and October 6, 2009. All soil samples were collected from an interval of 0-6 inches into the sidewall or bottom of the excavation. The excavation was divided into four individual areas that were backfilled successively to reduce the risk of sidewall collapse and safeguard adjacent structures. **Figure 3** presents the excavation areas and soil sample locations. The first five samples (S-1 through S-5) were collected from Area 1 on September 21, 2009. Three samples (S-6 through S-8) were collected from Area 2 on September 29, 2009. The remaining seven samples (S-9 through S-15) were collected from Areas 3 and 4 on October 6, 2009.

Soil sample locations were selected based on a systematic random sampling of each excavation area. Because the excavation was completed in portions and the final footprint of the excavation was not known when the sampling commenced, a random number generator was used in advance of field activities to determine potential sampling location coordinates. Excavation areas were plotted and the dimensions of these plots were used to determine the range of x-axis and y-axis coordinates. Due to the varied shape of the excavation, if a plot location fell outside the excavated area, then the next pair of coordinates was chosen until a sample location landed within the excavated area.

In order to characterize subsurface soil conditions from the tank release, soil samples were analyzed for PADEP Act 2 short list of parameters for Fuel Oil No. 4, 5, 6, waste oil, and total xylenes. The list includes the analyses of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, isopropylbenzene (cumene), 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene by EPA Method 8260B, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chysene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, by EPA Method 8270C, and lead by EPA Method 6010B.

SOIL SAMPLING RESULTS

For purposes of evaluating the analytical data obtained through the characterization activities at the site, the MSCs for nonresidential properties developed by PADEP to implement the Statewide

Health Standard under Act 2 have been used as a basis for comparison. Given both the current use of the site and the anticipated use of the tank in the future, the MSCs for nonresidential property provide appropriate grounds for evaluation. In addition, while groundwater at the site is not currently used nor planned to be used for drinking water or agricultural purposes, the MSCs applicable to nonresidential properties overlying used aquifers (with total dissolved solids less than 2,500 mg/l) have been chosen as a conservative basis for comparison.

The MSCs applicable to soils were determined by choosing the highest of the 100 times the groundwater MSC (100 X GW MSC) and the generic value Soil to Groundwater Numeric Values. The highest Soil to Groundwater Numeric Value was then compared to the Direct Contact Numeric Values and the lower number was chosen. When the Soil to Groundwater Numeric Value was less than the applicable Direct Contact Numeric Value, then the Soil to Groundwater Numeric Value became the applicable MSC for surface (0 to 2 feet) and subsurface soil samples (greater than 2 feet). When the Soil to Groundwater Numeric Value was greater than the applicable Direct Contact Numeric Value (surface or subsurface), then the Direct Contact Numeric Value became the applicable MSC for that soil interval (surface or subsurface).

The soil analytical data are summarized on **Table 1**. Copies of the laboratory analytical results are included in **Appendix B.** The soil sampling results were compared to applicable MSCs under Act 2 for nonresidential properties overlying used aquifers. No post-excavation soil samples collected from the GP 270 Tank excavation exceeded any MSC.

CONCLUSIONS

Based on the volume of soil removed (800 cubic yards), at least 12 sample points are required to meet the general attainment requirements for soil. A total of 15 soil samples were collected from sampling points that were random and representative both horizontally and vertically of the excavation limits. The number of sample points collected during this investigation was greater than the minimum attainment requirements for the excavated soil volume.

Based on laboratory analytical results of post-excavation soil samples, it is concluded that interim remedial actions were effective and no additional remedial actions are required. Stantec, on behalf of Sunoco would like to request that PADEP accept the soil samples collected as attainment samples and grant regulatory closure regarding the Tank 270 release. Please contact Manuel Machado at (215) 339-2652 or by email at mmachado@sunocoinc.com if you have any questions or require further information.

Sincerely,

STANTEC CONSULTING CORPORATION

Jennifer Menges
Project Manager

Frank Aceto, PG
Principal Hydrogeologist

Attachments:
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Excavation Areas and Soil Sampling Locations Map
Table 1 – Soil Analytical Results Summary
Appendix A – Soil Disposal Documentation
Appendix B – Laboratory Analytical Data Reports

cc: Dina Toto
Jim Oppenheim
Frank Aceto
Stantec Project File

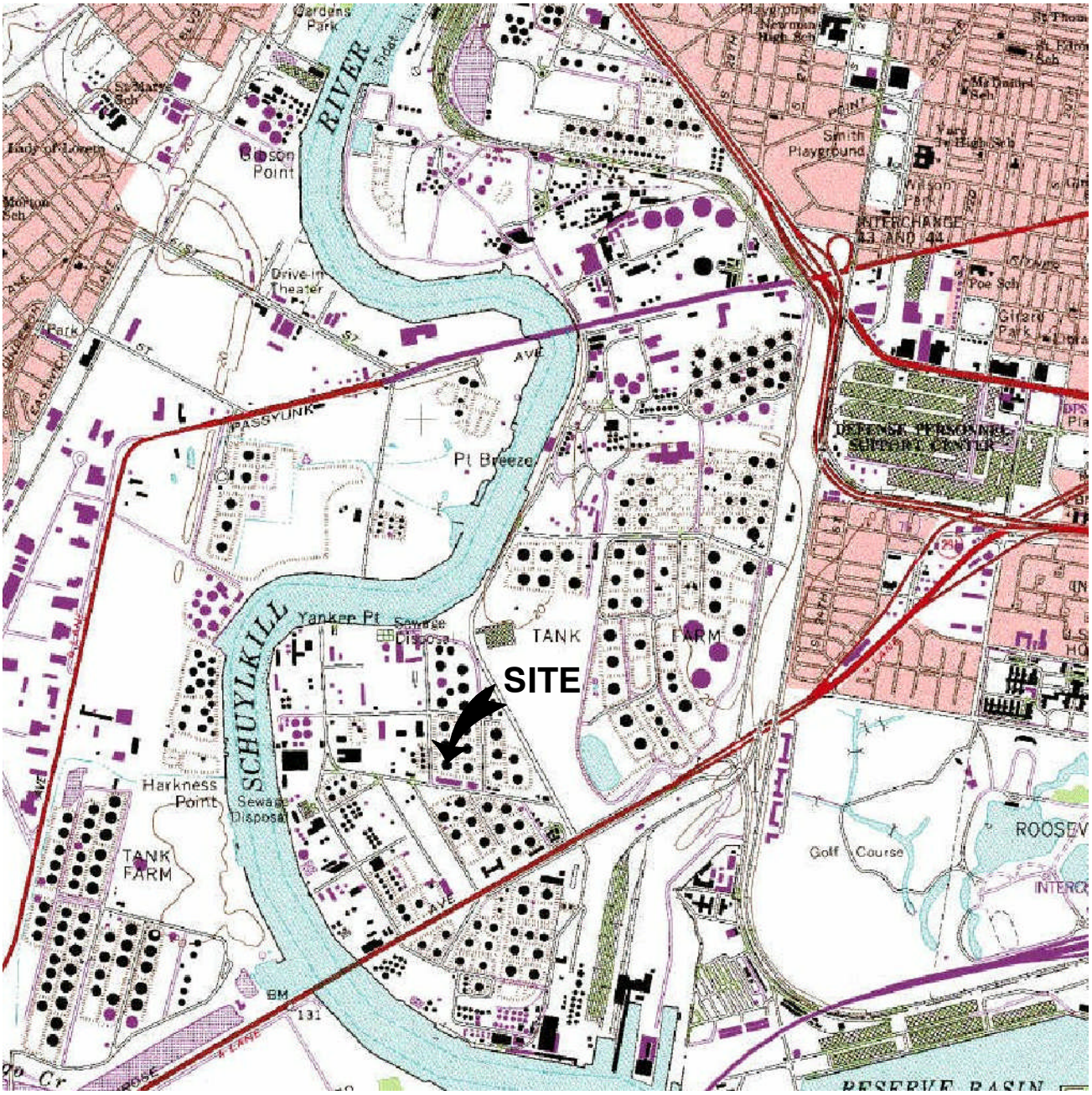
TABLE

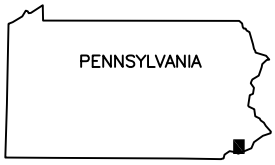
Table 1
Soil Analytical Result Summary
Sunoco - Philadelphia Refinery
Tank GP 270

	Sample Location	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10	S-11	S-12	S-13	S-14	S-15
	Depth (ft)	**4.0-4.5**	**4.0-4.5**	**3.0-3.5**	**4.0-4.5**	**4.0-4.5**	**1.5-2.0**	**2.5-3.0**	**2.0-2.5**	**2.5-3.0**	**2.0-2.5**	**1.5-2.0**	**2.0-2.5**	**1.0-1.5**	**1.0-1.5**	**1.5-2.0**
	Date	**9/21/2009**	**9/21/2009**	**9/21/2009**	**9/22/2009**	**9/22/2009**	**9/29/2009**	**9/29/2009**	**9/29/2009**	**10/6/2009**	**10/6/2009**	**10/6/2009**	**10/6/2009**	**10/6/2009**	**10/6/2009**	**10/6/2009**
Volatile Compounds	**PADEP MSC**															
Benzene	0.5	ND(0.029)	ND(0.025)	ND(0.041)	ND(0.035)	ND(0.031)	ND(0.053)	ND(0.044)	ND(0.044)	ND(0.057)	ND(0.051)	0.12 J	0.061 J	ND(0.058)	ND(0.057)	0.11 J
Ethylbenzene	70	ND(0.059)	ND(0.051)	ND(0.082)	ND(0.070)	ND(0.061)	ND(0.11)	ND(0.088)	ND(0.088)	ND(0.11)	0.12 J	ND(0.064)	ND(0.097)	ND(0.12)	ND(0.11)	0.19 J
Isopropylbenzene (Cumene)	1,600	ND(0.059)	ND(0.051)	ND(0.082)	ND(0.070)	ND(0.061)	ND(0.11)	0.10 J	ND(0.088)	ND(0.11)	ND(0.10)	ND(0.064)	ND(0.097)	ND(0.12)	ND(0.11)	ND(0.11)
Naphthalene	25	0.18 J	ND(0.051)	0.41 J	ND(0.070)	0.13 J	0.41 J	0.39 J	0.71	0.66	0.87	0.29 J	0.85	0.67	0.80	0.43 J
Toluene	100	ND(0.059)	ND(0.051)	0.41 J	ND(0.070)	0.071 J	0.36 J	0.28 J	0.44 J	0.99	0.70	0.40	0.94	0.40 J	0.28 J	0.63
1,2,4 - Trimethylbenzene	20	ND(0.059)	ND(0.051)	ND(0.082)	ND(0.070)	ND(0.061)	ND(0.11)	ND(0.088)	ND(0.088)	0.12 J	ND(0.10)	ND(0.064)	0.12 J	ND(0.12)	0.13 J	0.16 J
1,3,5 - Trimethylbenzene	6.2	ND(0.059)	ND(0.051)	ND(0.082)	ND(0.070)	ND(0.061)	ND(0.11)	ND(0.088)	ND(0.088)	ND(0.11)	ND(0.10)	ND(0.064)	ND(0.097)	ND(0.12)	ND(0.11)	ND(0.11)
Xylenes (Total)	1,000	ND(0.059)	ND(0.051)	ND(0.082)	ND(0.070)	ND(0.061)	ND(0.11)	ND(0.088)	0.18 J	0.17 J	0.25 J	0.083 J	0.19 J	0.14 J	0.19 J	0.64
Semi-Volatile Compounds	**PADEP MSC**															
Anthracene	350	0.43	0.11 J	4.7	0.23 J	0.095 J	7.5	4.1	2.1 J	2.5 J	2.0 J	0.89 J	0.78 J	1.1 J	1.1 J	4.4
Benzo (a) anthracene	110	1.4	0.32	6.4	0.52	0.23	8.8	4.9	2.2 J	3.5	2.1 J	1.6 J	1.0 J	1.8 J	1.9 J	5.8
Benzo (a) pyrene	11.0	1.7	0.36	5.1	0.59	0.26	7.1	3.5	2.2 J	2.9	3.6	1.6 J	1.0 J	2.4 J	2.5 J	6.5
Benzo (b) fluoranthene	110	2.2	0.41	7.0	0.69	0.34	8.6	3.9	2.5 J	3.1	3.5	2.0	1.4 J	2.8	3.0	7.5
Benzo (g,h,i) perylene	180	1.4	0.29	3.4	0.47	0.23	3.7	1.6 J	1.5 J	1.7 J	4.5	1.1 J	0.76 J	1.9 J	2.3 J	4.6
Chrysene	230	1.4	0.34	7.1	0.61	0.26	11	5.6	2.6 J	3.7	2.6	1.9 J	1.1 J	1.9 J	1.9 J	7.3
Fluorene	3,800	0.21 J	0.062 J	4.1	0.16 J	0.047 J	7.3	4.3	1.7 J	2.2 J	0.96 J	0.65 J	0.62 J	ND(0.52)	ND(0.50)	3.2
Indeno (1,2,3-cd) pyrene	110	1.2	0.25	2.8	0.41	0.21 J	3.1	1.4 J	1.1 J	1.3 J	3.5	0.96 J	0.62 J	1.6 J	1.9 J	3.6
Phenanthrene	10,000	1.1	0.27	11	1.1	0.21 J	17	18	5.5	8.9	3.1	1.7 J	2.1 J	3.0	2.5 J	4.9
Pyrene	2,200	1.9	0.44	15	0.93	0.33	23	13	5.2	8.5	2.7	3.5	1.9 J	2.0 J	2.3 J	15
Metals	**PADEP MSC**															
Lead	450	73.1	47.1	264	20.7	28.9	450	387	443	328	447	99.9	235	330	366	386

Notes:
All results are presented in mg/kg unless noted otherwise.
Concentrations chosen as the applicable standard for attainment are derived from Non-Residential, Used Aquifer Medium-Specific Concentrations (MSCs).
J - Estimated value
bgs - below ground surface
ND(0.029) - Not detected above the laboratory method detection limit (in parenthesis).

FIGURES





QUADRANGLE LOCATION

N

0 1/2 1

SCALE (MILES)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PHILADELPHIA, PENNSYLVANIA–NEW JERSEY; 1995

Stantec Consulting Corporation
1060 ANDREW DRIVE, SUITE 140
WEST CHESTER, PENNSYLVANIA
19380
Tel. 610.840.2500
Fax. 610.840.2501
www.stantec.com

FOR:				FIGURE:
SUNOCO, INC. PHILADELPHIA REFINERY PHILADELPHIA, PENNSYLVANIA		**SITE LOCATION MAP**		**1**
JOB NUMBER:	DRAWN BY: TFB	CHECKED BY: BCS	APPROVED BY: JLM	DATE: 10/22/2009

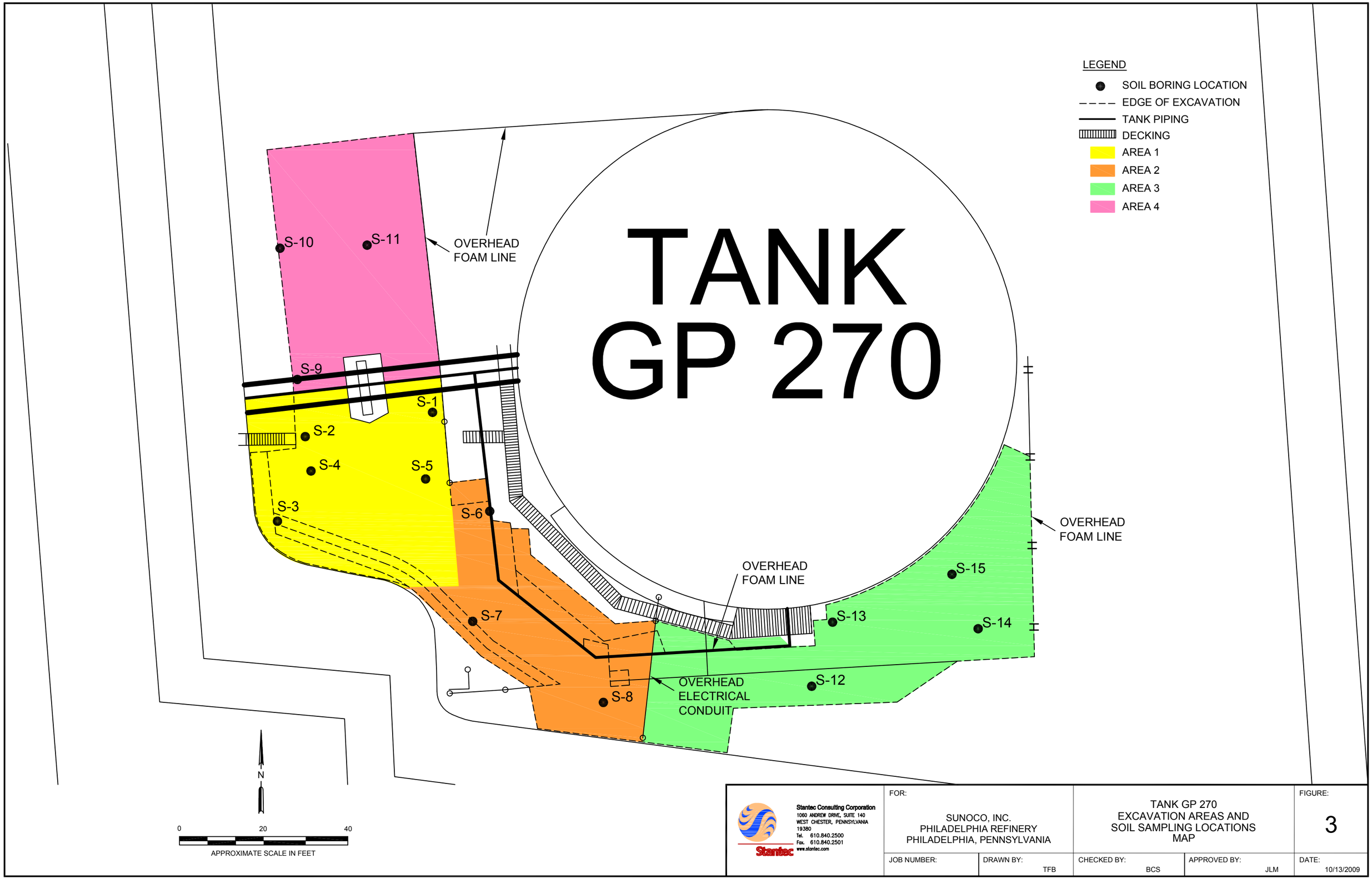
FILEPATH: SUNOCO\PHILLY REFINERY

62SU-SL2.DWG

Stantec Consulting Corporation
1060 ANDREW DRIVE, SUITE 140
WEST CHESTER, PENNSYLVANIA
19380
Tel. 610.840.2500
Fax. 610.840.2501
www.stantec.com

FOR:		SITE PLAN		FIGURE:
SUNOCO, INC. PHILADELPHIA REFINERY PHILADELPHIA, PENNSYLVANIA				2
JOB NUMBER:	DRAWN BY: TFB	CHECKED BY: BCS	APPROVED BY:	DATE: 10/13/2009

V:\2134\active\cadd files\1-Clients\Sunoco\PHILLY REFINERY\GIS\CAD



Stantec Consulting Corporation
1060 ANDREW DRIVE, SUITE 140
WEST CHESTER, PENNSYLVANIA
19380
Tel. 610.840.2500
Fax. 610.840.2501
www.stantec.com

FOR:			FIGURE:
SUNOCO, INC. PHILADELPHIA REFINERY PHILADELPHIA, PENNSYLVANIA		TANK GP 270 EXCAVATION AREAS AND SOIL SAMPLING LOCATIONS MAP	3
JOB NUMBER:	DRAWN BY: TFB	CHECKED BY: BCS	APPROVED BY: JLM	DATE: 10/13/2009

Stantec

APPENDIX A
SOIL DISPOSAL DOCUMENTATION

GP 270 Tank
Sunoco – Philadelphia Refinery
Philadelphia, Pennsylvania

One Team. Infinite Solutions.

CLEANEARTH
treating the planet right

Manifest # 301594

#1 TANK 270

GLOBAL JOB NUMBER: ~~101732~~ 111647

FACILITY APPROVAL NUMBER: ~~73100013~~ 09310 0217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ALT70 # WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	19.45

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: Chas D. Barksdale Date and Time: 9/16/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 012 - AK 988B

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 9-15-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 9-16-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/16/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032171

	Date	Time	Scale
In:	9/16/2009	11:20:30	Scale 1
Out:	9/16/2009	11:21:42	P.T.

	Lbs	Tns
Gross:	65800	32.90
Tare:	26900	13.45
Net:	38900	19.45

Manifest: 301534
Vehicle ID: FDS012
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	19.45	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER # —

DRIVER : [illegible] MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105532
PRINTED 9/14/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301594

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

9/16/09

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) - 9/16/09

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE ~~[illegible]~~2009
TIME 9:00:00 AM
IN 6:45 OUT 11:00

DELIVER DATE ~~[illegible]~~2009
TIME 10:15:00 AM
IN 11:15 OUT 11:30

GROSS WT 65880
TARE WT 26900
NET WT 38900

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):
Delivered 3 LOADS OF Clean Fill Between Tank 841 and Tank 271

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:
REF : SPO#09-PT2290
WRKORD: 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

CONTACT : NICK D 215-339-7012

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE 9-16-09 CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark [illegible]
DATE : 9-16-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301593

#2
Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 093100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Action # 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	22.03

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr Title: Environmental Manager

Signature: [signature] Date and Time: 9/15/09

TRANSPORTER

Company: ~~BJ Transportation Company, INC.~~ Phone Number: ~~1-800-524-2552~~

Address: ~~1176 US Rout 40 Woodstown, NJ 08098~~ Truck # and License Plate: 012-AK988B

Driver: Mark Elkhill (Type or Print Clearly) SW Haulers Permit #: WH2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 9-16-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 9-16-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/16/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032176

	Date	Time	Scale
In:	9/16/2009	14:36:41	Scale 1
Out:	9/16/2009	14:38:40	P.T.

	Lbs	Tns
Gross:	70960	35.48
Tare:	26900	13.45
Net:	44060	22.03

Manifest: ~~310593~~ 301593
Vehicle ID: FOS012
Act 90 Decal: WH2481r
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	22.03	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: Mark Elkhard

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER # —

DRIVER : Foster

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

PRINTED 9/14/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301593

105538

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #012 OUT #012

PICKUP DATE ~~9/15/2009~~ 9/16/09
TIME 1:00:00 PM
IN 11:40 OUT 2:20

DELIVER DATE ~~9/15/2009~~ 9-16-09
TIME 2:15:00 PM
IN 2:30 OUT 2:45

GROSS WT 70960
TARE WT 26900
NET WT 44060

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):
Delivered 2 Loads of Clean Fill Between Tanks 841 PER 271

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:
REF : SPO#09-PT2990
WRKORD: 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkell
DATE : 9-16-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301592

R 270

LOBAL JOB NUMBER: ~~101732~~ 111647 FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) ACT 90 Int 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	23.52

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: [signature] Date and Time: 9/15/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: AK988B NJ.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 9-22-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 9-22-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3281 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032258

	Date	Time	Scale
In:	9/22/2009	08:28:31	Scale 1
Out:	9/22/2009	08:28:45	P.T.

	lbs	Tns
Gross:	73940	36.97
Tare:	26900	13.45
Net:	47040	23.52

Manifest: 301592
Vehicle ID: FOS012
Act 90 Decal: WH2481r
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.52	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elliott

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER #

DRIVER : Mark

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105613
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST #

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE ~~9/21/2009~~ 9/22/09
TIME 11:00:00 AM
IN 6:45 OUT

DELIVER DATE ~~9/21/2009~~ 9/22/09
TIME 12:15:00 PM
IN OUT

GROSS WT
TARE WT
NET WT

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER DATE CONSIGNEE DATE

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Cell
DATE : 9/22/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301591

#4
Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 093100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	13.80

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: [signature] Date and Time: 9/15/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 006 - AG 309K

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: Z481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/15/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/15/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/15/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032153

	Date	Time	Scale
In:	9/15/2009	13:31:02	Scale 1
Out:	9/15/2009	13:33:48	P.T.

	Lbs	Tns
Gross:	54400	27.20
Tare:	26800	13.40
Net:	27600	13.80

Manifest: 301591
Vehicle ID: FOS906
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

217

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	13.80	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: Jay, Clifford H 67116

CLEANEARTH
treating the planet right

Manifest # 301590

45
Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~ **FACILITY APPROVAL NUMBER:** 093100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret
  24 Middlesex Avenue
  Carteret, NJ 07008
  Ph: 732-541-8909
- ☐ Clean Earth of Maryland
  1469 Oak Ridge Place
  Hagerstown, MD 21740
  Ph: 301-791-6220
- ☐ Clean Earth of New Castle
  94 Pyles Lane
  New Castle, DE 19720
  Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia
  3201 S. 61st Street
  Philadelphia, PA 19153
  Ph: 215-724-5520
- ☐ Clean Earth of West Virginia
  3815 South State Route 2
  Friendly, WV 26146
  Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania
  7 Steel Road East
  Morrisville, PA 19067
  Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) Act 90 WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	18.55

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: [signature] Date and Time: 9/15/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 006 - AG 309K

Driver: Mike Culp (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/16/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/16/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/16/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032166

	Date	Time	Scale
In:	9/16/2009	10:50:56	Scale 1
Out:	9/16/2009	10:51:04	P.T.

	Lbs	Tns
Gross:	63900	31.95
Tare:	26800	13.40
Net:	37100	18.55

Manifest: 301590
Vehicle ID: FOS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	18.55	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: Jay, Clifford H 67116

TRACTOR # 006

TRAILER # ——

DRIVER : Tu

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105533
PRINTED 9/14/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301590

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # ____ OUT # ____

PICKUP DATE 9/16/2009
TIME 11:00:00 AM
IN 6:45 OUT 10:30

DELIVER DATE 9/16/2009
TIME 12:15:00 PM
IN 10:30 OUT 11:00

GROSS WT 63660
TARE WT 26160
NET WT

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):
2 LOADS FILL DIRT ON SITE
1 LOAD TO CLEAN EARTH

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:
REF : SPO#105533
MRKORD: 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER Tom Johnson DATE 9/16 CONSIGNEE ____ DATE ____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : M. Culp
DATE : 9/16/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301595

#16
Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 093100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

WH 2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	13.83

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: [signature] Date and Time: 9/15/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 006 - MG 309K

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/16/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/16/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/16/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032179

	Date	Time	Scale
In:	9/16/2009	15:03:41	Scale 1
Out:	9/16/2009	15:04:11	P.T.

	Lbs	Tns
Gross:	54460	27.23
Tare:	26800	13.40
Net:	27660	13.83

Manifest: 301595
Vehicle ID: FDS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	13.83	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: M. Culp.

Facility: Schmidt, Joe

TRACTOR # _____

TRAILER # _____

DRIVER : _____

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105536
PRINTED 9/14/2009 BOOKED KELDE

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301595

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/15/2009
TIME 1:00:00 PM
IN 11:30 OUT 2:45

DELIVER DATE 9/15/2009
TIME 2:15:00 PM
IN _____ OUT _____

GROSS WT _____
TARE WT 26,740
NET WT _____

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

4 LOADS FILL DIRT ON SITE
1 LOAD CLEAN EARTH

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
REF : SPO#09-PT2990
WRKORD: 09-000106-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

CONTACT : NICK D 215-339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER Tom Johnson DATE 9/18 CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER :
DATE :

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301596

#7

Tank 270

111647

0931 00217

GLOBAL JOB NUMBER: ~~101732~~ **FACILITY APPROVAL NUMBER:** ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT90 LH 2481

GENERATOR'S NAME & SITE ADDRESS: ~~Sunoco-Philadelphia~~	GROSS WEIGHT: ☑ Tons ☐ Yards	
~~3144 Passyunk Avenue~~ ~~Philadelphia, PA 19145~~	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
GENERATOR'S PHONE: ~~856-881-6895~~	NET WEIGHT: ☑ Tons ☐ Yards	21.59

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

~~Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material~~

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Charles D Barksdale Jr~~ Title: ~~Environmental Manager~~

Signature: Chas D. Barksdale Date and Time: 9/15/09

TRANSPORTER

Company: ~~SJ Transportation Company, INC.~~ Phone Number: ~~1-800-524-2552~~

Address: ~~1176 US Rout 40 Woodstown, NJ 08098~~ Truck # and License Plate:

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/23/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/23/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/23/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032271

	Date	Time	Scale
In:	9/23/2009	08:39:20	Scale 1
Out:	9/23/2009	08:39:38	P.T.

	Lbs	Tns
Gross:	69980	34.99
Tare:	26800	13.40
Net:	43180	21.59

Manifest: 301596
Vehicle ID: FOS006
Act 90 Decal: WN2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	21.59	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: Jay, Clifford H 67116

TRACTOR # 006

TRAILER # ——→

DRIVER : _____

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105974
PRINTED 9/22/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301596

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/23/2009
TIME 7:00:00 AM
IN 6:45 OUT 8:26

DELIVER DATE 9/23/2009
TIME 8:00:00 AM
IN 8:40 OUT 9:00

GROSS WT 69,980
TARE WT 26,800
NET WT 43,180

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
:
:
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

CONTACT : NICK D 215-339-7012

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mg Cup
DATE : 9/23/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301597

GLOBAL JOB NUMBER: 111647 ~~101732~~ FACILITY APPROVAL NUMBER: 073100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia, 3144 Passyunk Avenue, Philadelphia, PA 19145	GROSS WEIGHT: ☑ Tons ☐ Yards	
	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
GENERATOR'S PHONE: 856-381-6895	NET WEIGHT: ☑ Tons ☐ Yards	26.74

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: [signature] Date and Time: 9/23/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/23/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/23/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/23/09

TRANSPORTER

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032277

	Date	Time	Scale
In:	9/23/2009	10:37:10	Scale 1
Out:	9/23/2009	10:37:18	P.T.

	Lbs	Tns
Gross:	80280	40.14
Tare:	26800	13.40
Net:	53480	26.74

Manifest: 301597
Vehicle ID: FOS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.74	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: [signature]
Jay, Clifford H 67115

TRACTOR # 006

TRAILER # —

DRIVER :

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105975
PRINTED 9/22/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301597

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/23/2009
TIME 9:00:00 AM
IN 9:15 OUT 10:15

DELIVER DATE 9/23/2009
TIME 10:00:00 AM
IN 10:37 OUT 11:00

GROSS WT 80280
TARE WT 26800
NET WT 53480

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:
SPOH 09-PT2990
WOH 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER T Johnson DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : M. Culp
DATE : 9/23/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301598

#9
Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647

FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☑ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other

Non-Hazardous Material Manifest

(Type or Print Clearly)

ALT 90 # WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	26.11

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: Chas D Barksdale Date and Time: 9/15/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 012- AK988B NJ

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 9-23-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 9-23-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/23/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032275

	Date	Time	Scale
In:	9/23/2009	08:55:57	Scale 1
Out:	9/23/2009	08:58:31	P.T.

Manifest: 301598
Vehicle ID: FOS012
Act 90 Decal: WH2481r
Customer: S & J TRANSPORTATION CO.

	Lbs	Tns
Gross:	79120	39.56
Tare:	26900	13.45
Net:	52220	26.11

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.11	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER #

DRIVER : Porter - MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105978
PRINTED 9/22/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301598

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE 9/23/2009
TIME 7:00:00 AM
IN 6:45 OUT 8:45

DELIVER DATE 9/23/2009
TIME 8:00:00 AM
IN 8:55 OUT 9:10

GROSS WT 39.56
TARE WT 13.45
NET WT 26.11

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY DIRT

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 9-23-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301587

#10
Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647

FACILITY APPROVAL NUMBER: ~~73100013~~ 091 00217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

Act 90 # nH2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	22.46

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: Chel Br Date and Time: 9/22/09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: MIKE CULP SW Haulers Permit #:

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/22/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/22/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032256

	Date	Time	Scale
In:	9/22/2009	08:19:31	Scale 1
Out:	9/22/2009	08:20:41	P.T.

Manifest: 301587
Vehicle ID: FDS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

	Lbs	Tns
Gross:	71720	35.86
Tare:	26800	13.40
Net:	44920	22.46

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	22.46	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: M. Cuff

Facility: Jay, Clifford H 67116

TRACTOR # 006

TRAILER # —

DRIVER : Ken

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105609
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301587

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/21/2009
TIME 6:45:00 AM
IN 6:45 OUT 7:50

DELIVER DATE 9/21/2009
TIME 8:00:00 AM
IN 8:20 OUT 8:30

GROSS WT 71080
TARE WT 26520
NET WT 44560

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : M. Culp
DATE : 9/22/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301588

#11
Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111617

FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ALTGO WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☑ Tons ☐ Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑ Tons ☐ Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-8895	NET WEIGHT: ☑ Tons ☐ Yards	22.35

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: Date and Time: ~~9/15/09~~ 9-22

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-22

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-22

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032261

	Date	Time	Scale
In:	9/22/2009	10:19:28	Scale 1
Out:	9/22/2009	10:24:01	P.T.

Manifest: 301588
Vehicle ID: FQS012
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

	Lbs	Tns
Gross:	71600	35.80
Tare:	26900	13.45
Net:	44700	22.35

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	22.35	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elk

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER # —

DRIVER : -MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105616
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301588

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

9/22/09

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

9-22-09

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE ~~9/21/2009~~
TIME 1:00:00 PM
IN 8:54 OUT

DELIVER DATE ~~9/21/2009~~
TIME 2:00:00 PM
IN OUT

GROSS WT 35.80
TARE WT 13.45
NET WT 22.35

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO. INC. (800) 524-2552
PER : Mark Elkel
DATE : 9-22-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301589

#12
Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647 FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

ACT 90 #2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia, 3144 Passyunk Avenue, Philadelphia, PA 19145	GROSS WEIGHT: ☑ Tons ☐ Yards	
	TARE WEIGHT: ☑ Tons ☐ Yards	13.40
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	20.16

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Charles D Barksdale Jr. Title: Environmental Manager

Signature: [signature] Date and Time: 9/15/09

TRANSPORTER

Company: SJ Transportation Company, INC Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: Mike Culp (Type or Print Clearly) SW Haulers Permit #: (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/22/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/22/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032260

	Date	Time	Scale
In:	9/22/2009	10:06:56	Scale 1
Out:	9/22/2009	10:09:14	P.T.

	Lbs	Tns
Gross:	67120	33.56
Tare:	26800	13.40
Net:	40320	20.16

Manifest: 3015A9
Vehicle ID: FOS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	20.16	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: Jay, Clifford H 67116

TRACTOR # 006

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105610
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 3015891

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/21/2009
TIME 6:45:00 AM
IN 9:00 OUT 9:30

DELIVER DATE 9/21/2009
TIME 8:00:00 AM
IN 10:05 OUT 10:10

GROSS WT 66560
TARE WT 26520
NET WT _____

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
:
:
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER [signature] DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mike Culp
DATE : 9/22/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

ODP

CLEANEARTH
treating the planet right

Manifest # 301602

#13 Tank 270

111647

093100217

GLOBAL JOB NUMBER: ~~101732~~ **FACILITY APPROVAL NUMBER:** ~~73100013~~

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Other

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of West Virginia
3815 South State Route 2
Friendly, WV 26146
Ph: 304-652-8580

☐ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 # WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT:	
Philadelphia, PA 19145	☒Tons ☐Yards	13.45
GENERATOR'S PHONE: 856-881-8895	NET WEIGHT: ☒Tons ☐Yards	25.54

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time: 9-22-09

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3800

Address: 1176 Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 012 AK988B NJ.

Driver: MARK ELKHILL SW Haulers Permit #: SWH2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-22-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-22-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032265

	Date	Time	Scale
In:	9/22/2009	13:25:27	Scale 1
Out:	9/22/2009	13:27:20	P.T.

	Lbs	Tns
Gross:	77980	38.99
Tare:	26900	13.45
Net:	51080	25.54

Manifest: 301682
Vehicle ID: FDS012
Act 90 Decal: WH2481c
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	25.54	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

TRACTOR # 012

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105614
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301602

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE 9/21/2009
TIME 11:00:00 AM
IN 12.05 OUT 1.15

DELIVER DATE 9/21/2009
TIME 12:15:00 PM
IN 1.25 OUT 1.35

GROSS WT 38.99
TARE WT 13.45
NET WT 25.54

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [signature]
DATE : 9-22-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

012

CLEANEARTH
treating the planet right

Manifest # 301603

#14 Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~ FACILITY APPROVAL NUMBER: 093100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT90 + WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT:	
Philadelphia, PA 19145	☒Tons ☐Yards	13.45
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	23.19

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 Rout 40 Woodstown, NJ 08098 Truck # and License Plate: AK968B NJ.

Driver: (Type or Print Clearly) SW Haulers Permit #: WH2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-22-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-22-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032263

	Date	Time	Scale
In:	9/22/2009	11:47:07	Scale 1
Out:	9/22/2009	11:47:45	P.T.

	Lbs	Tns
Gross:	73280	36.64
Tare:	26900	13.45
Net:	46380	23.19

Manifest: 301603
Vehicle ID: FOS012
Act 90 Decal: WH24Air
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.19	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elfield

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER # —

DRIVER : Pete - MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105615
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301603

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) - 9-22-09

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE ~~9/21/2009~~ 9-22-09
TIME 1:00:00 PM
IN 10:45 OUT 11:20

DELIVER DATE ~~9/21/2009~~
TIME 2:00:00 PM
IN 11:35 OUT 11:50

GROSS WT 36,640
TARE WT 34,545
NET WT 2,095

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY DIRT

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Gilkeson
DATE : 9-22-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301604

#15 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647 FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) Act 90 WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	20.56

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 Rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/22/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/22/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032262

	Date	Time	Scale
In:	9/22/2009	11:35:49	Scale 1
Out:	9/22/2009	11:37:45	P.T.

	Lbs	Tns
Gross:	67920	33.96
Tare:	26800	13.40
Net:	41120	20.56

Manifest: 301604
Vehicle ID: FOS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	20.56	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: Jay, Clifford H. 7116

TRACTOR # 006

TRAILER # _____

DRIVER : _____

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105611
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301604

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/21/2009
TIME 9:00:00 AM
IN 10:45 OUT 11:30

DELIVER DATE 9/21/2009
TIME 10:15:00 AM
IN 11:45 OUT 11:55

GROSS WT 67300
TARE WT 26520
NET WT _____

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mike Culp
DATE : 9/22/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301601

#16 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647

FACILITY APPROVAL NUMBER: ~~73100013~~ 09310021 7

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 # 12481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	22.60

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3800

Address: 1176 Rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: 9/22/09 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/22/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/22/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032264

	Date	Time	Scale
In:	9/22/2009	12:50:49	Scale 1
Out:	9/22/2009	13:01:24	P.T.

	Lbs	Tns
Gross:	72000	36.00
Tare:	26800	13.40
Net:	45200	22.60

Manifest: 301601
Vehicle ID: FDS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	22.60	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: M. Culp

Facility: Jay, Clifford H 67116

TRACTOR # [illegible]

TRAILER # [illegible]

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105612
PRINTED 9/18/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301601

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/21/2009
TIME 9:00:00 AM
IN 12:15 OUT 12:45

DELIVER DATE 9/21/2009
TIME 10:15:00 AM
IN 1:00 OUT 1:15

GROSS WT 71340
TARE WT 26520
NET WT

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER [signature] DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [signature]
DATE : 9/22/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301600

#17 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647

FACILITY APPROVAL NUMBER: ~~73100013~~ 09 3100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

ACTSO # 2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☐Tons ☐Yards	12.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☐Tons ☐Yards	24.21

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 Rout 40 Woodstown, NJ 08098 Truck # and License Plate: AM-574H

Driver: MIKE CULP (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 9/22/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mike Culp Date and Time: 9/22/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/27/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032266

	Date	Time	Scale
In:	9/22/2009	14:47:48	Scale 1
Out:	9/22/2009	14:48:03	P.T.

	Lbs	Tns
Gross:	75220	37.61
Tare:	26800	13.40
Net:	48420	24.21

Manifest: 301600
Vehicle ID: FDS006
Act 90 Decal: WH24A1
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	24.21	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: _____

Facility: _____
Jay, Clifford H 67116

TRACTOR # 006

TRAILER # ———

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105976
PRINTED 9/22/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301600

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/23/2009
TIME 11:00:00 AM
IN 1:30 OUT 2:20

DELIVER DATE 9/23/2009
TIME 12:00:00 PM
IN 2:45 OUT 3:05

GROSS WT 75 220
TARE WT 26800
NET WT 48.420

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER [signature] DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : M. Culp
DATE : 9/22/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301599

#18 Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 073100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

Active in H2471

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	1345
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☐Tons ☐Yards	23.55

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1178 Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 012- AK988B

Driver: MARK ELKHILL SW Haulers Permit #: WH 2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-22-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-22-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032267

	Date	Time	Scale
In:	9/22/2009	14:55:53	Scale 1
Out:	9/22/2009	14:57:52	P.T.

	Lbs	Tns
Gross:	74000	37.00
Tare:	26900	13.45
Net:	47100	23.55

Manifest: 301599
Vehicle ID: FOS012
Act 90 Decal: WH248ir
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.55	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elliott

Facility: Jay, Clifford H 67116

TRACTOR # 012

TRAILER #

DRIVER : Austin

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105535
PRINTED 9/14/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301599

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

9-27-09

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( )

9-27-09

TRAILER TYPE: TRIAXL
UNIT:
IN # 0.2 OUT # 0.2

PICKUP ~~DATE 9/15/2009~~
TIME 11:00:00 AM
IN 1.52 OUT 2.40

DELIVER DATE ~~9/15/2009~~
TIME 12:15:00 PM
IN 2.52 OUT 3.0

GROSS WT 37.00
TARE WT 13.45
NET WT 23.55

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO#09-PT2990
WRKORD: 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkin
DATE : 9-22-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301611

#19 Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 09310021 7 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACTIVE WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	24.83

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Glenn Tashjian Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC Phone Number: (610) 876-3600

Address: 1176 US rout 40 Woodstown, NJ 08098 Truck # and License Plate: 012- AK 988B

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 9-22-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 9-22-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032279

	Date	Time	Scale
In:	9/23/2009	13:02:52	Scale 1
Out:	9/23/2009	13:04:27	P.T.

	Lbs	Tns
Gross:	76560	38.28
Tare:	26900	13.45
Net:	49660	24.83

Manifest: 301611
Vehicle ID: FOS012
Act 90 Decal: WH2481r
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	24.83	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elkhart

Facility: [signature]
Jay, Clifford H 67116

TRACTOR # 012

TRAILER #

DRIVER : Dec

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 105979
PRINTED 9/22/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301611

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE 9/23/2009
TIME 9:00:00 AM
IN 9.25 OUT 12.55

DELIVER DATE 9/23/2009
TIME 10:00:00 AM
IN 1.05 OUT 1.15

GROSS WT 38.25
TARE WT 13.45
NET WT 24.85

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):
WAiting + LOADING Time
HAD TO WAIT FOR
Clean. EARTh MANIFESTS.

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRT

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 9-23-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301610

#20 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647 FACILITY APPROVAL NUMBER: ~~73100013~~ 09300217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☒ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) Alt 90 # WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia, 3144 Passyunk Avenue, Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.45
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	37.16

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Glenn Tashjian Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 US rout 40 Woodstown, NJ 08098 Truck # and License Plate: 012- AK988B N.J.

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 9-22-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 9-22-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 9/22/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032280

	Date	Time	Scale
In:	9/23/2009	14:52:41	Scale 1
Out:	9/23/2009	14:57:24	P.T.

	Lbs	Tns
Gross:	101220	50.61
Tare:	26900	13.45
Net:	74320	37.16

Manifest: 301610
Vehicle ID: FOS012
Act 90 Decal: WH2481r
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Generator: Sunoco
Job Name: Sunoco-Philadelphia
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	37.16	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elkhill

Facility: Jay, Clifford H 67116

TRACTOR # [illegible]

TRAILER # —

DRIVER : [illegible] - MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

PRINTED 9/22/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301610

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 012 OUT # 012

PICKUP DATE 9/23/2009
TIME 11:00:00 AM
IN 1:30 OUT 2:45

DELIVER DATE 9/23/2009
TIME 12:00:00 PM
IN 2:55 OUT 3:10

GROSS WT 50.61
TARE WT 13.45
NET WT 37.16

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
:
:
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [signature]
DATE : 9-23-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301609

#21 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647

FACILITY APPROVAL NUMBER: ~~73100013~~ 09310021 7

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 95 WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.00
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☐Tons ☐Yards	28.47

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: BJ Transportation Company, INC. Phone Number: (610) 870-3000

Address: 1176 US rout 40 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744M NJ

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032298

	Date	Time	Scale
In:	9/25/2009	08:59:21	Scale 1
Out:	9/25/2009	08:59:33	P.T.

	Lbs	Tns
Gross:	82940	41.47
Tare:	26000	13.00
Net:	56940	28.47

Manifest: 301609
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	28.47	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER #

DRIVER : Martin MACK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106070
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301609

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 9/25/2009
TIME 7:00:00 AM
IN 7:00 OUT 8:30

DELIVER DATE 9/25/2009
TIME 8:00:00 AM
IN 8:40 OUT 9:10

GROSS WT 41.47
TARE WT 13.00
NET WT 28.47

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elder
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301612

#22 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647 FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

AC780 # 42481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.00
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	29.73

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: S.J Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 US rout 40 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744N

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH2481 - AK744N (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032306

	Date	Time	Scale
In:	9/25/2009	10:28:17	Scale 1
Out:	9/25/2009	10:29:24	P.T.

	Lbs	Tns
Gross:	85460	42.73
Tare:	26000	13.00
Net:	59460	29.73

Manifest: 301612
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	29.73	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER : MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106071
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301612

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 9/25/2009
TIME 9:00:00 AM
IN 9:25 OUT 10:15

DELIVER DATE 9/25/2009
TIME 10:00:00 AM
IN 10:25 OUT 10:37

GROSS WT 42.75
TARE WT 13.00
NET WT 29.75

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301613

#23 Tank #270

111647 ~~101732~~

09310021 7

GLOBAL JOB NUMBER: _____ **FACILITY APPROVAL NUMBER:** 73100013

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

ACT40 TH2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	1300
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	26.89

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: _____ Date and Time: _____

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 870-3800

Address: 1178 US rout 40 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744N N.J.

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 9/25/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000002310

	Date	Time	Scale
In:	9/25/2009	12:12:02	Scale 1
Out:	9/25/2009	12:13:43	P.T.

	Lbs	Tns
Gross:	79780	39.89
Tare:	26000	13.00
Net:	53780	26.89

Manifest: 301613
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.89	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER : Carlos - MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106072
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301613

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 9/25/2009
TIME 11:00:00 AM
IN 10:47 OUT 12:00

DELIVER DATE 9/25/2009
TIME 12:00:00 PM
IN 12:06 OUT 12:21

GROSS WT 39.89
TARE WT 13.00
NET WT 26.89

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301608

#24 Tank 270

111647

093100217

GLOBAL JOB NUMBER: ~~101732~~ **FACILITY APPROVAL NUMBER:** ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

Act 90 # WH2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑Tons ☐Yards	13.78
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	27.91

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: S.J Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1178 US rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: Charles S. Finlaw Jr SW Haulers Permit #: WH2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-25-09 8:20

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032299

	Date	Time	Scale
In:	9/25/2009	09:02:03	Scale 1
Out:	9/25/2009	09:02:16	P.T.

	Lbs	Tns
Gross:	83380	41.69
Tare:	27560	13.78
Net:	55820	27.91

Manifest: 301608
Vehicle ID: FOS007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	27.91	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

TRACTOR # 007

TRAILER # _____

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106066
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301608

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/25/2009
TIME 7:00:00 AM
IN 7:00 OUT 8:55

DELIVER DATE 9/25/2009
TIME 8:00:00 AM
IN 9:07 OUT 9:09

GROSS WT 85,380
TARE WT 27,560
NET WT ~~83,380~~ 55820

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
:
:
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER [illegible]
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301607

#25 Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 09310021 7 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

Act 90 # 442481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.00
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	24.94

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tachjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 US rout 30 Woodstown, NJ 08098 Truck # and License Plate:

Driver: Charles S. Finlaw Jr (Type or Print Clearly) SW Haulers Permit #: (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: ~~[illegible]~~ 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032308

	Date	Time	Scale
In:	9/25/2009	10:57:38	Scale 1
Out:	9/25/2009	10:58:00	P.T.

	Lbs	Tns
Gross:	77440	38.72
Tare:	27560	13.78
Net:	49880	24.94

Manifest: 301607
Vehicle ID: FD5007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	24.94	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver: _____

Facility: _____
Jay, Clifford H 67116

TRACTOR # 007

TRAILER #

DRIVER :

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106067
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301607

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # OUT #

PICKUP DATE 9/25/2009
TIME 9:00:00 AM
IN 9:37 OUT 10:47

DELIVER DATE 9/25/2009
TIME 10:00:00 AM
IN 10:53 OUT 11:14

GROSS WT 77940
TARE WT 27560
NET WT 49880

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER :
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301606

#26 Tank 270

111647

09310021 7

GLOBAL JOB NUMBER: ~~101732~~ **FACILITY APPROVAL NUMBER:** ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 # WH2481

GENERATOR'S NAME & SITE ADDRESS: ~~Sunoco-Philadelphia~~	GROSS WEIGHT: ☐Tons ☐Yards	
~~3144 Passyunk Avenue~~	TARE WEIGHT:	
~~Philadelphia, PA 19145~~	☒Tons ☐Yards	13.78
GENERATOR'S PHONE: ~~856-881-6895~~	NET WEIGHT: ☒Tons ☐Yards	32.46

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

~~Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material~~

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ Title: ~~Env Consultant~~

Signature: Date and Time:

TRANSPORTER

Company: ~~SJ Transportation Company, INC.~~ Phone Number: ~~(610) 876-3800~~

Address: ~~1176 US rout 40 Woodstown, NJ 08098~~ Truck # and License Plate:

Driver: Charles S. Finlaw JR. SW Haulers Permit #:

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032312

	Date	Time	Scale
In:	9/25/2009	12:31:11	Scale 1
Out:	9/25/2009	12:32:54	P.T.

	Lbs	Tns
Gross:	92480	46.24
Tare:	27560	13.78
Net:	64920	32.46

Manifest: 301606
Vehicle ID: FO5007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	32.46	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

TRACTOR # 007

TRAILER # _____

DRIVER : _____

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106068
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 3011661

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/25/2009
TIME 11:00:00 AM
IN 11:24 OUT 12:25

DELIVER DATE 9/25/2009
TIME 12:00:00 PM
IN 12:32 OUT 12:40

GROSS WT _____
TARE WT _____
NET WT _____

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

Operator Broke the Board on the drivers Side

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

CONTACT : NICK D 215-339-7012

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [signature]
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301605

#27 Tank 270

GLOBAL JOB NUMBER: 111647 ~~101732~~

FACILITY APPROVAL NUMBER: 093100217 ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

AC790 WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.00
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	26.35

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 US rout 40 Woodstown, N.J 08098 Truck # and License Plate: 005 - AK744N, NJ.

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032313

	Date	Time	Scale
In:	9/25/2009	13:48:22	Scale 1
Out:	9/25/2009	13:48:45	P.T.

	Lbs	Tns
Gross:	79100	39.55
Tare:	26000	13.00
Net:	53100	26.55

Manifest: 301605
Vehicle ID: F05005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.55	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

TRACTOR # 005

TRAILER #

DRIVER : [illegible] MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106073
PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301605

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 9/25/2009
TIME 1:00:00 PM
IN 12:35 OUT 1:30

DELIVER DATE 9/25/2009
TIME 2:00:00 PM
IN 1:40 OUT 2:05

GROSS WT 39.55
TARE WT 13.00
NET WT 26.55

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301614

#28 Tank 270

111647

093100217

GLOBAL JOB NUMBER: ~~101732~~ **FACILITY APPROVAL NUMBER:** ~~73100013~~

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Act 90 II 42/81

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☒Tons ☐Yards	13.78
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	2625

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: ~~S J Transportation Company, INC.~~ Phone Number: ~~(610) 876-3600~~

Address: ~~1176 US rout 40 Woodstown, NJ 08098~~ Truck # and License Plate:

Driver: Charles S. Finlaw Jr. SW Haulers Permit #:

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 9-25-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 9-25-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 9/25/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032315

	Date	Time	Scale
In:	9/25/2009	13:53:25	Manual W
Out:	9/25/2009	13:54:00	P.T.

	Lbs	Tns
Gross:	80060	40.03
Tare:	27560	13.78
Net:	52500	26.25

Manifest: 301614
Vehicle ID: F05007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.25	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

TRAILER # _____

DRIVER : _____

1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

PRINTED 9/24/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # _____

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 9/25/2009
TIME 1:00:00 PM
IN 1:00 OUT 1:48

DELIVER DATE 9/25/2009
TIME 2:00:00 PM
IN 1:49 OUT 2:04

GROSS WT _____
TARE WT _____
NET WT _____

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
:
:
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [illegible]
DATE : 9-25-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301615

#29 Tank 270

GLOBAL JOB NUMBER: ~~101732~~ 111647 FACILITY APPROVAL NUMBER: ~~73100013~~ 093100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) ACT 90 # H2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑Tons ☐Yards	13.45
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	30.04

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 US rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: Charles S. Finlaw Jr. (Type or Print Clearly) SW Haulers Permit #: (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-1-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-1-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/1/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032367

	Date	Time	Scale
In:	10/1/2009	10:29:31	Scale 1
Out:	10/1/2009	10:30:29	P.T.

	Lbs	Tns
Gross:	86980	43.49
Tare:	26900	13.45
Net:	60080	30.04

Manifest: 301615
Vehicle ID: FOS012
Act 90 Decal: WH2481r
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	30.04	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

TRACTOR # _____

TRAILER # _____

DRIVER : Chuck Finlaw

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106353
PRINTED 9/30/2009 BOOKED KELDE

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 3011 25

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 10/1/2009
TIME 7:00:00 AM
IN 9:28 OUT 10:19

DELIVER DATE 10/1/2009
TIME 8:00:00 AM
IN 10:2 OUT 10:41

GROSS WT _____
TARE WT _____
NET WT _____

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD _____

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER :
DATE : 10-1-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301613

#30

GLOBAL JOB NUMBER: ~~101732~~ FACILITY APPROVAL NUMBER: 73100013

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT:	
Philadelphia, PA 19145	☑Tons ☐Yards	13.45
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	31.55

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC. Phone Number: (610) 876-3600

Address: 1176 US rout 40 Woodstown, NJ 08098 Truck # and License Plate:

Driver: (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time:

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time:

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10/1/09

TRANSPORTER

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032361

	Date	Time	Scale
In:	10/1/2009	08:53:04	Scale 1
Out:	10/1/2009	08:53:17	P.T.

Manifest: 301616
Vehicle ID: F05012
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

	Lbs	Tns
Gross:	90000	45.00
Tare:	26900	13.45
Net:	63100	31.55

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin

Philadelphia

Materials & Services

Soil Treatment

Storage Area: Area 2
Sample ID: DRC
Comment:

Quantity	Unit
31.55	Tns

Driver:

Facility:

Jay, Clifford H 67116

TRACTOR # 012

TRAILER #

DRIVER : Fosten / Chuck Finlaw

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106353
PRINTED 9/30/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 3011615

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # ____ OUT # ____

PICKUP DATE 10/1/2009
TIME 7:00:00 AM
IN 9:28 OUT 10:19

DELIVER DATE 10/1/2009
TIME 8:00:00 AM
IN 10:27 OUT 10:41

GROSS WT
TARE WT
NET WT 31.55

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

Moved 5 loads of Clean fill

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER :
DATE : 10-1-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301941

#1 TANK 270

GLOBAL JOB NUMBER: 111647 FACILITY APPROVAL NUMBER: 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Act 56 Lett 2481

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	TARE WEIGHT: ☒Tons ☐Yards	1340
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	2685

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Trannsportation Company, INC Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 006 AM 574H

Driver: [signature] (Type or Print Clearly) SW Haulers Permit #: 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10/1/09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10/1/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/1/09

TRANSPORTER

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032362

	Date	Time	Scale
In:	10/1/2009	08:56:24	Scale 1
Out:	10/1/2009	08:56:48	P.T.

	Lbs	Tns
Gross:	80500	40.25
Tare:	26800	13.40
Net:	53700	26.85

Manifest: 301944
Vehicle ID: FOS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.85	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver: M. Cilp

Facility: Jay, Clifford # 67116

TRACTOR # 006

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106358
PRINTED 9/30/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301941

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # _____ OUT # _____

PICKUP DATE 10/1/2009
TIME 11:00:00 AM
IN 6:45 OUT 8:20

DELIVER DATE 10/1/2009
TIME 12:00:00 PM
IN 8:45 OUT 9:15

GROSS WT 80500
TARE WT 26800
NET WT 53700

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

CONTACT : NICK D 215-339-7012

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER [signature] DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : M. Culp
DATE : 10/1/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301942

#22 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret
  24 Middlesex Avenue
  Carteret, NJ 07008
  Ph: 732-541-8909
- ☐ Clean Earth of Maryland
  1469 Oak Ridge Place
  Hagerstown, MD 21740
  Ph: 301-791-6220
- ☐ Clean Earth of New Castle
  94 Pyles Lane
  New Castle, DE 19720
  Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia
  3201 S. 61st Street
  Philadelphia, PA 19153
  Ph: 215-724-5520
- ☐ Clean Earth of West Virginia
  3815 South State Route 2
  Friendly, WV 26146
  Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania
  7 Steel Road East
  Morrisville, PA 19067
  Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Acte # 4H 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Ave	TARE WEIGHT: ☑Tons ☐Yards	13.40
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	22.75

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Company, INC Phone Number: 1-800-524-2552

Address: 1178 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: [illegible]

Driver: Mike Culp SW Haulers Permit #: 2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mike Culp Date and Time: 10/1/09

[signature]

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10/1/09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/1/09

TRANSPORTER

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032368

	Date	Time	Scale
In:	10/1/2009	10:44:23	Scale 1
Out:	10/1/2009	10:45:17	P.T.

	Lbs	Tns
Gross:	72300	36.15
Tare:	26800	13.40
Net:	45500	22.75

Manifest: 301942
Vehicle ID: FOS006
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	22.75	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver: M. Cilp

Facility: Jay Clifford H 67116

TRACTOR # 006

TRAILER #

DRIVER : Foster

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106359
PRINTED 9/30/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301942

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # ____ OUT # ____

PICKUP DATE 10/1/2009
TIME 12:00:00 PM
IN 9:45 OUT 10:25

DELIVER DATE 10/1/2009
TIME 1:00:00 PM
IN 10:45 OUT 11:00

GROSS WT 92,300
TARE WT 46,800
NET WT 45,500

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

GAL LOAD ____

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER ____ DATE ____ CONSIGNEE ____ DATE ____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : M. Culp
DATE : 10/1/09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301943

#33 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret
  24 Middlesex Avenue
  Carteret, NJ 07008
  Ph: 732-541-8909
- ☐ Clean Earth of Maryland
  1469 Oak Ridge Place
  Hagerstown, MD 21740
  Ph: 301-791-6220
- ☐ Clean Earth of New Castle
  94 Pyles Lane
  New Castle, DE 19720
  Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia
  3201 S. 61st Street
  Philadelphia, PA 19153
  Ph: 215-724-5520
- ☐ Clean Earth of West Virginia
  3815 South State Route 2
  Friendly, WV 26146
  Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania
  7 Steel Road East
  Morrisville, PA 19067
  Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Act 90# WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☑Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	24.33

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Trannsportation Company, INC Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: AK 744N. NJ

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-1-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-1-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/1/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032363

	Date	Time	Scale
In:	10/1/2009	08:57:43	Scale 1
Out:	10/1/2009	08:58:19	P.T.

	Lbs	Tns
Gross:	74660	37.33
Tare:	26000	13.00
Net:	48660	24.33

Manifest: 301943
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	24.33	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver: Mark Elfelt

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER :

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106356
PRINTED 9/30/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301943

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT # 005

PICKUP DATE 10/1/2009
TIME 9:00:00 AM
IN 7.00 OUT 8:40

DELIVER DATE 10/1/2009
TIME 10:00:00 AM
IN 8:50 OUT 9:10

GROSS WT 31.33
TARE WT 13.00
NET WT 24.33

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elder
DATE : 10-1-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301944

#34 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

ACT90 # WH2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	26.19

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: S.J Trannsportation Company, INC Phone Number: 1-800-524-2552

Address: 1178 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744N - NJ.

Driver: MARK ELKHILL SW Haulers Permit #: WH2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 10-1-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 10-1-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10/1/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032369

	Date	Time	Scale
In:	10/1/2009	11:16:58	Scale 1
Out:	10/1/2009	11:19:01	P.T.

	Lbs	Tns
Gross:	78380	39.19
Tare:	26000	13.00
Net:	52380	26.19

Manifest: 301944
Vehicle ID: FDS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.19	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER : F. Etienne

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106357
PRINTED 9/30/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301944

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA, PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA, PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT #005

PICKUP DATE 10/1/2009
TIME 10:00:00 AM
IN 9:30 OUT 11:05

DELIVER DATE 10/1/2009
TIME 11:00:00 AM
IN 11:15 OUT 11:25

GROSS WT 39.19
TARE WT 13.00
NET WT 26.19

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA, PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 10-1-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301945

#35 Tank #270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	21.63

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Trannsportation Company, INC Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744H-N.J.

Driver: MARK ELKIN SW Haulers Permit #: SWH 2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 10-6-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 10-6-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10/6/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032439

	Date	Time	Scale
In:	10/6/2009	10:36:35	Scale 1
Out:	10/6/2009	10:37:02	P.T.

	Lbs	Tns
Gross:	69260	34.63
Tare:	26000	13.00
Net:	43260	21.63

Manifest: 301945
Vehicle ID: FOS005
Act 90 Decal: WH2401
Customer: S & J TRANSPORTATION CO.

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	21.63	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: Mark Elliott

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # _____

DRIVER : [illegible] - MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106608
PRINTED 10/5/2009 BOOKED KELDE

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301945

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT #005

PICKUP DATE 10/6/2009
TIME 9:00:00 AM
IN 9:05 OUT 10:20

DELIVER DATE 10/6/2009
TIME 10:00:00 AM
IN 10:30 OUT 10:50

GROSS WT 54.63
TARE WT ~~54.63~~ 1500
NET WT 21.63

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY
DIRT

GAL LOAD _____

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkhill
DATE : 10-6-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301940

#36 Tank 270

GLOBAL JOB NUMBER: 111647 FACILITY APPROVAL NUMBER: 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Auto # WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145 856-881-6895	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☐Tons ☐Yards	13.00
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	26.67

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: S.J Trannsportation Company, INC Phone Number: 1-800-524-2552

Address: 1176 US Rout 40 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744N - N.J.

Driver: MARK EIKHILL (Type or Print Clearly) SW Haulers Permit #: WH2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 10-6-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 10-6-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032427

	Date	Time	Scale
In:	10/6/2009	08:34:58	Scale 1
Out:	10/6/2009	08:35:51	P.T.

	Lbs	Tns
Gross:	79340	39.67
Tare:	26000	13.00
Net:	53340	26.67

Manifest: 301340
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	26.67	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: Mark Elkins

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER : Peter

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106607
PRINTED 10/5/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301940

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/6/2009
TIME 7:00:00 AM
IN 7:00 OUT 8:20

DELIVER DATE 10/6/2009
TIME 8:00:00 AM
IN 8:30 OUT 8:45

GROSS WT 39.67
TARE WT 13.00
NET WT 26.67

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY

DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 10-6-08

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301953

#37 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret
  24 Middlesex Avenue
  Carteret, NJ 07008
  Ph: 732-541-8909
- ☐ Clean Earth of Maryland
  1469 Oak Ridge Place
  Hagerstown, MD 21740
  Ph: 301-791-6220
- ☐ Clean Earth of New Castle
  94 Pyles Lane
  New Castle, DE 19720
  Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia
  3201 S. 61st Street
  Philadelphia, PA 19153
  Ph: 215-724-5520
- ☐ Clean Earth of West Virginia
  3815 South State Route 2
  Friendly, WV 26146
  Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania
  7 Steel Road East
  Morrisville, PA 19067
  Ph: 215-428-1700

Non-Hazardous Material Manifest

ALT 90 # WH 2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐ Tons ☐ Yards	
	TARE WEIGHT: ☒ Tons ☐ Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒ Tons ☐ Yards	23.05

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856-769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005- AK744N- N.J.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-7-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-9-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/7/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032471

	Date	Time	Scale
In:	10/7/2009	08:34:32	Scale 1
Out:	10/7/2009	08:38:12	P.T.

	Lbs	Tns
Gross:	72100	36.05
Tare:	26000	13.00
Net:	46100	23.05

Manifest: 301953
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.05	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mal Elkl

Facility: Jay, Clifford H 67116

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106651
PRINTED 10/6/2009 BOOKED KELDE

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301953

SHIPPER:	CONSIGNEE:
[SUNPHI16] SUNOCO, INC. ACCOUNTS PAYABLE 1735 MARKET STREET, SUITE LL PHILADELPHIA,PA 19103-7583 Nick Di Joseph (215) 339-7012	[CLEPHI02] CLEAN EARTH OF PHILADELPHIA 3201 SOUTH 61ST STREET PHILADELPHIA,PA 19153 ( ) -

TRAILER TYPE: TRIAXL	PICKUP DATE 10/7/2009	DELIVER DATE 10/7/2009	
UNIT: IN #005 OUT #005	TIME 7:00:00 AM IN 7:00 OUT 8:20	TIME 8:00:00 AM IN 8:35 OUT 8:50	GROSS WT 36.05 TARE WT 13.00 NET WT 23.05

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):	COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

Dirty

Dirt

GAL LOAD _____

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 10-7-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301949

#38 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 # WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	23.59

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: BJ Transportation Co., Inc Phone Number: 856-769-2741

Address: 1176 US Route 40 Woodstown, NJ 08098 Truck # and License Plate: 005- AK744M- NJ.

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-6-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-6-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/6/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032455

	Date	Time	Scale
In:	10/6/2009	12:31:54	Scale 1
Out:	10/6/2009	12:32:06	P.T.

	Lbs	Tns
Gross:	73180	36.59
Tare:	26000	13.00
Net:	47180	23.59

Manifest: 301949
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.59	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver:

Facility:
Jay, Clifford H 67116

005

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106609
PRINTED 10/5/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301949

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT #005

PICKUP DATE 10/6/2009
TIME 10:30:00 AM
IN 11:05 OUT 12:10

DELIVER DATE 10/6/2009
TIME 11:30:00 AM
IN 12:23 OUT 12:43

GROSS WT 36.59
TARE WT 13.00
NET WT 23.59

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION: Dirty Dirt

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [illegible]
DATE : 10-6-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301950

#39 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Act 90 # n 42481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	21.06

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856-769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005- AK744N- NJ.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-6-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-6-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/6/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032460

	Date	Time	Scale
In:	10/6/2009	13:49:01	Manual W
Out:	10/6/2009	13:49:17	P.T.

	Lbs	Tns
Gross:	68120	34.06
Tare:	26000	13.00
Net:	42120	21.06

Manifest: 301950
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	21.06	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: Mark Elk

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER #

DRIVER : MARK

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106610
PRINTED 10/5/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301 950

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/6/2009
TIME 12:00:00 PM
IN 12:50 OUT 1:30

DELIVER DATE 10/6/2009
TIME 1:00:00 PM
IN 1:40 OUT 1:55

GROSS WT 34.06
TARE WT 13.00
NET WT 21.06

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:
DIRTY
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark
DATE : 10-6-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301952

#40 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT90 # WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	21.25

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856-789-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005 - AIC 744H-NJ.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-6-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-6-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/6/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032463

	Date	Time	Scale
In:	10/6/2009	15:05:36	Scale 1
Out:	10/6/2009	15:06:37	P.T.

	Lbs	Tns
Gross:	68500	34.25
Tare:	26000	13.00
Net:	42500	21.25

Manifest: 301952
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	21.25	Tns

Storage Area: Area 4
Sample ID: DRS
Comment:

Driver: Mark Elkel

Facility: Jay, Clifford 67116

TRACTOR # 005

TRAILER # —

DRIVER : Mark

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106611
PRINTED 10/5/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301952

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/6/2009
TIME 1:30:00 PM
IN 2.15 OUT 2.55

DELIVER DATE 10/6/2009
TIME 2:30:00 PM
IN 3.05 OUT 3.15

GROSS WT 34.25
TARE WT 13.00
NET WT 21.25 T

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRT
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000106-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

(OVER)

CONTACT : NICK D 215-339-7012

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 10-6-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301951

#41 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

ACT 90 WH 2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
Sunoco Inc.		
3144 Passyunk Ave	TARE WEIGHT: ☒Tons ☐Yards	13.78
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	18.03

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856-769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK 744N - NJ.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Mark Elkhill Date and Time: 10-7-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Mark Elkhill Date and Time: 10-9-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10/7/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032479

	Date	Time	Scale
In:	10/7/2009	11:55:01	Scale 1
Out:	10/7/2009	11:58:23	P.T.

	Lbs	Tns
Gross:	63620	31.81
Tare:	27560	13.78
Net:	36060	18.03

Manifest: 301951
Vehicle ID: FOS007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	18.03	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Elkhill

Facility: [signature]
Jay, Clifford # 67116

TRACTOR # 005

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106652
PRINTED 10/6/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 30[illegible]1951

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT #005

PICKUP DATE 10/7/2009
TIME 9:00:00 AM
IN 11:00 OUT 11:45

DELIVER DATE 10/7/2009
TIME 10:00:00 AM
IN 11:55 OUT 12:10

GROSS WT 31.81
TARE WT 12.78
NET WT 19.83

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [illegible]
DATE : 10-7-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301948

#42 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 03100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

AC790 WH 2481

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	TARE WEIGHT: ☒Tons ☐Yards	12.78
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	25.59

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: Date and Time:

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 007- AM939H - NJ

Driver: MARK ELKHILL SW Haulers Permit #: WH 2481

(Type or Print Clearly) (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 10-7-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 10-7-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10/7/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032481

	Date	Time	Scale
In:	10/7/2009	13:09:12	Scale 1
Out:	10/7/2009	13:10:37	P.T.

	Lbs	Tns
Gross:	78740	39.37
Tare:	27560	13.78
Net:	51180	25.59

Manifest: 301948
Vehicle ID: FDS007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	25.59	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mal Elli

Facility: Jay, Clifford H #7116

TRACTOR # 007

TRAILER # —

DRIVER : Fath

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106653
PRINTED 10/6/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301948

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 007 OUT # 007

PICKUP DATE 10/7/2009
TIME 10:30:00 AM
IN 12:30 OUT 1:00

DELIVER DATE 10/7/2009
TIME 11:30:00 AM
IN 1:10 OUT 1:20

GROSS WT 39.37
TARE WT 13.78
NET WT 25.59

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 10-7-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

#43 270 Tank

Manifest # 301956

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACTGO # NH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.78
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	25.37

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ CHARLES BARKSDALE Title: ~~Env Consultant~~ MANAGER

Signature: Date and Time: 10/7/09

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 007- AM939H - NJ

Driver: MARK ELKILL (Type or Print Clearly) SW Haulers Permit #: W14 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Date and Time: 10-7-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Date and Time: 10-7-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: Date and Time: 10/7/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032483

	Date	Time	Scale
In:	10/7/2009	14:23:10	Scale 1
Out:	10/7/2009	14:23:25	P.T.

	Lbs	Tns
Gross:	78300	39.15
Tare:	27560	13.78
Net:	50740	25.37

Manifest: 301956
Vehicle ID: FOS007
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	25.37	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: [signature]

Facility: [signature]
Jay, Clifford H 67116

TRAILER # —

DRIVER : [illegible]

1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

PRINTED 10/6/2009 BOOKED KELDE

NJ DEP PERMIT #

DECAL #

MANIFEST # 301956

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 007 OUT # 007

PICKUP DATE 10/7/2009
TIME 12:00:00 PM
IN 1:30 OUT 2:10

DELIVER DATE 10/7/2009
TIME 1:00:00 PM
IN 2:20 OUT 2:35

GROSS WT 39,15
TARE WT 12,58
NET WT 25,57

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [illegible]
DATE : 10-7-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

#44 Tank 270

Manifest # 301955

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

ACT 90 # WH2481

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
~~Sunoco Inc.~~ ~~3144 Passyunk Ave~~ ~~Philadelphia, PA 19145~~	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	27.94

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ CHARLES BARKSDALE Title: ~~Env Consultant~~ MANAGER

Signature: [signature] Date and Time: 10/7/09

TRANSPORTER

Company: ~~GJ Transportation Co., Inc~~ Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005 AK744N-NJ.

Driver: MARK ELKHILL (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-8-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-8-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/8/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032491

	Date	Time	Scale
In:	10/8/2009	08:52:27	Scale 1
Out:	10/8/2009	08:54:31	P.T.

	Lbs	Tns
Gross:	73880	36.94
Tare:	26000	13.00
Net:	47880	23.94

Manifest: 301955
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.94	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver: Mark Elk

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER : Pete

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106753
PRINTED 10/7/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301955

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/8/2009
TIME 7:00:00 AM
IN 7:00 OUT 8:35

DELIVER DATE 10/8/2009
TIME 8:00:00 AM
IN 8:45 OUT 9:05

GROSS WT 36.94
TARE WT 13.00
NET WT 23.94

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

Dirt
Dirt

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

CONTACT : NICK D 215-339-7012

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elkins
DATE : 10-8-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301954

#45 TANK 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) ACT 90 WH2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☑Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	23.01

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ CHARLES BARKSDALE Title: Env ~~Consultant~~ MANAGER

Signature: [signature] Date and Time: 10/7/09

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005-AK744N-N.J.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-8-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-8-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/8/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032494

	Date	Time	Scale
In:	10/8/2009	11:15:31	Scale 1
Out:	10/8/2009	11:16:01	P.T.

	Lbs	Tns
Gross:	72020	36.01
Tare:	26000	13.00
Net:	46020	23.01

Manifest: 301954
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	23.01	Tns

Storage Area: Area 3
Sample ID: DRS
Comment:

Driver: Mark Elkel

Facility: Jay, Clifford H 67116

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # [illegible]
PRINTED 10/7/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301954

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/8/2009
TIME 9:00:00 AM
IN 9:20 OUT 11:00

DELIVER DATE 10/8/2009
TIME 10:00:00 AM
IN 11:10 OUT 11:25

GROSS WT 36.01
TARE WT 13.00
NET WT 23.01

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY
DIRT

GAL LOAD _____

ORDER REF #'S:
REF : SPD# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [signature]
DATE : 10-8-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301957

#46 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly) Act 90th WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☑Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	22.55

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ Charles Barksdale Title: Env ~~Consultant~~ Manager

Signature: [signature] Date and Time: 10/7/09

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005- AK744N-NJ

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-8-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-8-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/8/09

GENERATOR

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032496

	Date	Time	Scale
In:	10/8/2009	12:49:30	Scale 1
Out:	10/8/2009	12:49:48	P.T.

	Lbs	Tns
Gross:	71100	35.55
Tare:	26000	13.00
Net:	45100	22.55

Manifest: 301957
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	22.55	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver: Mark Elkel

Facility: Jay, Clifford W 67116

tractor 005

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106755
PRINTED 10/7/2009 BOOKED DWIGG

NJ DEP PERMIT # _____

DECAL # _____

MANIFEST # 301957

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/8/2009
TIME 11:00:00 AM
IN 11:40 OUT 12:35

DELIVER DATE 10/8/2009
TIME 12:00:00 PM
IN 12:45 OUT 1:00

GROSS WT 35.55
TARE WT 13.00
NET WT 22.55

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:

DIRTY DIRT

GAL LOAD _____

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [signature]
DATE : 10-8-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301961

#47 TANK 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of West Virginia, 3815 South State Route 2, Friendly, WV 26146, Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc. 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☑ Tons ☐ Yards	38.33
	TARE WEIGHT: ☑ Tons ☐ Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑ Tons ☐ Yards	25.33

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ Charles Barksdale Title: Env ~~Consultant~~ Manager

Signature: [signature] Date and Time: 10/7/09

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005- AK 744N - N.J.

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-8-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-8-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/8/09

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032498

	Date	Time	Scale
In:	10/8/2009	14:17:23	Scale 1
Out:	10/8/2009	14:18:28	P.T.

	Lbs	Tns
Gross:	76660	38.33
Tare:	26000	13.00
Net:	50660	25.33

Manifest: 301961
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	25.33	Tns

Storage Area: Area 2
Sample ID: DRS
Comment:

Driver: Mal Elkh

Facility: Schmidt, Joe

TRACTOR # 005

TRAILER # —

DRIVER : [illegible]

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106756
PRINTED 10/7/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301961

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT #005

PICKUP DATE 10/8/2009
TIME 1:00:00 PM
IN 1:15 OUT 2:05

DELIVER DATE 10/8/2009
TIME 2:00:00 PM
IN 2:15 OUT 2:30

GROSS WT 28.33
TARE WT 13.00
NET WT 25.33

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

DESCRIPTION:
DIRT
DIRT

GAL LOAD

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : [illegible]
DATE : 10-8-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

CLEANEARTH
treating the planet right

Manifest # 301960

48 Tank 270

GLOBAL JOB NUMBER: 111647 **FACILITY APPROVAL NUMBER:** 93100217

Please Check One:

- ☐ Clean Earth of Carteret
  24 Middlesex Avenue
  Carteret, NJ 07008
  Ph: 732-541-8909
- ☐ Clean Earth of Maryland
  1469 Oak Ridge Place
  Hagerstown, MD 21740
  Ph: 301-791-6220
- ☐ Clean Earth of New Castle
  94 Pyles Lane
  New Castle, DE 19720
  Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia
  3201 S. 61st Street
  Philadelphia, PA 19153
  Ph: 215-724-5520
- ☐ Clean Earth of West Virginia
  3815 South State Route 2
  Friendly, WV 26146
  Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania
  7 Steel Road East
  Morrisville, PA 19067
  Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Act 90 WH 2481

GENERATOR'S NAME & SITE ADDRESS: Sunoco Inc 3144 Passyunk Ave Philadelphia, PA 19145	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☒Tons ☐Yards	13.00
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☒Tons ☐Yards	29.36

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: ~~Glenn Tashjian~~ Charles Barksdale Title: Env ~~Consultant~~ Manager

Signature: [signature] Date and Time: 10/7/09

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856 769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005 - AK744N-NJ

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-13-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-13-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/13/09

TRANSPORTER

106989

TRACTOR # 005

TRAILER #

DRIVER : Foster

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106989
PRINTED 10/12/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301960

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN # 005 OUT # 005

PICKUP DATE 10/13/2009
TIME 8:00:00 AM
IN 9:45 OUT 10:35

DELIVER DATE 10/13/2009
TIME 9:00:00 AM
IN 10:45 OUT 11:00

GROSS WT 42.36
TARE WT 13.00
NET WT 29.36

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

GAL LOAD

DESCRIPTION:

DIRY1
DIRT

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009
:
:
:

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

CONTACT : NICK D 215-339-7012

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elliott
DATE : 10-13-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032525

	Date	Time	Scale
In:	10/13/2009	10:45:01	Scale 1
Out:	10/13/2009	10:48:32	P.T.

	Lbs	Tns
Gross:	84720	42.36
Tare:	26000	13.00
Net:	58720	29.36

Manifest: 301960
Vehicle ID: FOS005
Act 90 Decal: WH2481
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	29.36	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mal Elle

Facility: Jay, Clifford H 67116

CLEANEARTH
treating the planet right

Manifest # 301617

#49 TANK 270

GLOBAL JOB NUMBER: ~~101732~~ 11647 **FACILITY APPROVAL NUMBER:** ~~73100013~~ 73100217

Please Check One:

- ☐ Clean Earth of Carteret
  24 Middlesex Avenue
  Carteret, NJ 07008
  Ph: 732-541-8909
- ☐ Clean Earth of Maryland
  1469 Oak Ridge Place
  Hagerstown, MD 21740
  Ph: 301-791-6220
- ☐ Clean Earth of New Castle
  94 Pyles Lane
  New Castle, DE 19720
  Ph: 302-427-6633
- ☐ Other
- ☑ Clean Earth of Philadelphia
  3201 S. 61st Street
  Philadelphia, PA 19153
  Ph: 215-724-5520
- ☐ Clean Earth of West Virginia
  3815 South State Route 2
  Friendly, WV 26146
  Ph: 304-652-8580
- ☐ Clean Earth of Southeast Pennsylvania
  7 Steel Road East
  Morrisville, PA 19067
  Ph: 215-428-1700

Non-Hazardous Material Manifest

(Type or Print Clearly)

Act 70 #42481

GENERATOR'S NAME & SITE ADDRESS: Sunoco-Philadelphia	GROSS WEIGHT: ☐Tons ☐Yards	
3144 Passyunk Avenue	TARE WEIGHT: ☑Tons ☐Yards	13.00
Philadelphia, PA 19145		
GENERATOR'S PHONE: 856-881-6895	NET WEIGHT: ☑Tons ☐Yards	33.81

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non DOT Regulated/RCRA Non-Hazardous Petroleum Hydrocarbon Cont. Material

GENERATOR'S CERTIFICATION – Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Glenn Tashjian Title: Env Consultant

Signature: [signature] Date and Time:

TRANSPORTER

Company: SJ Transportation Co., Inc Phone Number: 856-769-2741

Address: 1176 US Route 49 Woodstown, NJ 08098 Truck # and License Plate: 005-AK744N-NJ

Driver: MARK Elkhill (Type or Print Clearly) SW Haulers Permit #: WH 2481 (applicable state permit #)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 10-13-09

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 10-13-09

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 10/13/09

TRANSPORTER

Clean Earth of Philadelphia
3201 South 61st Street
Philadelphia, PA 19153
Ph: (215) 724-5520 Fax: (215) 724-2939

Ticket: 310000032526

	Date	Time	Scale
In:	10/13/2009	12:27:56	Scale 1
Out:	10/13/2009	12:28:51	P.T.

	Lbs	Tns
Gross:	93620	46.81
Tare:	26000	13.00
Net:	67620	33.81

Manifest: 301617
Vehicle ID: F05005
Act 90 Decal: WH2401
Customer: S & J TRANSPORTATION CO.

Facility Approval#: 093100217
Job Name: Sunoco-Philadelphia
Job Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Generator: Sunoco
Gen Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Origin	Materials & Services	Quantity	Unit
Philadelphia	Soil Treatment	33.81	Tns

Storage Area: Area 1
Sample ID: DRS
Comment:

Driver: Mark Eckhart

Facility: Jay, Clifford H 67116

TRACTOR # 005

TRAILER # —

DRIVER : Foster

SJ TRANSPORTATION CO., INC.
1176 U.S. ROUTE 40
P.O. BOX 169
WOODSTOWN, NJ 08098
(856) 769-2741
WWW.SJTRANSPORTATION.COM
EPA ID: NJD071629976

ORDER # 106990
PRINTED 10/12/2009 BOOKED DWIGG

NJ DEP PERMIT #

DECAL #

MANIFEST # 301617

SHIPPER:

[SUNPHI16] SUNOCO, INC.
ACCOUNTS PAYABLE
1735 MARKET STREET, SUITE LL
PHILADELPHIA,PA 19103-7583

Nick Di Joseph
(215) 339-7012

CONSIGNEE:

[CLEPHI02] CLEAN EARTH OF PHILADELPHIA
3201 SOUTH 61ST STREET

PHILADELPHIA,PA 19153

( ) -

TRAILER TYPE: TRIAXL
UNIT:
IN #005 OUT #005

PICKUP DATE 10/13/2009
TIME 9:00:00 AM
IN 11:15 OUT 12:20

DELIVER DATE 10/13/2009
TIME 10:00:00 AM
IN 12:30 OUT 12:45

GROSS WT 46.81
TARE WT 13.00
NET WT 33.81

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

COMMENTS (EXPLAIN DELAY AND DESCREPANCIES):

GAL LOAD

DESCRIPTION:

Dirty Dirt

ORDER REF #'S:
REF : SPO# 09-PT2990
REF : 09-000105-009

SPECIAL INSTRUCTIONS:
load max tonnage / call ops if you are delayed / drivers must have nomex suite / high cuff gloves / hard hat with goggles / h2s

BILL TO:

SUNOCO, INC.
ACCOUNTS PAYABLE

PHILADELPHIA,PA 19103-7583

Nick Di Joseph (215) 339-7012

CONTACT : NICK D 215-339-7012

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

SHIPPER _____ DATE _____ CONSIGNEE _____ DATE _____

********** VISIT US ON THE WEB AT: WWW.SJTRANSPORTATION.COM **********

PERSONNEL ARE AVAILABLE 24 HOURS/DAY WITH KNOWLEDGE OF THE HAZARDS OF THE MATERIAL AND EMERGENCY RESPONSE INFORMATION OR WHO HAS ACCESS TO A PERSON WITH THAT KNOWLEDGE.

CARRIER : SJ TRANSPORTATION CO., INC. (800) 524-2552
PER : Mark Elliott
DATE : 10-13-09

WHITE COPY - S-J, YELLOW COPY - DRIVER, PINK COPY - TSDF, GOLD COPY - CUSTOMER

Stantec

APPENDIX B
LABORATORY ANALYTICAL REPORTS

GP 270 Tank
Sunoco – Philadelphia Refinery
Philadelphia, Pennsylvania

One Team. Infinite Solutions.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

ANALYTICAL RESULTS

Prepared for:

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

484-875-3075

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

October 01, 2009

Project: Philadelphia Refinery

Samples arrived at the laboratory on Wednesday, September 23, 2009. The PO# for this group is PHILADELPHIA. The group number for this submittal is 1163143.

Client Sample Description	Lancaster Labs (LLI) #
S-1 (4.0-4.5) Grab Soil Sample	5784781
S-2 (4.0-4.5) Grab Soil Sample	5784782
S-3 (3.0-3.5) Grab Soil Sample	5784783
S-4 (4.0-4.5) Grab Soil Sample	5784784
S-5 (4.0-4.5) Grab Soil Sample	5784785

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Sunoco c/o Stantec	Attn: Brian Stoudt
ELECTRONIC COPY TO	Sunoco c/o Stantec	Attn: Jennifer Menges

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

REVISED

Questions? Contact your Client Services Representative
Loran A Carter at (717) 656-2300

Respectfully Submitted,

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: S-1 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784781
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/21/2009 14:05 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S1404

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		29	41.05
02405	Ethylbenzene	100-41-4	N.D.		59	41.05
02405	Isopropylbenzene	98-82-8	N.D.		59	41.05
02405	Naphthalene	91-20-3	180	J	59	41.05
02405	Toluene	108-88-3	N.D.		59	41.05
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		59	41.05
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		59	41.05
02405	Xylene (Total)	1330-20-7	N.D.		59	41.05
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	430		48	1
07804	Benzo(a)anthracene	56-55-3	1,400		48	1
07804	Benzo(a)pyrene	50-32-8	1,700		48	1
07804	Benzo(b)fluoranthene	205-99-2	2,200		48	1
07804	Benzo(g,h,i)perylene	191-24-2	1,400		48	1
07804	Chrysene	218-01-9	1,400		48	1
07804	Fluorene	86-73-7	210	J	48	1
07804	Indeno(1,2,3-cd)pyrene	193-39-5	1,200		48	1
07804	Phenanthrene	85-01-8	1,100		48	1
07804	Pyrene	129-00-0	1,900		48	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	73.1		0.858	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	30.1		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092671AA	09/24/2009 16:44	Emily R Styer	41.05
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200926719234	09/21/2009 14:05	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09267SLA026	09/25/2009 02:42	Brian K Graham	1
07806	BNA Soil Extraction	SW-846 3550B	1	09267SLA026	09/24/2009 14:40	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-1 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784781
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/21/2009 14:05 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S1404

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092675708002	09/25/2009 04:12	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092675708002	09/24/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09267820002B	09/24/2009 15:52	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: S-2 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784782
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/21/2009 14:20 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S2404

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		25	37.48
02405	Ethylbenzene	100-41-4	N.D.		51	37.48
02405	Isopropylbenzene	98-82-8	N.D.		51	37.48
02405	Naphthalene	91-20-3	N.D.		51	37.48
02405	Toluene	108-88-3	N.D.		51	37.48
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		51	37.48
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		51	37.48
02405	Xylene (Total)	1330-20-7	N.D.		51	37.48
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	110	J	45	1
07804	Benzo(a)anthracene	56-55-3	320		45	1
07804	Benzo(a)pyrene	50-32-8	360		45	1
07804	Benzo(b)fluoranthene	205-99-2	410		45	1
07804	Benzo(g,h,i)perylene	191-24-2	290		45	1
07804	Chrysene	218-01-9	340		45	1
07804	Fluorene	86-73-7	62	J	45	1
07804	Indeno(1,2,3-cd)pyrene	193-39-5	250		45	1
07804	Phenanthrene	85-01-8	270		45	1
07804	Pyrene	129-00-0	440		45	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	47.1		0.815	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	26.4		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092671AA	09/24/2009 17:07	Emily R Styer	37.48
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200926719234	09/21/2009 14:20	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09267SLA026	09/25/2009 03:54	Brian K Graham	1
07806	BNA Soil Extraction	SW-846 3550B	1	09267SLA026	09/24/2009 14:40	Doreen K Robles	1

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-2 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784782
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/21/2009 14:20 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S2404

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092675708002	09/25/2009 04:34	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092675708002	09/24/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09267820002B	09/24/2009 15:52	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: S-3 (3.0-3.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784783
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/21/2009 14:30 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S3303

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		41	53.76
02405	Ethylbenzene	100-41-4	N.D.		82	53.76
02405	Isopropylbenzene	98-82-8	N.D.		82	53.76
02405	Naphthalene	91-20-3	410	J	82	53.76
02405	Toluene	108-88-3	410	J	82	53.76
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		82	53.76
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		82	53.76
02405	Xylene (Total)	1330-20-7	N.D.		82	53.76
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	4,700		100	1
07804	Benzo(a)anthracene	56-55-3	6,400		100	1
07804	Benzo(a)pyrene	50-32-8	5,100		100	1
07804	Benzo(b)fluoranthene	205-99-2	7,000		100	1
07804	Benzo(g,h,i)perylene	191-24-2	3,400		100	1
07804	Chrysene	218-01-9	7,100		100	1
07804	Fluorene	86-73-7	4,100		100	1
07804	Indeno(1,2,3-cd)pyrene	193-39-5	2,800		100	1
07804	Phenanthrene	85-01-8	11,000		100	1
07804	Pyrene	129-00-0	15,000		510	5

The GC/MS semivolatile internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	264		0.892	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	34.7		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: S-3 (3.0-3.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784783
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/21/2009 14:30 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S3303

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092671AA	09/24/2009 17:30	Emily R Styer	53.76
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200926719234	09/21/2009 14:30	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09267SLA026	09/25/2009 04:18	Brian K Graham	1
07804	PAHs by 8270	SW-846 8270C	1	09267SLA026	09/25/2009 05:55	Brian K Graham	5
07806	BNA Soil Extraction	SW-846 3550B	1	09267SLA026	09/24/2009 14:40	Doreen K Robles	1
06955	Lead	SW-846 6010B	1	092675708002	09/25/2009 04:37	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092675708002	09/24/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09267820002B	09/24/2009 15:52	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: S-4 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784784
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/22/2009 08:00 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S4404

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		35	48.45
02405	Ethylbenzene	100-41-4	N.D.		70	48.45
02405	Isopropylbenzene	98-82-8	N.D.		70	48.45
02405	Naphthalene	91-20-3	N.D.		70	48.45
02405	Toluene	108-88-3	N.D.		70	48.45
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		70	48.45
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		70	48.45
02405	Xylene (Total)	1330-20-7	N.D.		70	48.45
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	230	J	48	1
07804	Benzo(a)anthracene	56-55-3	520		48	1
07804	Benzo(a)pyrene	50-32-8	590		48	1
07804	Benzo(b)fluoranthene	205-99-2	690		48	1
07804	Benzo(g,h,i)perylene	191-24-2	470		48	1
07804	Chrysene	218-01-9	610		48	1
07804	Fluorene	86-73-7	160	J	48	1
07804	Indeno(1,2,3-cd)pyrene	193-39-5	410		48	1
07804	Phenanthrene	85-01-8	1,100		48	1
07804	Pyrene	129-00-0	930		48	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	20.7		0.861	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	30.3		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092671AA	09/24/2009 18:17	Emily R Styer	48.45
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200926719234	09/22/2009 08:00	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09267SLA026	09/25/2009 04:42	Brian K Graham	1
07806	BNA Soil Extraction	SW-846 3550B	1	09267SLA026	09/24/2009 14:40	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-4 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784784
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/22/2009 08:00 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S4404

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092675708002	09/25/2009 04:48	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092675708002	09/24/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09267820002B	09/24/2009 15:52	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Sample Description: S-5 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784785
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/22/2009 08:35 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S5404

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		31	45.87
02405	Ethylbenzene	100-41-4	N.D.		61	45.87
02405	Isopropylbenzene	98-82-8	N.D.		61	45.87
02405	Naphthalene	91-20-3	130	J	61	45.87
02405	Toluene	108-88-3	71	J	61	45.87
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		61	45.87
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		61	45.87
02405	Xylene (Total)	1330-20-7	N.D.		61	45.87
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	95	J	45	1
07804	Benzo(a)anthracene	56-55-3	230		45	1
07804	Benzo(a)pyrene	50-32-8	260		45	1
07804	Benzo(b)fluoranthene	205-99-2	340		45	1
07804	Benzo(g,h,i)perylene	191-24-2	230		45	1
07804	Chrysene	218-01-9	260		45	1
07804	Fluorene	86-73-7	47	J	45	1
07804	Indeno(1,2,3-cd)pyrene	193-39-5	210	J	45	1
07804	Phenanthrene	85-01-8	210	J	45	1
07804	Pyrene	129-00-0	330		45	1
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	28.9		0.802	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	25.2		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092671AA	09/24/2009 18:40	Emily R Styer	45.87
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200926719234	09/22/2009 08:35	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09267SLA026	09/25/2009 05:06	Brian K Graham	1
07806	BNA Soil Extraction	SW-846 3550B	1	09267SLA026	09/24/2009 14:40	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-5 (4.0-4.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5784785
LLI Group # 1163143
PA

Project Name: Philadelphia Refinery

Collected: 09/22/2009 08:35 by BS

Account Number: 11183

Submitted: 09/23/2009 17:00
Reported: 10/01/2009 at 11:26
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S5404

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092675708002	09/25/2009 04:52	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092675708002	09/24/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09267820002B	09/24/2009 15:52	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec Group Number: 1163143
Reported: 10/01/09 at 11:26 AM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Q092671AA	Sample number(s): 5784781-5784785							
Benzene	N.D.	25.	ug/kg	93	91	80-120	2	30
Ethylbenzene	N.D.	50.	ug/kg	94	92	80-120	2	30
Isopropylbenzene	N.D.	50.	ug/kg	91	91	76-120	0	30
Naphthalene	N.D.	50.	ug/kg	79	81	59-123	2	30
Toluene	N.D.	50.	ug/kg	95	93	80-120	1	30
1,2,4-Trimethylbenzene	N.D.	50.	ug/kg	91	89	79-120	2	30
1,3,5-Trimethylbenzene	N.D.	50.	ug/kg	90	88	78-120	2	30
Xylene (Total)	N.D.	50.	ug/kg	94	95	80-120	0	30
Batch number: 09267SLA026	Sample number(s): 5784781-5784785							
Anthracene	N.D.	33.	ug/kg	91		76-112		
Benzo(a)anthracene	N.D.	33.	ug/kg	96		73-112		
Benzo(a)pyrene	N.D.	33.	ug/kg	96		69-122		
Benzo(b)fluoranthene	N.D.	33.	ug/kg	115		61-127		
Benzo(g,h,i)perylene	N.D.	33.	ug/kg	87		65-122		
Chrysene	N.D.	33.	ug/kg	91		76-113		
Fluorene	N.D.	33.	ug/kg	96		75-116		
Indeno(1,2,3-cd)pyrene	N.D.	33.	ug/kg	88		64-119		
Phenanthrene	N.D.	33.	ug/kg	91		77-113		
Pyrene	N.D.	33.	ug/kg	91		75-115		
Batch number: 092675708002	Sample number(s): 5784781-5784785							
Lead	N.D.	0.600	mg/kg	104		85-114		
Batch number: 09267820002B	Sample number(s): 5784781-5784785							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 09267SLA026	Sample number(s): 5784781-5784785 UNSPK: 5784781								
Anthracene	96	97	48-134	1	30				
Benzo(a)anthracene	92	101	37-148	5	30				
Benzo(a)pyrene	81	84	35-150	2	30				
Benzo(b)fluoranthene	74	82	23-156	4	30				
Benzo(g,h,i)perylene	102	101	40-143	0	30				
Chrysene	85	87	35-148	1	30				
Fluorene	98	98	60-125	1	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec Group Number: 1163143
Reported: 10/01/09 at 11:26 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Indeno(1,2,3-cd)pyrene	99	104	36-144	3	30				
Phenanthrene	88	88	33-156	0	30				
Pyrene	96	97	25-160	0	30				
Batch number: 092675708002	Sample number(s): 5784781-5784785 UNSPK: 5784781 BKG: 5784781								
Lead	74*	64*	75-125	2	20	51.1	56.1	9	20
Batch number: 09267820002B	Sample number(s): 5784781-5784785 BKG: P784979								
Moisture						10.8	15.0	32*	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Unleaded Soils by 8260B+TMBs
Batch number: Q092671AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5784781	63*	66*	62*	65*
5784782	59*	61*	58*	60*
5784783	72	76	73	79
5784784	60*	65*	61*	63*
5784785	63*	67*	62*	63*
Blank	80	86	83	81
LCS	83	84	84	83
LCSD	85	88	86	84
Limits:	71-114	70-109	70-123	70-111

Analysis Name: PAHs by 8270
Batch number: 09267SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
5784781	84	88	92
5784782	90	93	101
5784783	108	97	80
5784784	93	94	90
5784785	87	90	101
Blank	94	99	85
LCS	90	95	86
MS	90	94	99
MSD	93	96	101
Limits:	49-120	55-117	43-131

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11183 Group# 1163143 Sample # 5784781-85

COC # 221066

Please print. Instructions on reverse side correspond with circled numbers. 1.9°C

(1)
Client: STANTEC - PHILA REFINERY Acct. #:
Project Name/#: 213401245/200.0004 PWSID #:
Project Manager: BRIAN STOUDT P.O.#:
Sampler: BRIAN STOUDT Quote #:
Name of state where samples were collected: PA

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix (4) Soil	Water (☐ Potable ☐ NPDES Check if Applicable)	Other	Total # of Containers	(5) Analyses Requested / Preservation Codes: PADEP USED OIL	FUEL OIL No. 4,5,6	LUBRICATING OILS & FLUIDS	TOTAL XYLENES					Remarks (6) Temperature of samples upon receipt (if requested)
S-1 (4.0-4.5)	9-21-09	1405	X		X			2	X	X	X	X					-PLEASE INCLUDE ANALYSIS
S-2 (4.0-4.5)	9-21-09	1420	X		X			2	X	X	X	X					OF TRIMETHYLBENZENES
S-3 (3.0-3.5)	9-21-09	1430	X		X			2	X	X	X	X					
S-4 (4.0-4.5)	9-22-09	0800	X		X			2	X	X	X	X					
S-5 (4.0-4.5)	9-22-09	0835	X		X			2	X	X	X	X					

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 2 DAY TAT
Rush results requested by (please circle): Phone Fax E-mail
Phone #: 484-875-3075 Fax #: 484-875-9286
E-mail address: Brian.Stoudt@stantec.com

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9/23/09	1245	[signature]	9/23/09	1245
[signature]	9/23/09	1700			
			Karie Hartlove	9/23/09	17:00

October 1, 2009

Mr. Brian Stoudt
Stantec
1060 Andrew Drive
West Chester, PA 19380

Dear Mr. Stoudt:

I am writing to inform you of revised analytical reports that are being issued for the following:

Project No. Philadelphia Refinery

Group No. 1163143

LLI Sample No.	Client Sample Identification	Collection Date
5784781	S-1 (4.0-4.5)	09/21/09
5784782	S-2 (4.0-4.5)	09/21/09
5784783	S-3 (3.0-3.5)	09/21/09
5784784	S-4 (4.0-4.5)	09/22/09
5784785	S-5 (4.0-4.5)	09/22/09

The correction to the data affects the Volatiles by 8260B analysis only.

In response to your inquiry regarding Total Xylene results missing from the report, the data has been revised to report Total Xylenes.

The revised analytical report reflects this correction and is enclosed.

You are a valued client and we apologize for any inconvenience that this incident may have caused. If you have any questions or require further assistance, please call me at 717-656-2300, Ext. 1375. We appreciate your business and look forward to continuing to serve your laboratory needs.

Sincerely,

Amek Carter
Client Service Representative
Environmental Client Services

AC/mcs
Enclosures

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

484-875-3075

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

October 01, 2009

Project: Philadelphia Refinery

Samples arrived at the laboratory on Tuesday, September 29, 2009. The PO# for this group is PHILADELPHIA. The group number for this submittal is 1163948.

Client Sample Description	Lancaster Labs (LLI) #
S-6 (1.5-2.0) Grab Soil Sample	5790786
S-7 (2.5-3.0) Grab Soil Sample	5790787
S-8 (2.0-2.5) Grab Soil Sample	5790788

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Sunoco c/o Stantec Attn: Brian Stoudt

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Loran A Carter at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-6 (1.5-2.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5790786
LLI Group # 1163948
PA

Project Name: Philadelphia Refinery

Collected: 09/29/2009 08:15 by BS

Account Number: 11183

Submitted: 09/29/2009 16:15
Reported: 10/01/2009 at 16:46
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S6152

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		53	58.69
02405	Ethylbenzene	100-41-4	N.D.		110	58.69
02405	Isopropylbenzene	98-82-8	N.D.		110	58.69
02405	Naphthalene	91-20-3	410	J	110	58.69
02405	Toluene	108-88-3	360	J	110	58.69
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		110	58.69
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		110	58.69
02405	Xylene (Total)	1330-20-7	N.D.		110	58.69
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	7,500		600	10
07804	Benzo(a)anthracene	56-55-3	8,800		600	10
07804	Benzo(a)pyrene	50-32-8	7,100		600	10
07804	Benzo(b)fluoranthene	205-99-2	8,600		600	10
07804	Benzo(g,h,i)perylene	191-24-2	3,700		600	10
07804	Chrysene	218-01-9	11,000		600	10
07804	Fluorene	86-73-7	7,300		600	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	3,100		600	10
07804	Phenanthrene	85-01-8	17,000		600	10
07804	Pyrene	129-00-0	23,000		600	10

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	450		1.07	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	44.9		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092731AA	09/30/2009 20:11	Kerri E Koch	58.69

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-6 (1.5-2.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5790786
LLI Group # 1163948
PA

Project Name: Philadelphia Refinery

Collected: 09/29/2009 08:15 by BS

Account Number: 11183

Submitted: 09/29/2009 16:15
Reported: 10/01/2009 at 16:46
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S6152

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200927319312	09/29/2009 08:15	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09273SLD026	10/01/2009 12:43	Ryan P Byrne	10
07806	BNA Soil Extraction	SW-846 3550B	1	09273SLD026	09/30/2009 14:05	Doreen K Robles	1
06955	Lead	SW-846 6010B	1	092735708001	10/01/2009 04:22	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092735708001	09/30/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09273820002B	09/30/2009 17:39	Scott W Freisher	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-7 (2.5-3.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5790787
LLI Group # 1163948
PA

Project Name: Philadelphia Refinery

Collected: 09/29/2009 08:25 by BS

Account Number: 11183

Submitted: 09/29/2009 16:15
Reported: 10/01/2009 at 16:46
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S7253

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		44	53.65
02405	Ethylbenzene	100-41-4	N.D.		88	53.65
02405	Isopropylbenzene	98-82-8	100	J	88	53.65
02405	Naphthalene	91-20-3	390	J	88	53.65
02405	Toluene	108-88-3	280	J	88	53.65
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		88	53.65
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		88	53.65
02405	Xylene (Total)	1330-20-7	N.D.		88	53.65
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	4,100		540	10
07804	Benzo(a)anthracene	56-55-3	4,900		540	10
07804	Benzo(a)pyrene	50-32-8	3,500		540	10
07804	Benzo(b)fluoranthene	205-99-2	3,900		540	10
07804	Benzo(g,h,i)perylene	191-24-2	1,600	J	540	10
07804	Chrysene	218-01-9	5,600		540	10
07804	Fluorene	86-73-7	4,300		540	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	1,400	J	540	10
07804	Phenanthrene	85-01-8	18,000		540	10
07804	Pyrene	129-00-0	13,000		540	10

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	387		0.943	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	38.8		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092731AA	09/30/2009 20:33	Kerri E Koch	53.65

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-7 (2.5-3.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5790787
LLI Group # 1163948
PA

Project Name: Philadelphia Refinery

Collected: 09/29/2009 08:25 by BS

Account Number: 11183

Submitted: 09/29/2009 16:15
Reported: 10/01/2009 at 16:46
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S7253

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200927319312	09/29/2009 08:25	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09273SLD026	10/01/2009 13:07	Ryan P Byrne	10
07806	BNA Soil Extraction	SW-846 3550B	1	09273SLD026	09/30/2009 14:05	Doreen K Robles	1
06955	Lead	SW-846 6010B	1	092735708001	10/01/2009 04:25	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092735708001	09/30/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09273820002B	09/30/2009 17:39	Scott W Freisher	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-8 (2.0-2.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5790788
LLI Group # 1163948
PA

Project Name: Philadelphia Refinery

Collected: 09/29/2009 08:40 by BS

Account Number: 11183

Submitted: 09/29/2009 16:15
Reported: 10/01/2009 at 16:46
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S8202

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		44	55.31
02405	Ethylbenzene	100-41-4	N.D.		88	55.31
02405	Isopropylbenzene	98-82-8	N.D.		88	55.31
02405	Naphthalene	91-20-3	710		88	55.31
02405	Toluene	108-88-3	440	J	88	55.31
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		88	55.31
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		88	55.31
02405	Xylene (Total)	1330-20-7	180	J	88	55.31
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	2,100	J	530	10
07804	Benzo(a)anthracene	56-55-3	2,200	J	530	10
07804	Benzo(a)pyrene	50-32-8	2,200	J	530	10
07804	Benzo(b)fluoranthene	205-99-2	2,500	J	530	10
07804	Benzo(g,h,i)perylene	191-24-2	1,500	J	530	10
07804	Chrysene	218-01-9	2,600	J	530	10
07804	Fluorene	86-73-7	1,700	J	530	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	1,100	J	530	10
07804	Phenanthrene	85-01-8	5,500		530	10
07804	Pyrene	129-00-0	5,200		530	10

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	443		0.935	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	37.1		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092731AA	09/30/2009 19:47	Kerri E Koch	55.31

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-8 (2.0-2.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5790788
LLI Group # 1163948
PA

Project Name: Philadelphia Refinery

Collected: 09/29/2009 08:40 by BS

Account Number: 11183

Submitted: 09/29/2009 16:15
Reported: 10/01/2009 at 16:46
Discard: 12/01/2009

Sunoco c/o Stantec
102 Pickering Way
Suite 200
Exton PA 19341

S8202

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200927319312	09/29/2009 08:40	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09273SLD026	10/01/2009 13:31	Ryan P Byrne	10
07806	BNA Soil Extraction	SW-846 3550B	1	09273SLD026	09/30/2009 14:05	Doreen K Robles	1
06955	Lead	SW-846 6010B	1	092735708001	10/01/2009 04:35	John W Yanzuk II	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092735708001	09/30/2009 19:45	Annamaria Stipkovits	1
00111	Moisture	SM20 2540 G	1	09273820002B	09/30/2009 17:39	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec Group Number: 1163948
Reported: 10/01/09 at 04:46 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Q092731AA	Sample number(s): 5790786-5790788							
Benzene	N.D.	25.	ug/kg	95	98	80-120	3	30
Ethylbenzene	N.D.	50.	ug/kg	94	95	80-120	1	30
Isopropylbenzene	N.D.	50.	ug/kg	89	91	76-120	2	30
Naphthalene	N.D.	50.	ug/kg	75	77	59-123	3	30
Toluene	N.D.	50.	ug/kg	97	98	80-120	1	30
1,2,4-Trimethylbenzene	N.D.	50.	ug/kg	91	91	79-120	1	30
1,3,5-Trimethylbenzene	N.D.	50.	ug/kg	89	90	78-120	1	30
Xylene (Total)	N.D.	50.	ug/kg	95	97	80-120	2	30
Batch number: 09273SLD026	Sample number(s): 5790786-5790788							
Anthracene	N.D.	33.	ug/kg	94	93	76-112	1	30
Benzo(a)anthracene	N.D.	33.	ug/kg	90	89	73-112	1	30
Benzo(a)pyrene	N.D.	33.	ug/kg	85	86	69-122	1	30
Benzo(b)fluoranthene	N.D.	33.	ug/kg	82	93	61-127	13	30
Benzo(g,h,i)perylene	N.D.	33.	ug/kg	92	88	65-122	5	30
Chrysene	N.D.	33.	ug/kg	91	92	76-113	1	30
Fluorene	N.D.	33.	ug/kg	91	91	75-116	0	30
Indeno(1,2,3-cd)pyrene	N.D.	33.	ug/kg	84	83	64-119	2	30
Phenanthrene	N.D.	33.	ug/kg	93	92	77-113	1	30
Pyrene	N.D.	33.	ug/kg	88	92	75-115	4	30
Batch number: 092735708001	Sample number(s): 5790786-5790788							
Lead	N.D.	0.600	mg/kg	99		85-114		
Batch number: 09273820002B	Sample number(s): 5790786-5790788							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 092735708001	Sample number(s): 5790786-5790788 UNSPK: P790545 BKG: P790545								
Lead	97	89	75-125	5	20	9.05	9.21	2	20
Batch number: 09273820002B	Sample number(s): 5790786-5790788 BKG: P788419								
Moisture						3.2	3.2	1	15

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec
Reported: 10/01/09 at 04:46 PM

Group Number: 1163948

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Unleaded Soils by 8260B+TMBs
Batch number: Q092731AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5790786	61*	61*	60*	67*
5790787	62*	63*	63*	71
5790788	65*	65*	64*	64*
Blank	82	84	83	79
LCS	87	90	88	85
LCSD	89	92	89	86
Limits:	71-114	70-109	70-123	70-111

Analysis Name: PAHs by 8270
Batch number: 09273SLD026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
5790786	124*	95	79
5790787	120	88	77
5790788	69	67	64
Blank	87	88	82
LCS	92	93	81
LCSD	91	91	83
Limits:	49-120	55-117	43-131

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11183 Group# 1163948 Sample # 5790786-88 **COC #** 215152

Please print. Instructions on reverse side correspond with circled numbers. 0.7°C

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(1)
Client: STANTEC - PHILA REFINERY Acct. #:
Project Name/#: 213401245/200.0004 PWSID #:
Project Manager: Brian Stoudt P.O.#:
Sampler: Brian Stoudt Quote #:
Name of state where samples were collected: PA

(2) (3) (4) (5) (6)

Sample Identification	~~Date~~ TIME Collected	~~Time~~ DATE Collected	Grab	Composite	Soil	Water (Check if Applicable: ☐ Potable ☐ NPDES)	Other	Total # of Containers	PADEP USED OIL	FUEL OIL No. 4, 5, 6	LUBRICATING OILS & FLUIDS	TOTAL XYLENES					Remarks (Temperature of samples upon receipt (if requested))
S-6 (1.5-2.0)	0815	9/29/09	X		X			2	X	X	X	X					-PLEASE INCLUDE ANALYSIS
S-7 (2.5-3.0)	0825	9/29/09	X		X			2	X	X	X	X					OF TRIMETHYLBENZENES
S-8 (2.0-2.5)	0840	9/29/09	X		X			2	X	X	X	X					

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 2 day TAT
Rush results requested by (please circle): Phone Fax E-mail
Phone #: 610-235-9870 Fax #:
E-mail address: brian.stoudt@stantec.com

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9/29/09	1200	[signature]	9/29/09	1200
[signature]	9/29/09	1618			
			[signature]	9/29/09	1615

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102.03

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

610-840-2500

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

October 09, 2009

Project: Philadelphia Refinery

Samples arrived at the laboratory on Wednesday, October 07, 2009. The PO# for this group is PHILADELPHIA. The group number for this submittal is 1165331.

Client Sample Description	Lancaster Labs (LLI) #
S-9 (2.5-3.0) Grab Soil Sample	5799591
S-10 (2.0-2.5) Grab Soil Sample	5799592
S-11 (1.5-2.0) Grab Soil Sample	5799593
S-12 (2.0-2.5) Grab Soil Sample	5799594
S-13 (1.0-1.5) Grab Soil Sample	5799595
S-14 (1.0-1.5) Grab Soil Sample	5799596
S-15 (1.5-2.0) Grab Soil Sample	5799597

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Sunoco c/o Stantec Attn: Brian Stoudt

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Loran A Carter at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-9 (2.5-3.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799591
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 10:45 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S925-

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		57	72.75
02405	Ethylbenzene	100-41-4	N.D.		110	72.75
02405	Isopropylbenzene	98-82-8	N.D.		110	72.75
02405	Naphthalene	91-20-3	660		110	72.75
02405	Toluene	108-88-3	990		110	72.75
02405	1,2,4-Trimethylbenzene	95-63-6	120	J	110	72.75
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		110	72.75
02405	Xylene (Total)	1330-20-7	170	J	110	72.75
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	2,500	J	520	10
07804	Benzo(a)anthracene	56-55-3	3,500		520	10
07804	Benzo(a)pyrene	50-32-8	2,900		520	10
07804	Benzo(b)fluoranthene	205-99-2	3,100		520	10
07804	Benzo(g,h,i)perylene	191-24-2	1,700	J	520	10
07804	Chrysene	218-01-9	3,700		520	10
07804	Fluorene	86-73-7	2,200	J	520	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	1,300	J	520	10
07804	Phenanthrene	85-01-8	8,900		520	10
07804	Pyrene	129-00-0	8,500		520	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	328		0.939	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	36.1		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 18:36	Kelly E Brickley	72.75
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 10:45	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 01:10	Linda M Hartenstine	10

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-9 (2.5-3.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799591
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 10:45 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S925-

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 01:07	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-10 (2.0-2.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799592
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 10:55 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1025

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		51	69.32
02405	Ethylbenzene	100-41-4	120	J	100	69.32
02405	Isopropylbenzene	98-82-8	N.D.		100	69.32
02405	Naphthalene	91-20-3	870		100	69.32
02405	Toluene	108-88-3	700		100	69.32
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		100	69.32
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		100	69.32
02405	Xylene (Total)	1330-20-7	250	J	100	69.32
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	2,000	J	490	10
07804	Benzo(a)anthracene	56-55-3	2,100	J	490	10
07804	Benzo(a)pyrene	50-32-8	3,600		490	10
07804	Benzo(b)fluoranthene	205-99-2	3,500		490	10
07804	Benzo(g,h,i)perylene	191-24-2	4,500		490	10
07804	Chrysene	218-01-9	2,600		490	10
07804	Fluorene	86-73-7	960	J	490	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	3,500		490	10
07804	Phenanthrene	85-01-8	3,100		490	10
07804	Pyrene	129-00-0	2,700		490	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	447		0.871	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	31.8		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 18:58	Kelly E Brickley	69.32
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 10:55	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 02:22	Brian K Graham	10
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-10 (2.0-2.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799592
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 10:55 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1025

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 01:35	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-11 (1.5-2.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799593
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 11:05 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1115

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	120	J	32	54.42
02405	Ethylbenzene	100-41-4	N.D.		64	54.42
02405	Isopropylbenzene	98-82-8	N.D.		64	54.42
02405	Naphthalene	91-20-3	290	J	64	54.42
02405	Toluene	108-88-3	400		64	54.42
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		64	54.42
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		64	54.42
02405	Xylene (Total)	1330-20-7	83	J	64	54.42
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	890	J	390	10
07804	Benzo(a)anthracene	56-55-3	1,600	J	390	10
07804	Benzo(a)pyrene	50-32-8	1,600	J	390	10
07804	Benzo(b)fluoranthene	205-99-2	2,000		390	10
07804	Benzo(g,h,i)perylene	191-24-2	1,100	J	390	10
07804	Chrysene	218-01-9	1,900	J	390	10
07804	Fluorene	86-73-7	650	J	390	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	960	J	390	10
07804	Phenanthrene	85-01-8	1,700	J	390	10
07804	Pyrene	129-00-0	3,500		390	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	99.9		0.685	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	15.0		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 19:21	Kelly E Brickley	54.42
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 11:05	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 02:46	Brian K Graham	10
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-11 (1.5-2.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799593
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 11:05 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1115

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 01:39	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-12 (2.0-2.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799594
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:20 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1202

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	61	J	49	67.54
02405	Ethylbenzene	100-41-4	N.D.		97	67.54
02405	Isopropylbenzene	98-82-8	N.D.		97	67.54
02405	Naphthalene	91-20-3	850		97	67.54
02405	Toluene	108-88-3	940		97	67.54
02405	1,2,4-Trimethylbenzene	95-63-6	120	J	97	67.54
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		97	67.54
02405	Xylene (Total)	1330-20-7	190	J	97	67.54
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	780	J	480	10
07804	Benzo(a)anthracene	56-55-3	1,000	J	480	10
07804	Benzo(a)pyrene	50-32-8	1,000	J	480	10
07804	Benzo(b)fluoranthene	205-99-2	1,400	J	480	10
07804	Benzo(g,h,i)perylene	191-24-2	760	J	480	10
07804	Chrysene	218-01-9	1,100	J	480	10
07804	Fluorene	86-73-7	620	J	480	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	620	J	480	10
07804	Phenanthrene	85-01-8	2,100	J	480	10
07804	Pyrene	129-00-0	1,900	J	480	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	235		0.866	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	30.7		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 19:44	Kelly E Brickley	67.54
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 14:20	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 03:10	Brian K Graham	10
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-12 (2.0-2.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799594
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:20 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1202

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 01:53	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-13 (1.0-1.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799595
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:30 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1310

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		58	74.76
02405	Ethylbenzene	100-41-4	N.D.		120	74.76
02405	Isopropylbenzene	98-82-8	N.D.		120	74.76
02405	Naphthalene	91-20-3	670		120	74.76
02405	Toluene	108-88-3	400	J	120	74.76
02405	1,2,4-Trimethylbenzene	95-63-6	N.D.		120	74.76
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		120	74.76
02405	Xylene (Total)	1330-20-7	140	J	120	74.76
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	1,100	J	520	10
07804	Benzo(a)anthracene	56-55-3	1,800	J	520	10
07804	Benzo(a)pyrene	50-32-8	2,400	J	520	10
07804	Benzo(b)fluoranthene	205-99-2	2,800		520	10
07804	Benzo(g,h,i)perylene	191-24-2	1,900	J	520	10
07804	Chrysene	218-01-9	1,900	J	520	10
07804	Fluorene	86-73-7	N.D.		520	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	1,600	J	520	10
07804	Phenanthrene	85-01-8	3,000		520	10
07804	Pyrene	129-00-0	2,000	J	520	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	330		0.891	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	35.9		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 20:07	Kelly E Brickley	74.76
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 14:30	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 03:34	Brian K Graham	10
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-13 (1.0-1.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799595
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:30 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1310

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 01:58	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-14 (1.0-1.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799596
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:40 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1410

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	N.D.		57	75.2
02405	Ethylbenzene	100-41-4	N.D.		110	75.2
02405	Isopropylbenzene	98-82-8	N.D.		110	75.2
02405	Naphthalene	91-20-3	800		110	75.2
02405	Toluene	108-88-3	280	J	110	75.2
02405	1,2,4-Trimethylbenzene	95-63-6	130	J	110	75.2
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		110	75.2
02405	Xylene (Total)	1330-20-7	190	J	110	75.2
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	1,100	J	500	10
07804	Benzo(a)anthracene	56-55-3	1,900	J	500	10
07804	Benzo(a)pyrene	50-32-8	2,500	J	500	10
07804	Benzo(b)fluoranthene	205-99-2	3,000		500	10
07804	Benzo(g,h,i)perylene	191-24-2	2,300	J	500	10
07804	Chrysene	218-01-9	1,900	J	500	10
07804	Fluorene	86-73-7	N.D.		500	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	1,900	J	500	10
07804	Phenanthrene	85-01-8	2,500	J	500	10
07804	Pyrene	129-00-0	2,300	J	500	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	366		0.871	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	33.8		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 20:30	Kelly E Brickley	75.2
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 14:40	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 03:58	Brian K Graham	10
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-14 (1.0-1.5) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799596
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:40 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1410

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 02:02	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: S-15 (1.5-2.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799597
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:55 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1515

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	
02405	Benzene	71-43-2	110	J	55	70.84
02405	Ethylbenzene	100-41-4	190	J	110	70.84
02405	Isopropylbenzene	98-82-8	N.D.		110	70.84
02405	Naphthalene	91-20-3	430	J	110	70.84
02405	Toluene	108-88-3	630		110	70.84
02405	1,2,4-Trimethylbenzene	95-63-6	160	J	110	70.84
02405	1,3,5-Trimethylbenzene	108-67-8	N.D.		110	70.84
02405	Xylene (Total)	1330-20-7	640		110	70.84
GC/MS Semivolatiles	**SW-846 8270C**		**ug/kg**		**ug/kg**	
07804	Anthracene	120-12-7	4,400		520	10
07804	Benzo(a)anthracene	56-55-3	5,800		520	10
07804	Benzo(a)pyrene	50-32-8	6,500		520	10
07804	Benzo(b)fluoranthene	205-99-2	7,500		520	10
07804	Benzo(g,h,i)perylene	191-24-2	4,600		520	10
07804	Chrysene	218-01-9	7,300		520	10
07804	Fluorene	86-73-7	3,200		520	10
07804	Indeno(1,2,3-cd)pyrene	193-39-5	3,600		520	10
07804	Phenanthrene	85-01-8	4,900		520	10
07804	Pyrene	129-00-0	15,000		520	10
Metals	**SW-846 6010B**		**mg/kg**		**mg/kg**	
06955	Lead	7439-92-1	386		0.886	1
Wet Chemistry	**SM20 2540 G**		**%**		**%**	
00111	Moisture	n.a.	35.5		0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02405	Unleaded Soils by 8260B+TMBs	SW-846 8260B	1	Q092812AA	10/08/2009 20:53	Kelly E Brickley	70.84
06171	GC/MS - Field Preserved MeOH	SW-846 5035	1	200928119418	10/06/2009 14:55	Client Supplied	1
07804	PAHs by 8270	SW-846 8270C	1	09281SLA026	10/09/2009 04:22	Brian K Graham	10
07806	BNA Soil Extraction	SW-846 3550B	1	09281SLA026	10/08/2009 14:30	Doreen K Robles	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-15 (1.5-2.0) Grab Soil Sample
Philadelphia Refinery

LLI Sample # SW 5799597
LLI Group # 1165331
PA

Project Name: Philadelphia Refinery

Collected: 10/06/2009 14:55 by BS

Account Number: 11183

Submitted: 10/07/2009 17:45
Reported: 10/09/2009 at 17:54
Discard: 12/09/2009

Sunoco c/o Stantec
1060 Andrew Drive
Suite 140
West Chester PA 19380

S1515

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	092815708001	10/09/2009 02:07	Tara L Snyder	1
05708	SW SW846 ICP Digest	SW-846 3050B	1	092815708001	10/08/2009 13:22	James L Mertz	1
00111	Moisture	SM20 2540 G	1	09281820001B	10/08/2009 18:32	Scott W Freisher	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec Group Number: 1165331
Reported: 10/09/09 at 05:54 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Q092812AA	Sample number(s): 5799591-5799597							
Benzene	N.D.	25.	ug/kg	94	93	80-120	1	30
Ethylbenzene	N.D.	50.	ug/kg	95	91	80-120	4	30
Isopropylbenzene	N.D.	50.	ug/kg	90	87	76-120	3	30
Naphthalene	N.D.	50.	ug/kg	75	74	59-123	1	30
Toluene	N.D.	50.	ug/kg	98	95	80-120	4	30
1,2,4-Trimethylbenzene	N.D.	50.	ug/kg	92	89	79-120	3	30
1,3,5-Trimethylbenzene	N.D.	50.	ug/kg	89	86	78-120	4	30
Xylene (Total)	N.D.	50.	ug/kg	97	93	80-120	4	30
Batch number: 09281SLA026	Sample number(s): 5799591-5799597							
Anthracene	N.D.	33.	ug/kg	96		76-112		
Benzo(a)anthracene	N.D.	33.	ug/kg	93		73-112		
Benzo(a)pyrene	N.D.	33.	ug/kg	102		69-122		
Benzo(b)fluoranthene	N.D.	33.	ug/kg	93		61-127		
Benzo(g,h,i)perylene	N.D.	33.	ug/kg	104		65-122		
Chrysene	N.D.	33.	ug/kg	96		76-113		
Fluorene	N.D.	33.	ug/kg	92		75-116		
Indeno(1,2,3-cd)pyrene	N.D.	33.	ug/kg	104		64-119		
Phenanthrene	N.D.	33.	ug/kg	97		77-113		
Pyrene	N.D.	33.	ug/kg	96		75-115		
Batch number: 092815708001	Sample number(s): 5799591-5799597							
Lead	N.D.	0.583	mg/kg	103		85-114		
Batch number: 09281820001B	Sample number(s): 5799591-5799597							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 09281SLA026	Sample number(s): 5799591-5799597 UNSPK: 5799591								
Anthracene	76	98	48-134	12	30				
Benzo(a)anthracene	60	74	37-148	7	30				
Benzo(a)pyrene	67	87	35-150	10	30				
Benzo(b)fluoranthene	52	81	23-156	15	30				
Benzo(g,h,i)perylene	89	87	40-143	1	30				
Chrysene	63	102	35-148	18	30				
Fluorene	72	94	60-125	13	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec Group Number: 1165331
Reported: 10/09/09 at 05:54 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Indeno(1,2,3-cd)pyrene	92	97	36-144	3	30				
Phenanthrene	11*	97	33-156	22	30				
Pyrene	34	98	25-160	16	30				
Batch number: 092815708001	Sample number(s): 5799591-5799597 UNSPK: 5799591 BKG: 5799591								
Lead	8 (2)	315 (2)	75-125	20	20	210	228	8	20
Batch number: 09281820001B	Sample number(s): 5799591-5799597 BKG: P795935								
Moisture						21.3	23.2	9	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Unleaded Soils by 8260B+TMBs
Batch number: Q092812AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5799591	71	71	70	68*
5799592	74	75	69*	67*
5799593	76	78	76	80
5799594	71	71	70	70
5799595	69*	69*	65*	61*
5799596	72	75	69*	66*
5799597	72	72	66*	62*
Blank	80	83	81	78
LCS	84	93	90	92
LCSD	84	89	84	84
Limits:	71-114	70-109	70-123	70-111

Analysis Name: PAHs by 8270
Batch number: 09281SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
5799591	104	105	89
5799592	92	101	87
5799593	92	106	87
5799594	83	97	82
5799595	87	94	82
5799596	83	98	79
5799597	98	105	89
Blank	84	93	81
LCS	89	99	84
MS	96	101	87
MSD	101	97	82
Limits:	49-120	55-117	43-131

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco c/o Stantec
Reported: 10/09/09 at 05:54 PM

Group Number: 1165331

Surrogate Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11183 Group# 1165331 Sample # 5799591-97 **COC #** 0132610

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: STANTEC - PHILA REFINERY Acct. #:

Project Name/#: 213401245/200.0004 PWSID #:

Project Manager: BRIAN STOUDT P.O.#:

Sampler: BRIAN STOUDT Quote #:

Name of state where samples were collected: PA

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix: Soil	Water (☐ Potable ☐ NPDES Applicable)	Other	(4) Total # of Containers	(5) Analyses Requested / Preservation Codes: PADEP USED OIL	FUEL OIL No. 4,5,6	LUBRICATING OILS & FLUIDS	TOTAL XYLENES					Remarks	(6) Temperature of samples upon receipt (if requested)
S-9 (2.5-3.0)	10/6/09	1045	X		X			2	X	X	X	X					-PLEASE INCLUDE ANALYSIS	
S-10 (2.0-2.5)	↓	1055	X		X			2	X	X	X	X					OF TRIMETHYLBENZENES	
S-11 (1.5-2.0)		1105	X		X			2	X	X	X	X						
S-12 (2.0-2.5)		1420	X		X			2	X	X	X	X						
S-13 (1.0-1.5)		1430	X		X			2	X	X	X	X						
S-14 (1.0-1.5)		1440	X		X			2	X	X	X	X						
S-15 (1.5-2.0)		1455	X		X			2	X	X	X	X						

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 2 DAY TAT
Rush results requested by (please circle): Phone Fax E-mail
Phone #: 610-235-9870 Fax #:
E-mail address: brian.stoudt@stantec.com

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)
SDG Complete? Yes No
Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	10/7/09	1230	[signature]	10/7/09	1230
[signature]	10/7/09	1740			
			[signature]	10/7/09	1745

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

GP 271

SECOR
International Incorporated

July 10, 2002

Mr. Jim Tucker
Sunoco, Inc.
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Subject: **Aboveground Storage Tank #271 Closure Report**
Sunoco Philadelphia Refinery, Philadelphia, Pennsylvania

Dear Mr. Tucker:

This letter summarizes the aboveground storage tank (AST) soil characterization activities that were conducted in support of the closure requirements for Pennsylvania Code Title 25 § 245.561 under the Administration of Storage Tank and Spill Prevention Program. The project site is within the Sunoco, Inc. (Sunoco) Philadelphia Refinery located in Philadelphia, Pennsylvania (**Figure 1**). Soil characterization activities using direct observation and soil sampling and laboratory analyses were conducted surrounding AST #271 in order to evaluate potential impacts associated with product storage. AST #271 is situated on a concrete pad within a diked area and has been reported by Sunoco to have formerly contained crude oil.

Soil Boring Installation and Soil Sampling

Soil borings were advanced in the vicinity of AST #271 on June 4, 2002 by B.L. Myers using Geoprobe continuous soil sampling techniques. The borings were advanced under the supervision of a SECOR Professional Geologist certified in Pennsylvania.

It was intended that two samples (one sample at a depth of 0 to 2 feet below ground surface (bgs) and one at a depth greater than 2 feet) be collected from each of 4 soil borings advanced to the groundwater table or drilling refusal. However, as a result of localized shallow water conditions and the lack of soil sample recovery (due the presence of fill), a total of eight samples were collected from 6 borings. The soil borings are designated GP-1 through GP-6. Soil boring locations are depicted on **Figure 2**.

Observations recorded during soil boring installation are recorded on soil boring logs presented in **Appendix A**. The soil boring logs include lithologic descriptions of material encountered and relative soil volatile organic vapor content based on photoionization detector (PID) readings. As indicated on the boring logs, the materials encountered were largely silt, sand, and fill material.

Water was encountered in GP-1 and GP-6 at a depth of 0.5 feet bgs. Therefore, samples were collected at a depth of 0 to 0.5 feet bgs at these locations. At GP-2, water was encountered at a depth of 9 feet and a surface soil sample (0.5 to 1.0 feet bgs) and a sample immediately above water (8.5 to 9.0 feet bgs) was collected. A soil sample was collected from GP-3 at a depth of 1.5 to 2.0 feet bgs. No sample recovery was observed in the Geoprobe core barrel at greater depths at this location due to the nature of the material. Soil samples were collected from GP-4 at depths of 1.5 to 2.0 feet bgs and 3.5 to 4.0 feet bgs (water was encountered at 7 feet bgs but a sample could not collected immediately above water due the absence of sample recovery from the Geoprobe core barrel). A sample was also collected from GP-5 at a depth of 1.5 to 2.0 feet bgs (water was encountered at 9 feet bgs but no sample recovery was observed from 4 to 9 feet bgs).

After collection, the soil samples were placed in appropriate laboratory containers, labeled, placed in an ice-chilled cooler and logged on a chain-of-custody form. The soil samples were delivered to Washington Group Environmental Services Laboratory of Boothwyn, Pennsylvania for analysis.

Laboratory Analyses of Soil Samples

The laboratory analyses selected for each the soil sample were based on the former content of the AST. As mentioned above, AST #271 was reported to formerly contain crude oil. As a result, each soil sample was analyzed for Pennsylvania Department of Environmental Protection (PADEP) Pennsylvania Land Recycling Program (Act 2) short list of parameters for Fuel Oil #4, #5 #6, and Lubricating Oils and Fluids in soils. The list includes the analyses of benzene and naphthalene by EPA Method 5035/8260B and fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i) perylene by EPA Method 8270C.

For quality assurance/quality control (QA/QC) purposes, a trip blank accompanied sample shipment for analyses of benzene and naphthalene were analyzed by EPA Method 5035/8260B.

Soil Sampling Results

The soil analytical data is summarized on **Table 1.** The analytical results for the soil samples were compared to the cleanup criteria established by for PADEP under Act 2. Under the regulations implementing Act 2, Medium Specific Concentrations (MSCs) for soils include two components. PADEP has developed MSCs for soils are based on direct contact exposure scenarios and PADEP has

developed procedures for selecting MSCs for soils that are designed to protect groundwater from the potential impacts that could be caused by the migration of regulated substances from soils into the groundwater. Soil sample results were compared to Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs and Used Aquifer Nonresidential Soil-to-Groundwater MSCs. These MSCs are listed in Appendix A, Tables 3A and 3B (revised November 24, 2001) of the Act 2 Rules and Regulations.

Figure 3 depicts sample results that were reported above an MSC. No samples exceeded Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs. However, the Used Aquifer Nonresidential Soil-to-Groundwater MSC for benzene of 0.5 mg/kg was exceeded at GP-4 (1.5-2.0) and GP-5 (1.5-2.0) which reported benzene concentrations of 2.2 mg/kg and 1.2 mg/kg, respectively. Benzene was not detected in GP-4 (3.5-4.0). As described above, an additional unsaturated soil sample could not be collected at GP-5. Copies of the laboratory analytical data are presented in **Appendix B**.

Since MSCs were exceeded at two locations, additional site characterization is warranted in accordance with the Pennsylvania Storage Tank and Spill Prevention Program. The additional characterization will consist of collecting additional soil samples at GP-4 (1.5-2.0) and GP-5 (1.5-2.0) for the analyses of benzene using the Synthetic Precipitation Leaching Procedure (SPLP). An attempt will be made to collect a soil sample below GP-5 (1.5-2.0) for the analyses of benzene in order to provide vertical delineation (if this sample reports benzene above MSCs, then a portion of this sample will also be submitted for SPLP analyses for benzene). If the results of the SPLP analyses are below Act 2 Nonresidential Used Aquifer Groundwater MSCs, then no additional characterization will be warranted. If the results of the SPLP analyses are above Act 2 Nonresidential Used Aquifer Groundwater MSCs, then a groundwater investigation will be performed as a part of a comprehensive site-wide groundwater study.

Should you have any questions or comments, please feel free to contact me at (484) 875-3075.

Sincerely,
SECOR International Incorporated

Steve Baggett

Steve Baggett, P.G.
Principal Hydrogeologist

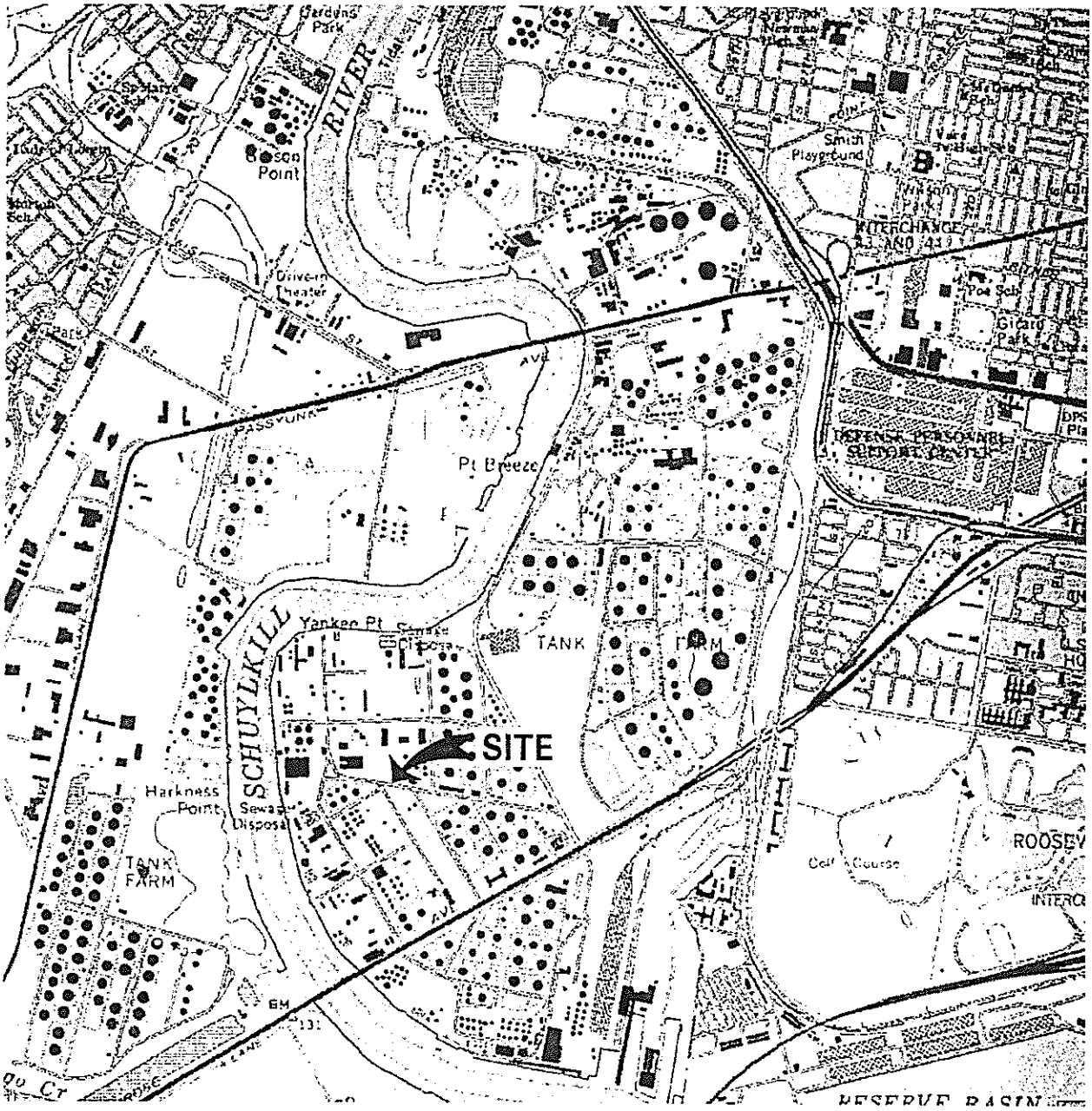
cc: James Oppenheim (Sunoco)
Al Hornung (Sunoco)
Project File

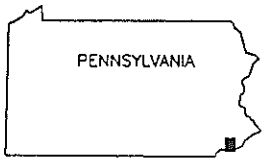
Table 1
Summary of Soil Analytical Results (ug/Kg)

AST 271
Sunoco Philadelphia Refinery

Sample	0-2 feet	2-15 feet	Soil to Groundwater	GP-1(0-0.5)		GP-2 (0.5-1.0)		GP-2 (8.5-9.0)		GP-3 (1.5-2.0)		GP-4 (1.5-2.0)		GP-4 (3.5-4.0)		GP-5 (1.5-2.0)		GP-6 (0-0.5)	
Date	Non-Residential Direct Contact (1)	Non-Residential Direct Contact (1)	Non-Residential Used Aquifer (2)	6/4/02		6/4/02		6/4/02		6/4/02		6/4/02		6/4/02		6/4/02		6/4/02	
Constituent				Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL
Benzene	210,000	240,000	500	ND	270	ND	220	ND	410	150 J	370	**2,200**	470	ND	350	**1,200**	540	76 J	270
Naphthalene	56,000,000	190,000,000	25,000	ND	270	ND	220	920	410	1,200	370	1,500	470	720	350	3000 D	540	190 J	270
Anthracene	190,000,000	190,000,000	4,700,000	ND	370	ND	370	ND	580	ND	530	ND	650	390 J	560	ND	16,000	ND	440
Benzo(a)anthracene	110,000	190,000,000	320,000	ND	370	ND	370	ND	580	ND	530	ND	650	440 J	560	ND	16,000	250 J	440
Benzo(a)pyrene	11,000	190,000,000	46,000	ND	370	ND	370	ND	580	ND	530	ND	650	410 J	560	ND	16,000	330 J	440
Benzo(b)fluoranthene	110,000	190,000,000	160,000	ND	370	ND	370	ND	580	ND	530	ND	650	460 J	560	ND	16,000	440	440
Benzo(ghi)perylene	170,000,000	190,000,000	180,000	ND	370	ND	370	ND	580	ND	530	ND	650	ND	560	ND	16,000	ND	440
Chrysene	11,000,000	190,000,000	220,000	ND	370	ND	370	ND	580	ND	530	ND	650	580	560	ND	16,000	410 J	440
Fluorene	110,000,000	190,000,000	380,000	ND	370	ND	370	ND	580	ND	530	750	650	400 J	560	120,000	16,000	ND	440
Phenanthrene	190,000,000	190,000,000	10,000,000	ND	370	ND	370	600	580	290 J	530	840	650	1,500	560	110,000	16,000	390 J	440
Pyrene	84,000,000	190,000,000	220,000	ND	370	ND	370	570 J	580	ND	530	ND	650	1,400	560	11,000 J	16,000	440	440

Bold = Exceeds Soil-to-Groundwater standard
J = Estimated Value (concentration is below laboratory reporting limit)
D = Result obtained from different dilution than other samples
(1)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 A (Revised November 24, 2001)
(2)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 B (Revised November 24, 2001)





QUADRANGLE LOCATION

N

0 1/2 1

SCALE (MILES)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PHILADELPHIA, PENNSYLVANIA–NEW JERSEY; 1995

SECOR
International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

SITE LOCATION MAP

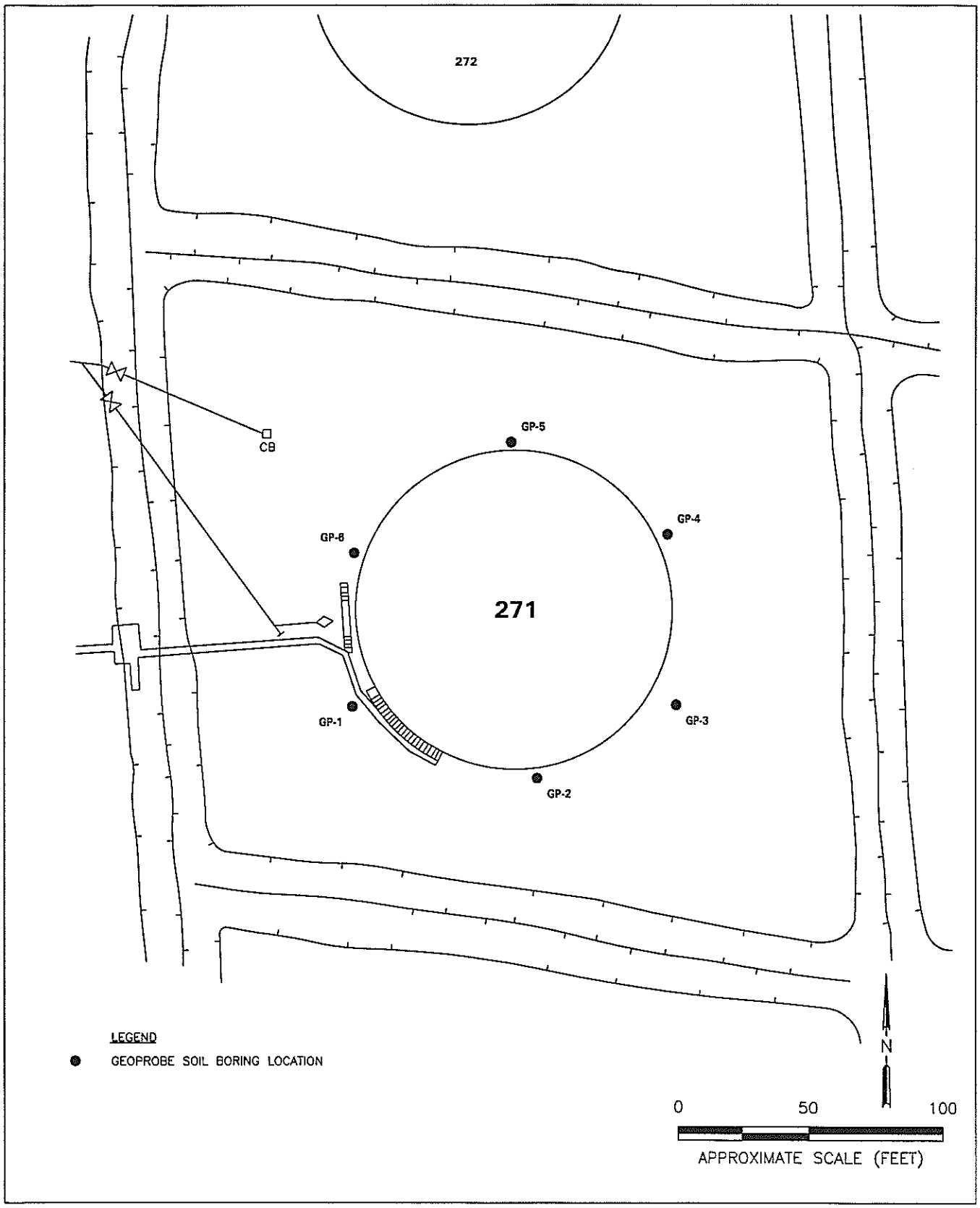
SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: 1

JOB#: 62SU.01006.02 APPR: DWN: KPM DATE: 06/28/02

N:/OFFICE-062

DWG: 62SU-1006-231(1)



SECOR
International Incorporated
102 PICKERING WAY, STE 200
EXTON, PA 19341
(484) 875-3075/875-9286 (FAX)

AST 271 GEOPROBE SOIL BORING LOCATIONS

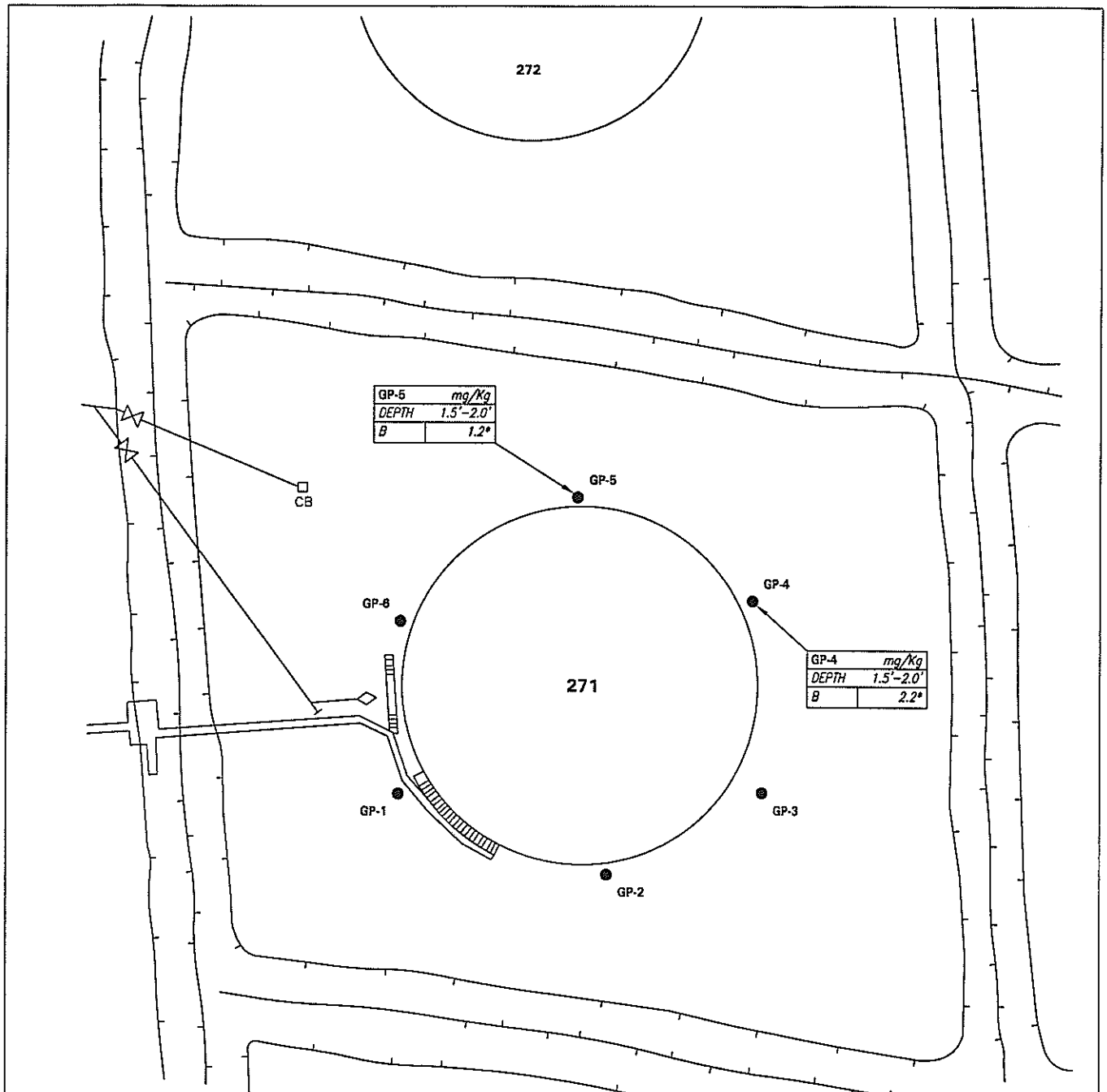
SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: **2**

JOB#: 62SU.01006.02 APPR: DWN: KPM DATE: 06/28/02

N:/SECOR-062

DWG: 62SU-1006-32SP(271)



LEGEND

● GEOPROBE SOIL BORING LOCATION

	ANALYTE	DIRECT CONTACT SURFACE SOIL NON-RESIDENTIAL MSC (mg/Kg)	NONRESIDENTIAL SOIL-TO-GROUNDWATER USED AQUIFER MSC (mg/Kg)
B	BENZENE	210	0.5

* EXCEEDS SOIL-TO-GROUNDWATER MSCs

NOTE

ONLY SAMPLES EXCEEDING MSCs ARE PRESENTED

SECOR
International Incorporated
102 PICKERING WAY, STE 200
EXTON, PA 19341
(484) 875-3075/875-9286 (FAX)

AST 271 GEOPROBE SOIL BORING ANALYTICAL RESULTS MAP (JUNE 4, 2002)

SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: **3**

JOB#: 62SU.01006.02 APPR: DWN: KPM DATE: 06/28/02

N:/SECOR-062

DWG: 62SU-1006-33A(271)

APPENDIX A

Soil Boring Logs

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3076/875-9286 (FAX)

FACILITY **SUNOCO PHILADELPHIA REFINERY** JOB# **62SU.01006.02.0003** BORING/WELL **GP-1**
LOCATION **PHILADELPHIA, PENNSYLVANIA** SURFACE ELEVATION **NA**
START (TIME/DATE) **06/04/02** FINISH **06/04/02** CASING TOP ELEVATION **NA**
LOGGED BY **S. MORESCALCHI** MONITORING DEVICE **GEOPROBE**
SUBCONTRACTOR AND EQUIPMENT **B.L. MYERS BROS**
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
GP-1 (0.0-0.5')*		0.0		0	SAND, fine to coarse; little silt; little fine gravel; dark brown; moist			0	
					No recovery	SW			
		0.0		5	SILT; some fine SAND, pieces of organic matter @ approx. 6'; dark gray; moist/wet			5	
					No recovery	ML			
				10				10	
		0.0			SILT; little fine sand; trace clay; pieces of organic matter; dark gray; moist/wet				
				15	No recovery	OL		15	
					No recovery				
				20				20	
					Boring terminated at 21 feet. Groundwater encountered at approximately 0.5 feet during drilling.				
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062

DWG:

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY **SUNOCO PHILADELPHIA REFINERY** JOB# **62SU.01006.02.0003** BORING/WELL **GP-2**
LOCATION **PHILADELPHIA, PENNSYLVANIA** SURFACE ELEVATION **NA**
START (TIME/DATE) **06/04/02** FINISH **06/04/02** CASING TOP ELEVATION **NA**
LOGGED BY **S. MORESCALCHI** MONITORING DEVICE **GEOPROBE**
SUBCONTRACTOR AND EQUIPMENT **B.L. MYERS BROS**
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
				0				0	
GP-2 (0.5-1.0')*		0.0			SAND, fine to coarse; little fine gravel; brown; dry	SW			
					No recovery				
		0.0			SILT and GRAVEL, fine; some fine to coarse sand; pieces of brick; black; dry	GM			
		0.0			SILT; some clay; little fine sand; dark gray; dry				
				5	No recovery			5	
		0.0			SILT; trace fine sand; trace pieces of organic material; moist	ML			
GP-2 (8.5-9.0')*				10				10	
					No recovery				
				15				15	
				20				20	
					No recovery				
				25				25	

Continued on the next page...

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY **SUNOCO PHILADELPHIA REFINERY** JOB# **62SU.01006.02.0003** BORING/WELL **GP-2**
LOCATION **PHILADELPHIA, PENNSYLVANIA** SURFACE ELEVATION **NA**
START (TIME/DATE) **06/04/02** FINISH **06/04/02** CASING TOP ELEVATION **NA**
LOGGED BY **S. MORESCALCHI** MONITORING DEVICE **GEOPROBE**
SUBCONTRACTOR AND EQUIPMENT **B.L. MYERS BROS**
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
		0.0		25	SILT with some clay, trace fine sand; black; wet	ML		25	
					Boring terminated at 28 feet.				
				30				30	
				35				35	
				40				40	
				45				45	
				50				50	
				55				55	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062

DWG:

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY **SUNOCO PHILADELPHIA REFINERY** JOB# **62SU.01006.02.0003** BORING/WELL **GP-3**
LOCATION **PHILADELPHIA, PENNSYLVANIA** SURFACE ELEVATION **NA**
START (TIME/DATE) **06/04/02** FINISH **06/04/02** CASING TOP ELEVATION **NA**
LOGGED BY **S. MORESCALCHI** MONITORING DEVICE **GEOPROBE**
SUBCONTRACTOR AND EQUIPMENT **B.L. MYERS BROS**
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
		0.0		0	SAND, fine to coarse; some fine gravel; little silt; pieces of brick; brown; dry	SW		0	
		0.0			SILT and SAND, fine; black; dry No recovery	SM			
GP-3 (1.5-2.0')*				5				5	
		0.0			SILT; some fine sand; black; wet No recovery	ML			
				10				10	
		0.0			SILT; some fine sand; black; wet				
				15	Boring terminated at 15 feet.			15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-4
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
		0.0		0	SAND, fine to coarse; little fine gravel; trace silt; brown; dry	SW		0	
GP-4 (1.5-2.0')*		6.3			SILT; some fine to coarse sand; black; dry				
		5.8			SILT; some fine to coarse sand; little clay; little fine sand; black; dry	SM			
		0.0			SILT; fine sand; black; dry				
GP-4 (3.5-4.0')*		6.6			SILT; some fine sand; little clay; black; dry				
				5		ML		5	
					No recovery				
				10	Boring terminated at 10 feet. Groundwater encountered at approximately 7 feet during drilling.			10	
				15				15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062

DWG:

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY **SUNOCO PHILADELPHIA REFINERY** JOB# **62SU.01006.02.0003** BORING/WELL **GP-5**
LOCATION **PHILADELPHIA, PENNSYLVANIA** SURFACE ELEVATION **NA**
START (TIME/DATE) **06/04/02** FINISH **06/04/02** CASING TOP ELEVATION **NA**
LOGGED BY **S. MORESCALCHI** MONITORING DEVICE **GEOPROBE**
SUBCONTRACTOR AND EQUIPMENT **B.L. MYERS BROS**
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
		0.0		0	SAND, fine to coarse; some fine gravel; brown; dry	SW		0	
GP-5 (1.5-2.0')*		10.6			SILT and SAND, fine to coarse; little fine gravel; black; dry	SM			
		0.0			SILT; little fine sand; little clay; black; dry	ML			
				5				5	
					No recovery				
		0.0			SILT; little sand; black; wet				
				10	Boring terminated at 10 feet.			10	
				15				15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-6
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
GP-6 (0.0-0.5')*		0.0		0	SAND, fine to coarse; little fine gravel; brown; dry			0	
		0.0			Brick				
					No recovery	SW			
				5				5	
		0.0			SILT; little clay; little fine sand; black; wet				
					No recovery	ML			
				10	Boring terminated at 10 feet.			10	
				15				15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062

DWG:

APPENDIX B

Laboratory Analytical Reports

THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
Boothwyn, Pa. 19061
(610) 497-8000

Report For:

Secor Int., Inc. (Sun Philly Refin)
Mr. Steve Baggett
102 Pickering Way, Suite 200
Exton PA 19341

Job Number

75702702

Summary Number

68717

June 19, 2002

Reviewed by Mary Pierce
Project Manager Mary Pierce

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284673A	GP-1(0-0.5)	G01PA	Benzene	ND	270	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284673A	GP-1(0-0.5)	G01PA	Naphthalene	ND	270	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284673B	GP-1(0-0.5)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284673B	GP-1(0-0.5)	G10PA	Anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benz(a)anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benzo(a)pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benzo(b)fluoranthene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benzo(ghi)perylene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Chrysene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Fluorene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Phenanthrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	S06	WATER BY EVAP	10.7		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284674A	GP-2(0.5-1)	G01PA	Benzene	ND	220	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284674A	GP-2(0.5-1)	G01PA	Naphthalene	ND	220	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284674B	GP-2(0.5-1)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284674B	GP-2(0.5-1)	G10PA	Anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benz(a)anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benzo(a)pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benzo(b)fluoranthene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benzo(ghi)perylene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Chrysene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Fluorene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Phenanthrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	S06	WATER BY EVAP	9.1		% as received	06/04/2002	06/05/2002	06/06/2002	MCH

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284675A	GP-2(8.5-9)	G01PA	Benzene	ND	410	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284675A	GP-2(8.5-9)	G01PA	Naphthalene	920	410	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284675B	GP-2(8.5-9)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284675B	GP-2(8.5-9)	G10PA	Anthracene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benz(a)anthracene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benzo(a)pyrene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benzo(b)fluoranthene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benzo(ghi)perylene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Chrysene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Fluorene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Phenanthrene	600	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Pyrene	570 J	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	S06	WATER BY EVAP	42.4		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284676A	GP-3(1.5-2)	G01PA	Benzene	150 J	370	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284676A	GP-3(1.5-2)	G01PA	Naphthalene	1200	370	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284676B	GP-3(1.5-2)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284676B	GP-3(1.5-2)	G10PA	Anthracene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benz(a)anthracene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benzo(a)pyrene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benzo(b)fluoranthene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benzo(ghi)perylene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Chrysene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Fluorene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Phenanthrene	290 J	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Pyrene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	S06	WATER BY EVAP	37.4		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284677A	GP-4(1.5-2)	G01PA	Benzene	2200	470	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284677A	GP-4(1.5-2)	G01PA	Naphthalene	1500	470	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284677B	GP-4(1.5-2)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284677B	GP-4(1.5-2)	G10PA	Anthracene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benz(a)anthracene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benzo(a)pyrene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benzo(b)fluoranthene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benzo(ghi)perylene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Chrysene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Fluorene	750	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Phenanthrene	840	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Pyrene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	S06	WATER BY EVAP	48.9		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284678A	GP-4(3.5-4)	G01PA	Benzene	ND	350	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284678A	GP-4(3.5-4)	G01PA	Naphthalene	720	350	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284678B	GP-4(3.5-4)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284678B	GP-4(3.5-4)	G10PA	Anthracene	390 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benz(a)anthracene	440 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benzo(a)pyrene	410 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benzo(b)fluoranthene	460 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benzo(ghi)perylene	ND	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Chrysene	580	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Fluorene	400 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Phenanthrene	1500	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Pyrene	1400	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	S06	WATER BY EVAP	40.4		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284679A	GP-5(1.5-2)	G01PA	Benzene	1200	540	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284679A	GP-5(1.5-2)	G01PA	Naphthalene	30000 D	540	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284679B	GP-5(1.5-2)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284679B	GP-5(1.5-2)	G10PA	Anthracene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benz(a)anthracene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benzo(a)pyrene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benzo(b)fluoranthene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benzo(ghi)perylene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Chrysene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Fluorene	120000	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Phenanthrene	110000	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Pyrene	11000 J	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	S06	WATER BY EVAP	17.9		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284680A	GP-6(0-0.5)	G01PA	Benzene	76 J	270	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284680A	GP-6(0-0.5)	G01PA	Naphthalene	190 J	270	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284680B	GP-6(0-0.5)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284680B	GP-6(0-0.5)	G10PA	Anthracene	ND	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benz(a)anthracene	250 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benzo(a)pyrene	330 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benzo(b)fluoranthene	440	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benzo(ghi)perylene	ND	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Chrysene	410 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Fluorene	ND	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Phenanthrene	390 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Pyrene	440	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	S06	WATER BY EVAP	23.0		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284681	TB	G01PA	Benzene	ND	250	ug/kg as rcvd	06/04/2002	06/17/2002	06/17/2002	PSS
284681	TB	G01PA	Naphthalene	ND	250	ug/kg as rcvd	06/04/2002	06/17/2002	06/17/2002	PSS

Approved by: [signature]

Report Prep: M. Hamalak

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 68717:

Code	Description
760	Ext.Proc.-Sonication BN (Solids) SW 846 Method 3550B-mod.
G01PA	SW-846 5035/8260B/PA UST VOCs - BTEX;Cumene;Naph.;EDB;EDC
G10PA	SW-846 8270/PA UST PAHs
S06	Water by evaporation/ EPA-600 Mtd 160.3

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington Laboratory Chain Of Custody

Quote No:

Ship To:

Lab Job No: 75702702

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Client/Office: SECOR Phone: 484 875 3075

Address: 102 PICKERING WAY, ST. 102 EXTON PA

Send report to: STEVE BAGGETT Fax: 484 875 9286

Project Description: SUNOCO PHILADELPHIA REFINERY

Send invoice to: SAME

Address:

P.O. No: 1012

TAT (for data): Identify number of working days below);...or Date-->:

☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(~12) ☐ Other

Lab Staffer confirming Rush/Firm: Hardcopy TAT Date?:

Report Type: ☐ Results only ☐ Data +QC ☐ Reduced Deliv. ☐ Other: ☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO

If YES?: ☒ Act II ☐ UST ☐ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other:

Analytical Protocol: ☐ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other:

Analysis Required

Lab Use Only: Rec. 10/12/99; Due Date:; Cooler Trip 15 deg C; custody seal yes no ✓; No.:; Summary No. 68717; Lab Log No.:

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters) / Container Data

ID (NJ limit=7 characters)	date	time	matrix	grab	comp	type	no.	preservative	pH	PADEP Fuel Oil 4,5,6 &	LUBE OIL & FLUIDS	BENZENE, NAPHTHALENE 5035/8260B	FLUORENE, ANTHRACENE	PHENANTHRENE, PYRENE	BENZO(A) ANTHRACENE	CHRYSENE	BENZO (B) FLUORANTHENE	BENZO (A) PYRENE	BENZO(g,h,i) PERYLENE										
GP-1 (0-.5)	6/4/02	1015	SOIL	✓	~~X~~	Sel velocity	2	METHANOL				✓	✓	✓	✓	✓	✓	✓	✓										284673 A+B
GP-2 (.5-1)		1105		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284674
GP-2 (8.5-9)		1120		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284675
GP-3 (1.5-2)		1245		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284676
GP-4 (1.5-2)		1315		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284677
GP-4 (3.5-4)		1325		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284678
GP-5 (1.5-2)		1340		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284679
GP-6 (0-.5)		1400		✓			2					✓	✓	✓	✓	✓	✓	✓	✓										284680
TRIP BLANK			METH			40g	1					✓																	284681

Comments/Special Handling/Storage/Disposal-->:

Sampled by: SERGIO MORESCALCHI

Phone no: 484 875 3075

Relinquished By:		Received By:		Method of Shipment
Name: SERGIO MORESCALCHI	Date: 6/4/02	Name: [signature]	Date: 6/4/02	Airbill No.
Organization: SECOR	Time: 1530	Organization: TWGINT	Time: 1530	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

Washington Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: Secor

Assigned Summary # 68717

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	15 °C		
2.3 Documentation			
Airbill Present	☐ Yes, # N/A		☐ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	
2.5 Preservation (water samples only)			
Metals pH<2	☐ Yes	☐ No*	☒ NA
Cyanides pH >12	☐ Yes	☐ No*	☒ NA
Sulfides pH >9	☐ Yes	☐ No*	☒ NA
BNA, Pest, PCB, CN, Phenols, NO_3 Cl_2 absent	☐ Yes	☐ No*	☒ NA
TOC, COD, Oil/Grease, Phenols, TPH pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P. pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?	☐ Yes*	☐ No	☒ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: DAG Date: 6/4/02

admin3/QA/lList/SR Checlist rev10/01

The Washington Group
Environmental Laboratory

F-32-1-6098

REPORT OF NONCONFORMANCES AND COMMENTS

This Form is used for reporting any nonconformances (anything unusual) encountered in the performance of the analysis. Also recorded are any comments about the nature of the sample that might aid in the interpretation of the data.

Laboratory Sample Number: All

Summary Number: 68717

Date: 06/24/2002

Reported by: KMI

Analysis:

Comments (including nonconformances):

The samples were hand-delivered to the laboratory in a cooler with ice. Sample temperature on receipt was 15 C.

Approved: _____

SECOR International Incorporated
Philadelphia Office
102 Pickering Way, Suite 200
Exton, Pennsylvania 19341
Phone: (484) 875-3075
FAX: (484) 875-9286

LETTER OF TRANSMITTAL

Attn: Jim Tucker **Date:** 12/20/02

Company: Sunoco

Address: Philadelphia Refinery

Project: AST 271

Job No:

RE: Site Characterization Report

ENCLOSED:
( ) Proposal
( ) Contract
(X) Report
( ) Letter Report
( ) Other:

FOR:
(X) As Requested
( ) Review
( ) Your Information
( ) Approval
( ) Signature
( ) Return
( ) Other:

Comments:
Jim: attached are 2 copies of the Site Characterization Report for AST 271. Please send the original stamped copy to PADEP.

Thanks –

Signature: Steve Baggett
Title:

cc:

SECOR

SECOR
INTERNATIONAL
INCORPORATED

www.secor.com

SUNOCO, INC. (R&M)

AST 271 AREA
GIRARD POINT PROCESSING AREA
PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

SITE CHARACTERIZATION REPORT

December 20, 2002

Prepared for:

Sunoco, Inc. (R&M)
3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Completed by:

SECOR International Incorporated
102 Pickering Way, Suite 200
Exton, PA 19341

Steve Baggett

Steve Baggett, P.G. (PG000790G)
Principal Hydrogeologist

Table of Contents

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Objectives 2
1.3 Report Organization 2
2.0 SITE SETTING 3
2.1 Site Location and Description 3
2.2 Hydrogeology 3
2.3 Previous Investigations 4
3.0 SITE CHARACTERIZATION METHODS 5
4.0 SITE CHARACTERIZATION RESULTS 7
5.0 SITE CONCEPTUAL MODEL 9
6.0 ECOLOGICAL SCREENING 10
7.0 SUMMARY AND RECOMMENDATIONS 11
7.1 Conclusions 11
7.2 Recommendations 12
8.0 REFERENCES 13

List of Tables

4-1 Summary of Soil Analytical Results – June 4, 2002

4-2 Summary of Soil Analytical Results – September 17, 2001

List of Figures

1-1 Site Location Map

1-2 Site Plan – Girard Point Processing Area

2-1 Groundwater Elevation Map – November 8, 2001 for the Girard Point Processing Area

3-1 Soil Boring Locations

4-1 Soil Boring Analytical Results – June 4, 2002 and September 17, 2002

List of Appendices

A Soil Boring Logs

B Soil Sample Analytical Data – June 4, 2002

C Soil Sample Analytical Data – September 17, 2002

1.0 INTRODUCTION

This Site Characterization Report (SCR) was prepared on behalf of Sunoco, Inc. (R&M) (Sunoco) for investigative activities associated with aboveground storage tank (AST) closure within the Girard Point Processing Area of the Philadelphia Refinery located in Philadelphia, Pennsylvania (**Figure 1-1**). The investigation was conducted in support of the site characterization requirements of Pennsylvania Code Title 25 § 245.310 under the Administration of Storage Tank and Spill Prevention Program.

1.1 Background

Sunoco, Inc. completed the in-place closure of AST 271 on May 16, 2002. AST 271 is a 3,360,000 gallon tank, approximately 118 feet in diameter, and is situated on concrete pad within a diked area with other active ASTs (refer to **Figures 1-2** and **1-3**). Sunoco has reported that AST 271 formerly contained crude oil.

In accordance with the requirements of the Administration of Storage Tank and Spill Prevention Program, Sunoco retained SECOR International, Inc. (SECOR), to perform soil characterization activities following the in-place closure of the AST. During June 2002, soil samples were collected from six Geoprobe soil borings around the perimeter of the AST. Since the AST formerly contained crude oil, each soil sample was analyzed for Pennsylvania Department of Environmental Protection (PADEP) Pennsylvania Land Recycling Program (Act 2) short list of parameters for Fuel Oil #4, #5 #6, and Lubricating Oils and Fluids in soils. The list includes the analyses of benzene and naphthalene by EPA Method 5035/8260B and fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i) perylene by EPA Method 8270C.

The analytical results for the soil samples were compared to Medium Specific Concentrations (MSCs) established by PADEP under Act 2 to guide site remediation. The results of the investigation indicated that soil Used Aquifer Nonresidential Soil-to-Groundwater MSCs were exceeded for benzene in two samples.

Upon receipt of laboratory data from the soil sampling activities, Sunoco notified the PADEP on June 26, 2002 of the confirmation of a reportable release from AST 271. In response to this notification, PADEP issued a Notice of Violation to Sunoco in a letter dated July 31, 2002.

Included in PADEP's letter was a request to characterize the extent of impact associated with AST 271 and submit a Site Characterization Report.

1.2 Objectives

The objectives of Sunoco are to perform a characterization of subsurface impact in the vicinity of AST 271 as requested by PADEP. In order to address PADEP's request, additional soil sampling was performed on September 17, 2002. Soil sampling and analyses performed during June 2002 and September 2002 are documented in this report.

1.3 Report Organization

This Site Characterization Report has been developed in accordance with PADEP guidelines. The report sections are described as follows:

Section 1.0 - Provides a general introduction to the site, project background, and the objectives of the site investigation.

Section 2.0 - Summarizes the setting, including site location and description, geology and hydrogeology.

Section 3.0 - Provides a description of investigation methods implemented in order to characterize the site.

Section 4.0 - Provides a discussion of the results of the site investigation including geology and soil analytical results.

Section 5.0 - Presents a discussion of the site conceptual model.

Section 6.0 - Presents the preliminary ecological screening.

Section 7.0 - Presents conclusions of the investigations and recommendations.

2.0 SITE SETTING

2.1 Site Location and Description

AST 271 is located within the Girard Point Processing Area of the Philadelphia Refinery (refer to **Figure 1-1**). The Girard Point Processing Area is generally bounded to the north, west and south by the Schuylkill River and to the east by the Point Breeze Processing Area of the refinery and other industrial properties of south Philadelphia. AST 271 is located in the northeast portion of the Girard Point Processing Area and is approximately 2,000 feet east of the Schuylkill River (refer to **Figure 1-2**). AST 271 is situated in a containment bermed area.

Surface water runoff within the refinery is controlled by a storm water management system. Storm water is routed to the Girard Point Waste Water Treatment Plant and discharges through a NPDES permitted outfall to the Schuylkill River.

2.2 Hydrogeology

The Girard Point Processing Area is located within the Coastal Plain Physiographic Province. The area is generally flat and ranges in elevation from just above sea level to approximately 20 feet in elevation (above mean sea level). As mentioned above, the Girard Point Processing Area is bounded to the north, west, and south by the Schuylkill River which is tidal in this reach.

Previous investigations in the area indicate that the surficial geology consists of localized fill, Quaternary Alluvium and the Pliestocene-age Trenton Gravel. The Quaternary Alluvium in the area is reported to consist predominantly of sandy silt and sandy micaceous clay. This unit generally ranges in thickness from 0 to 20 feet. The Trenton Gravel underlies the Quaternary Alluvium.

The Trenton Gravel is described as gray or pale-reddish-brown, very gravelly sand interstratified with semi consolidated limonite cemented sand and clay-silt beds; and includes areas of alluvium and swamp deposits. The sediments are poorly sorted (Balmer and Davis, 1996). The thickness of the Trenton Gravel is generally less than 20 feet and may approach 50 feet locally. The Trenton Gravel is underlain by a sequence of Upper Cretaceous Age sand and clay units which overlie the crystalline bedrock of the Wissahichon Formation. The Wissahickon Formation is described as dark- to light-gray, well foliated schist and gneiss, having some quartz- and/or

feldspar-rich layers; quartz, feldspar, biotite, and muscovite are the primary minerals (Berg and Dodge, 1981).

Figure 2-1 is a groundwater elevation map prepared by Handex for the Girard Point Processing Area from measurements recorded on November 8, 2001 during the annual sampling event (the map was included in the 2001 progress report for the Girard Point Processing Area submitted to PADEP by Sunoco). As indicated on **Figure 2-1**, the water table surface in the vicinity of AST 271 is in a general southwesterly direction.

2.3 Previous Investigations

Several previous environmental investigations have been performed at the Girard Point Processing Area under various PADEP and United States Environmental Protection Agency (USEPA) programs. Recently (during 2001), Sunoco submitted appropriate documentation for the Girard Point Processing Area in accordance with the USEPA Environmental Indicators (EI) Program being used by the Resource Conservation and Recovery Act (RCRA) Corrective Action program. The documentation submitted to USEPA by Sunoco under this program indicated that the migration of "contaminated groundwater" from the facility is under control and "current human exposures" are under control. Sunoco also performs liquid level monitoring of a network of groundwater monitoring wells, operation of remedial systems, and annual groundwater sampling of six perimeter wells within the Girard Point Processing Area. This data is provided to PADEP in quarterly and annual status reports.

3.0 SITE CHARACTERIZATION METHODS

This section describes the methods of the site characterization activities. Site characterization activities included soil sampling and laboratory analyses. Soil samples were collected during June and September 2002. All field activities were performed under a site-specific Health and Safety Plan which included site-specific health and safety training requirements of Sunoco.

Six soil borings were advanced in the vicinity of AST #271 on June 4, 2002 by B.L. Myers using Geoprobe continuous soil sampling techniques. The borings were advanced under the supervision of a SECOR Professional Geologist certified in Pennsylvania.

It was intended that two samples (one sample at a depth of 0 to 2 feet below ground surface (bgs) and one at a depth greater than 2 feet) be collected from each of 4 soil borings advanced to the groundwater table or drilling refusal. However, as a result of localized shallow water conditions and the lack of soil sample recovery (due the presence of fill), a total of eight samples were collected from 6 borings. The soil borings are designated GP-1 through GP-6. Soil boring locations are depicted on **Figure 3-1**.

Water was encountered in GP-1 and GP-6 at a depth of 0.5 feet bgs. Therefore, samples were collected at a depth of 0 to 0.5 feet bgs at these locations. At GP-2, water was encountered at a depth of 9 feet and a surface soil sample (0.5 to 1.0 feet bgs) and a sample immediately above water (8.5 to 9.0 feet bgs) was collected. A soil sample was collected from GP-3 at a depth of 1.5 to 2.0 feet bgs. No sample recovery was observed in the Geoprobe core barrel at greater depths at this location due to the nature of the material. Soil samples were collected from GP-4 at depths of 1.5 to 2.0 feet bgs and 3.5 to 4.0 feet bgs (water was encountered at 7 feet bgs but a sample could not collected immediately above water due the absence of sample recovery from the Geoprobe core barrel). A sample was also collected from GP-5 at a depth of 1.5 to 2.0 feet bgs (water was encountered at 9 feet bgs but no sample recovery was observed from 4 to 9 feet bgs).

Observations recorded during soil boring installation are recorded on soil boring logs presented in **Appendix A**. The soil boring logs include lithologic descriptions of material encountered and relative soil volatile organic vapor content based on photoionization detector (PID) readings.

After collection, the soil samples were placed in appropriate laboratory containers, labeled, placed in an ice-chilled cooler and logged on a chain-of-custody form. The soil samples were

delivered to Washington Group Environmental Services Laboratory of Boothwyn, Pennsylvania for analysis.

Since AST 271 formerly contained crude oil, each soil sample was analyzed for Pennsylvania Department of Environmental Protection (PADEP) Pennsylvania Land Recycling Program (Act 2) short list of parameters for Fuel Oil #4, #5 #6, and Lubricating Oils and Fluids in soils. The list includes the analyses of benzene and naphthalene by EPA Method 5035/8260B and fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i) perylene by EPA Method 8270C.

For quality assurance/quality control (QA/QC) purposes, a trip blank accompanied sample shipment for analyses of benzene and naphthalene were analyzed by EPA Method 5035/8260B.

As will be described in Section 4.0, Nonresidential Used Aquifer Soil-to-Groundwater MSCs were exceeded at two locations (GP-4/1.5 to 2.0 feet bgs and GP-5/1.5 to 2.0 feet bgs) for benzene. As a result, soil samples were collected on September 17, 2002 in GP-4 and GP-5 at a depth of 1.5 to 2.0 feet bgs using a hand driven stainless steel auger. Each sample was then appropriately containerized and shipped to Lancaster Laboratories of Lancaster Pennsylvania for Sythetic Precipitation Leaching Procedure (SPLP) analyses of benzene.

Also on September 17, 2002, a soil sample was collected at the location of GP-5 at a depth of 3.5 to 4.0 feet bgs in order to provide vertical delineation (vertical delineation below GP-4/1.5 to 2.0 feet bgs had already been attained – refer to Section 4.0). This sample was analyzed for benzene using method 8260B by Lancaster Laboratories.

4.0 SITE CHARACTERIZATION RESULTS

This section of the Site Characterization Report presents the results of the characterization activities described in Section 3.0. These activities were performed in order to characterize soil and groundwater conditions in the vicinity of AST 271.

As indicated on the boring logs (refer to **Appendix A**), the materials encountered were largely silt, sand, and fill material. At several split-spoon sampling intervals, no soil recovery was obtained due to the presence of fill material.

As has been described, water was encountered at depths ranging from 0.5 feet bgs to 9 feet bgs. This variability is attributed to the heterogeneous nature of the materials encountered. Liquid level data was by Handex recorded from monitoring wells in the Girard Point Processing Area on October 31, 2002 during the semi-annual well gauging event. During the event, the monitoring wells closest to AST 271 (refer to **Figure 2-1**), C-56 (west of AST 271) and C-58 (northwest of AST 271) reported depths of water of 2.46 feet and 1.52 feet, respectively. No light nonaqueous phase liquids (LNAPL) were detected in either well. As previously described, groundwater flow in this area is in a general southwesterly direction, towards the Schuylkill River which is 2,000 feet west of AST 271.

The soil analytical data for the June 4, 2002 sampling event is summarized on **Table 4-1.** The analytical results for the soil samples were compared to the cleanup criteria established by for PADEP under Act 2. Under the regulations implementing Act 2, Medium Specific Concentrations (MSCs) for soils include two components. PADEP has developed MSCs for soils are based on direct contact exposure scenarios and PADEP has developed procedures for selecting MSCs for soils that are designed to protect groundwater from the potential impacts that could be caused by the migration of regulated substances from soils into the groundwater. Soil sample results were compared to Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs and Used Aquifer Nonresidential Soil-to-Groundwater MSCs. These MSCs are listed in Appendix A, Tables 3A and 3B (revised November 24, 2001) of the Act 2 Rules and Regulations.

Figure 4-1 depicts sample results that were reported above an MSC. No samples exceeded Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs. However, the Used Aquifer Nonresidential Soil-to-Groundwater MSC for benzene of 0.5 mg/kg was exceeded at GP-

4 (1.5-2.0) and GP-5 (1.5-2.0) which reported benzene concentrations of 2.2 mg/kg and 1.2 mg/kg, respectively. Benzene was not detected in GP-4 (3.5-4.0). Copies of the laboratory analytical data from the June 2002 sampling event are presented in **Appendix B**.

The soil analytical results from the September 17, 2002 soil sampling event are presented on **Table 4-2**. As indicated, SPLP results for benzene from GP-5 (1.5 – 2.0) were below detection levels. However, the SPLP results from GP-4 (1.5 – 2.0) reported 38 ug/l benzene which exceeds the Groundwater Used Aquifer MSC for benzene of 5 ug/l. Benzene was not detected in GP-5 (3.5 – 4.0). Copies of the laboratory analytical data for the September 2002 sampling event are presented in **Appendix C**.

The results of the June 4, 2002 and September 17, 2002 sampling events indicate that the only sample location exceeding a soil MSC is GP-4 (1.5 – 2.0) which exceeds the Soil-to-Groundwater MSC for benzene. As has been described, benzene was not detected in GP-4 (3.5 to 4.0) which was collected directly below GP-4 (1.5 – 2.0).

5.0 SITE CONCEPTUAL MODEL

This site conceptual model is presented to briefly characterize subsurface conditions and identify potential exposure and migration pathways, and describe the migration of constituents dissolved in groundwater. Data compiled during the site characterization was used to develop this conceptual model.

AST 271 is located within the Girard Point Processing Area of the Philadelphia Refinery. It is situated within a AST containment berm with other ASTs and was formerly used to store crude oil. The vicinity of the Philadelphia Refinery is serviced with public water by the City of Philadelphia Water Department. Overall groundwater flow in the area is to the west and southwest towards the Schuylkill River.

Subsurface conditions were characterized through the installation and sampling of soil borings. As has been described, benzene has been detected in soil above the Soil-to-Groundwater MSCs in two soil samples. Those two samples were also submitted for SPLP analyses (benzene was detected above the Groundwater Used Aquifer MSC in one of these samples). Vertical delineation below the samples exceeding the MSC for benzene has been achieved. No sample was reported above Direct Contact MSCs.

The release mechanism or precise release location which resulted in the observed concentrations is not known based on the investigations performed. However, current and future site conditions eliminate exposure pathways or provide personal protection for site workers as is described below.

Access to the Philadelphia Refinery is through guarded gates only and is restricted to Sunoco employees and Sunoco-approved visitors and contractors. Therefore, there is no potential exposure pathway for trespassers. Site workers are required to wear appropriate personal protection equipment (PPE) in accordance with refinery operational protocols. In addition, each individual operational unit has its own work permits and PPE requirements. There are no enclosed occupied structures within the immediate vicinity of AST 271 and Sunoco has performed indoor air monitoring in areas of the refinery to verify that exposure to indoor area is within Occupational Safety and Health Administration (OSHA) standards. As mentioned, the area is serviced with public water. Therefore groundwater ingestion is not a completed pathway.

6.0 ECOLOGICAL SCREENING

A preliminary ecological screening was performed in order to assess whether surface soils and groundwater at the site have the potential to pose significant ecological concerns and if further ecological evaluation is required. The ecological screening is based on site observations and the investigative results presented in this Site Characterization Report and other site investigations.

As has been described, AST 271 was reported to have contained crude oil. However, the only constituent detected above a MSC was benzene (the Used Aquifer Nonresidential Soil-to-Groundwater MSC was exceeded in two surface soil samples). Under the Statewide Health Standard ecological screening process, no further ecological action is required if the constituents detected on-site are associated with light petroleum products. In addition, benzene was not detected in soil samples below the samples in which the MSC for benzene was exceeded.

Specific site features associated with the current and future land use and the storm water management system at the site preclude the occurrence of habitats of concern and eliminate significant ecological exposure pathways to off-site receptors. The Girard Point Processing Area is an active refinery and will continue to be used for that purpose. The immediate vicinity of AST 271 consists of other active ASTs within a containment berm. The potential transport of site-related constituents in surface soils through storm water runoff from within the containment berm is controlled by the site storm water management system.

As indicated by the discussion presented above, current and future land use precludes the occurrence of habitats of concern within the area of interest, and surface soils and groundwater do not pose significant ecological concerns to off-site receptors. Therefore, no further ecological evaluation is required.

7.0 SUMMARY AND RECOMMENDATIONS

This Site Characterization Report was prepared on behalf of Sunoco, Inc. (R&M) (Sunoco) for investigative activities associated with aboveground storage tank (AST) closure within the Girard Point Processing Area of the Philadelphia Refinery located in Philadelphia, Pennsylvania. The investigation was conducted in support of the site characterization requirements for Pennsylvania Code Title 25 § 245.310 under the Administration of Storage Tank and Spill Prevention Program.

AST 271 is located approximately 2,000 feet east of the Schuylkill River. AST 271 is situated in a containment bermed area with other ASTs. Sunoco has indicated that the AST formerly contained crude oil.

Soil sampling activities performed following the in-place closure of AST 271 reported constituent concentrations above Medium Specific Concentrations (MSCs) established by PADEP under Act 2 to guide site remediation. Upon receipt of laboratory data, Sunoco notified the PADEP on June 25, 2002 of the confirmation of a reportable release from AST 271. In response to this notification, PADEP issued a Notice of Violation to Sunoco in a letter dated July 31, 2002. Included in PADEP's letter was a request to perform additional site characterization.

This investigation was performed to provide the additional characterization in the vicinity of AST 271 as requested by PADEP. Soil samples were collected during June 2002 and September 2002. Since AST 271 was reported to have contained crude oil, soil samples were analyzed for the PADEP short list of parameters for Fuel Oil #4, #5, #6 and Lubricating Oils and Fluids in soils.

7.1 Conclusions

The findings of site characterization activities are summarized below:

- During June 2002, eight soil samples were collected from six soil borings. The only parameter exceeding a MSC was benzene. The Used Aquifer Nonresidential Soil-to-Groundwater MSC for benzene (0.5 mg/kg) was exceeded at GP-4 (1.5 – 2.0) and GP-5 (1.5 – 2.0) which reported benzene concentrations of 2.2 mg/kg and 1.2 mg/kg, respectively.

- During September 2002, soil samples were collected at GP-4 (1.5 – 2.0) and GP-5 (1.5 – 2.0) for the SPLP analyses of benzene. The results of GP- 5 (1.5 – 2.0) were below detection

levels and GP-4 (1.5 – 2.0) reported a concentration of 38 ug/l which is above the Nonresidential Used Aquifer Groundwater MSC for benzene of 5 ug/l.

- Soil samples collected below GP-4 (1.5 – 2.0) and GP-5 (1.5 – 2.0) at depths of 3.5 to 4.0 feet bgs reported benzene below detection levels.

- A preliminary ecological screening was performed in order to assess whether surface soils and groundwater at the site have the potential to pose significant ecological concerns. The only constituent of interest reported above MSCs was benzene (a light-end hydrocarbon). Current and future land use precludes the occurrence of habitats of concern. Therefore, no further ecological evaluation is required.

7.2 Recommendations

In September 2001, Sunoco submitted appropriate documentation for the Girard Point Processing Area in accordance with the USEPA Environmental Indicators (EI) Program being used by the RCRA Corrective Action program. The documentation submitted to USEPA by Sunoco under this program indicated that the migration of "contaminated groundwater" from the facility is under control and "current human exposures" are under control. This documentation has been forwarded to PADEP's Water Quality Management Section. Sunoco also performs semi-annual liquid level monitoring of the network of groundwater monitoring wells, routine operation of remedial systems, and annual groundwater sampling of six perimeter wells in the Girard Point Processing Area (as described, LNAPL has not been detected in monitoring wells closest to AST 271). This data is provided to PADEP in quarterly and annual status reports.

Although the Soil-to-Groundwater MSC for benzene is exceeded at one surface soil location (the subsurface sample at that location was below the MSC), groundwater is not used for potable purposes at the site and there are no occupied structures in the vicinity of AST 271. Therefore, there is no exposure pathway. Since Sunoco is not seeking a release of liability, Sunoco has indicated that subsurface impacts in the vicinity of AST 271 will be managed through other facility-wide programs.

8.0 REFERENCES

Balmer, W.T., and Davis, D.K., 1996. Groundwater Resources of Delaware County, Pennsylvania. Prepared by the United States Geological Survey, Water Resources Division, in cooperation with the Pennsylvania Geological Survey. Water Resource Report 66. 65 pps.

Bouwer H. and R.C. Rice, 1976. "A Slug Test For Determining Hydraulic Conductivity of Uncommed Aquifers With Completely or Partially Penetrating Wells". Water Resources Research, vol. 12, no. 3.

Paulachok, G.N., 1991. "Geohydrology and Ground-Water Resources of Philadelphia, Pennsylvania. " United States Geological Survey Water-Supply Paper 2346. Prepared in cooperation with the City of Philadelphia Water Department.

Pennsylvania Department of Environmental Protection, December 2001. "Pennsylvania's Land Recycling Program Technical Guidance Manual".

Table 4-1

AST 271
Summary of Soil Analytical Results (ug/Kg)
June 4, 2002

Sunoco Philadelphia Refinery

Sample	0-2 feet	2-15 feet	Soil to Groundwater	GP-1(0-0.5)		GP-2 (0.5-1.0)		GP-2 (8.5-9.0)		GP-3 (1.5-2.0)		GP-4 (1.5-2.0)		GP-4 (3.5-4.0)		GP-5 (1.5-2.0)		GP-6 (0-0.5)	
Date	Non-Residential	Non-Residential	Non-Residential	6/4/02		6/4/02		6/4/02		6/4/02		6/4/02		6/4/02		6/4/02		6/4/02	
Constituent	Direct Contact (1)	Direct Contact (1)	Used Aquifer (2)	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL
Benzene	210,000	240,000	500	ND	270	ND	220	ND	410	150 J	370	**2,200**	470	ND	350	**1,200**	540	76 J	270
Naphthalene	56,000,000	190,000,000	25,000	ND	270	ND	220	920	410	1,200	370	1,500	470	720	350	3000 D	540	190 J	270
Anthracene	190,000,000	190,000,000	4,700,000	ND	370	ND	370	ND	580	ND	530	ND	650	390 J	560	ND	16,000	ND	440
Benzo(a)anthracene	110,000	190,000,000	320,000	ND	370	ND	370	ND	580	ND	530	ND	650	440 J	560	ND	16,000	250 J	440
Benzo(a)pyrene	11,000	190,000,000	46,000	ND	370	ND	370	ND	580	ND	530	ND	650	410 J	560	ND	16,000	330 J	440
Benzo(b)fluoranthene	110,000	190,000,000	160,000	ND	370	ND	370	ND	580	ND	530	ND	650	460 J	560	ND	16,000	440	440
Benzo(ghi)perylene	170,000,000	190,000,000	180,000	ND	370	ND	370	ND	580	ND	530	ND	650	ND	560	ND	16,000	ND	440
Chrysene	11,000,000	190,000,000	220,000	ND	370	ND	370	ND	580	ND	530	ND	650	580	560	ND	16,000	410 J	440
Fluorene	110,000,000	190,000,000	380,000	ND	370	ND	370	ND	580	ND	530	750	650	400 J	560	120,000	16,000	ND	440
Phenanthrene	190,000,000	190,000,000	10,000,000	ND	370	ND	370	600	580	290 J	530	840	650	1,500	560	110,000	16,000	390 J	440
Pyrene	84,000,000	190,000,000	220,000	ND	370	ND	370	570 J	580	ND	530	ND	650	1,400	560	11,000 J	16,000	440	440

Bold = Exceeds Soil-to-Groundwater standard
J = Estimated Value (concentration is below laboratory reporting limit)
D = Result obtained from different dilution than other samples
(1)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 A (Revised November 24, 2001)
(2)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 B (Revised November 24, 2001)

Table 4-2

AST 271
Summary of Soil Analytical Results
September 17, 2002
Sunoco Philadelphia Refinery

SPLP Soil Analytical Results (ug/L)

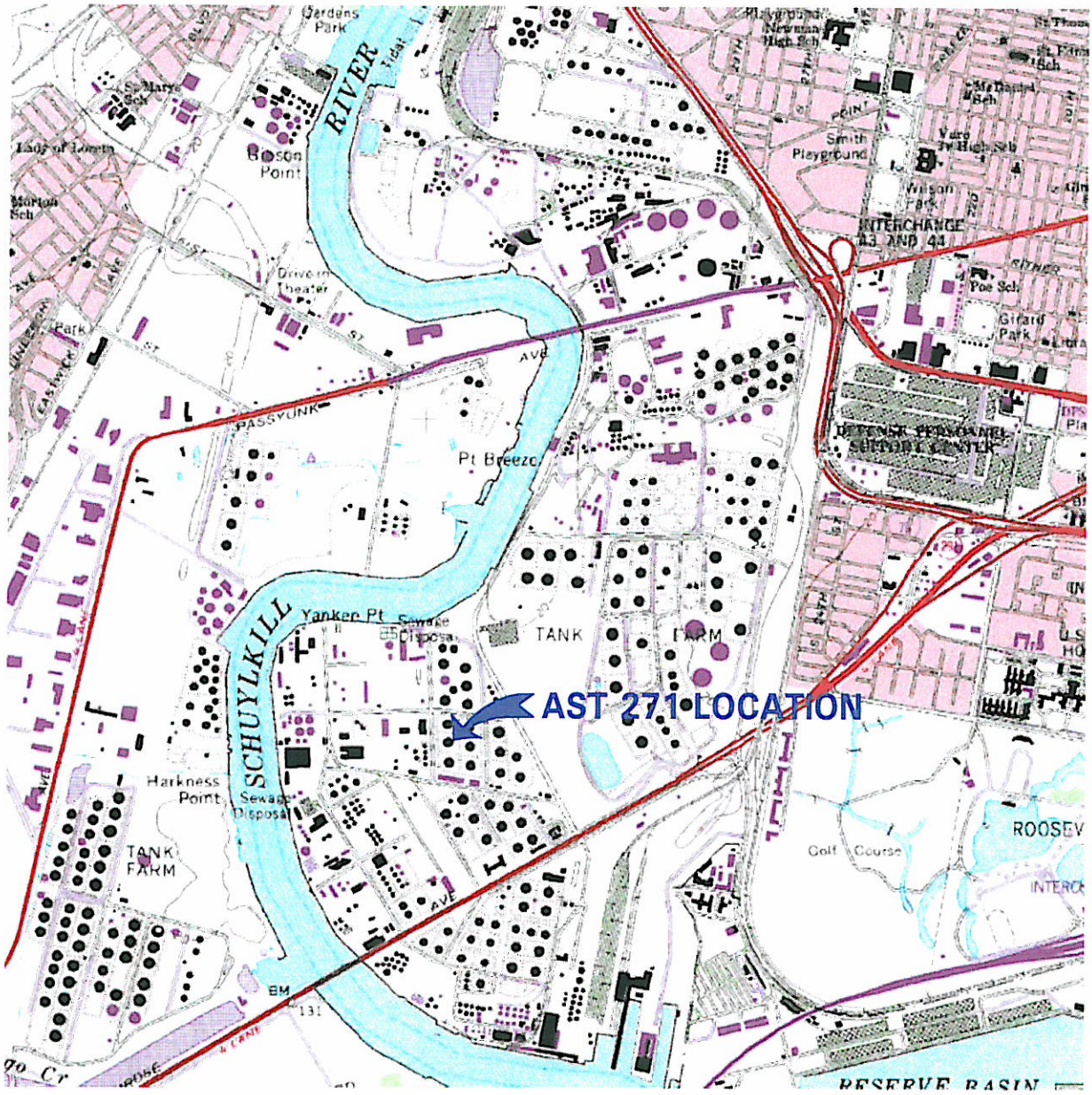
Sample Date	Groundwater Statewide Health Standard Non-Residential Used Aquifer	GP-4 (1.5-2) 9/17/02		GP-5 (1.5-2) 9/17/02	
Constituent	TDS<2500 (1)	Result	DL	Result	DL
Benzene	5	**38**	5	ND	5

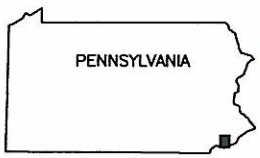
BOLD denotes exceedance of the Statewide Health Standard (SHS)
(1)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 1 (Revised November 24, 2001)
ND = Not Detected

Soil Analytical Results (ug/Kg)

	Statewide Health Standards				
Sample Date	0-2 feet Non-Residential	2-15 feet Non-Residential	Soil to Groundwater Non-Residential	GP-5 (3.5-4) 9/17/02	
Constituent	Direct Contact (2)	Direct Contact (2)	Used Aquifer (3)	Result	DL
Benzene	210,000	240,000	500	ND	390

(2)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 A (Revised November 24, 2001)
(3)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 B (Revised November 24, 2001)
ND = Not Detected





QUADRANGLE LOCATION

N

0 1/2 1

SCALE (MILES)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PHILADELPHIA, PENNSYLVANIA–NEW JERSEY; 1995

SECOR
International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 876-3075/876-9286 (FAX)

SITE LOCATION MAP
AST 271 AREA

SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: **1-1**

JOB#: 62SU.01006.02 APPR: DWN: KPM DATE: 12/16/02

N:/OFFICE-062

DWG: 62SU-1016-2-31(1-1)

LEGEND

- PROPERTY BOUNDARY
- A137 — VI MONITORING WELL LOCATION
- A120 — RFI MONITORING WELL LOCATION
- BF90D — EXISTING MONITORING WELL LOCATION
- WP-1 — RFI WELL POINT LOCATION
- RW-9 — RECOVERY WELL LOCATION
- ABANDONED VI MONITORING WELL
- ABANDONED MONITORING WELL
- SUMP

NOTES

1. 200 FOOT GRID BASED ON PENNSYLVANIA STATE RECTANGULAR COORDINATE SYSTEM, SOUTH ZONE 1927 N.A. DATUM
2. THIS MAP REPRESENTS DATA FOR THE "A", "B", "BF", AND "C" WELLS ONLY. DATA FOR DEEP WELLS A13D, A19D, A21D, B48D, BF90D, C50D, AND C65D IS NOT INCLUDED

N

0 500 1000

APPROXIMATE SCALE (FEET)

REFERENCE: HANDEX; TITLE: CONTOURED GROUNDWATER ELEVATION MAP, NOVEMBER 8, 2001; JOB NO.: 110535-01; DATE: 12/07/01

SECOR
International Incorporated
102 PICKERING WAY, STE 200
EXTON, PA 19341
(484) 876-3076/876-9286 (FAX)

SITE PLAN

GIRARD POINT PROCESSING AREA
PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: 1-2

JOB#: 62SU.01016.02 APPR: DWN: KPM DATE: 12/16/02

N:/SECOR-062

DWG: 62SU-1016-2-3SP(1-2)

LEGEND

- PROPERTY BOUNDARY
- A137 VI MONITORING WELL LOCATION
- A120 RFI MONITORING WELL LOCATION
- BF90D EXISTING MONITORING WELL LOCATION
- WP-1 RFI WELL POINT LOCATION
- RW-9 RECOVERY WELL LOCATION
- ABANDONED VI MONITORING WELL
- ABANDONED MONITORING WELL
- SUMP
- GROUND WATER CONTOUR LINE (dashed when inferred)
- 1.54 GROUND WATER ELEVATION (feet)
- NA CASING ELEVATION NOT AVAILABLE

NOTES:

1. CONTOUR INTERVAL = 1.0 ft.
2. 200 FOOT GRID BASED ON PENNSYLVANIA STATE RECTANGULAR COORDINATE SYSTEM, SOUTH ZONE 1927 N.A. DATUM
3. THIS MAP REPRESENTS DATA FOR THE "A", "B", "BF", AND "C" WELLS ONLY. DATA FOR DEEP WELLS A13D, A19D, A21D, B48D, BF90D, C50D, AND C65D IS NOT INCLUDED

N

0 500 1000

APPROXIMATE SCALE (FEET)

REFERENCE: HANDEX; TITLE: CONTOURED GROUNDWATER ELEVATION MAP, NOVEMBER 8, 2001; JOB NO.: 110535-01; DATE: 12/07/01

SECOR
International Incorporated
102 PICKERING WAY, STE 200
EXTON, PA 19341
(484) 875-3075/875-9286 (FAX)

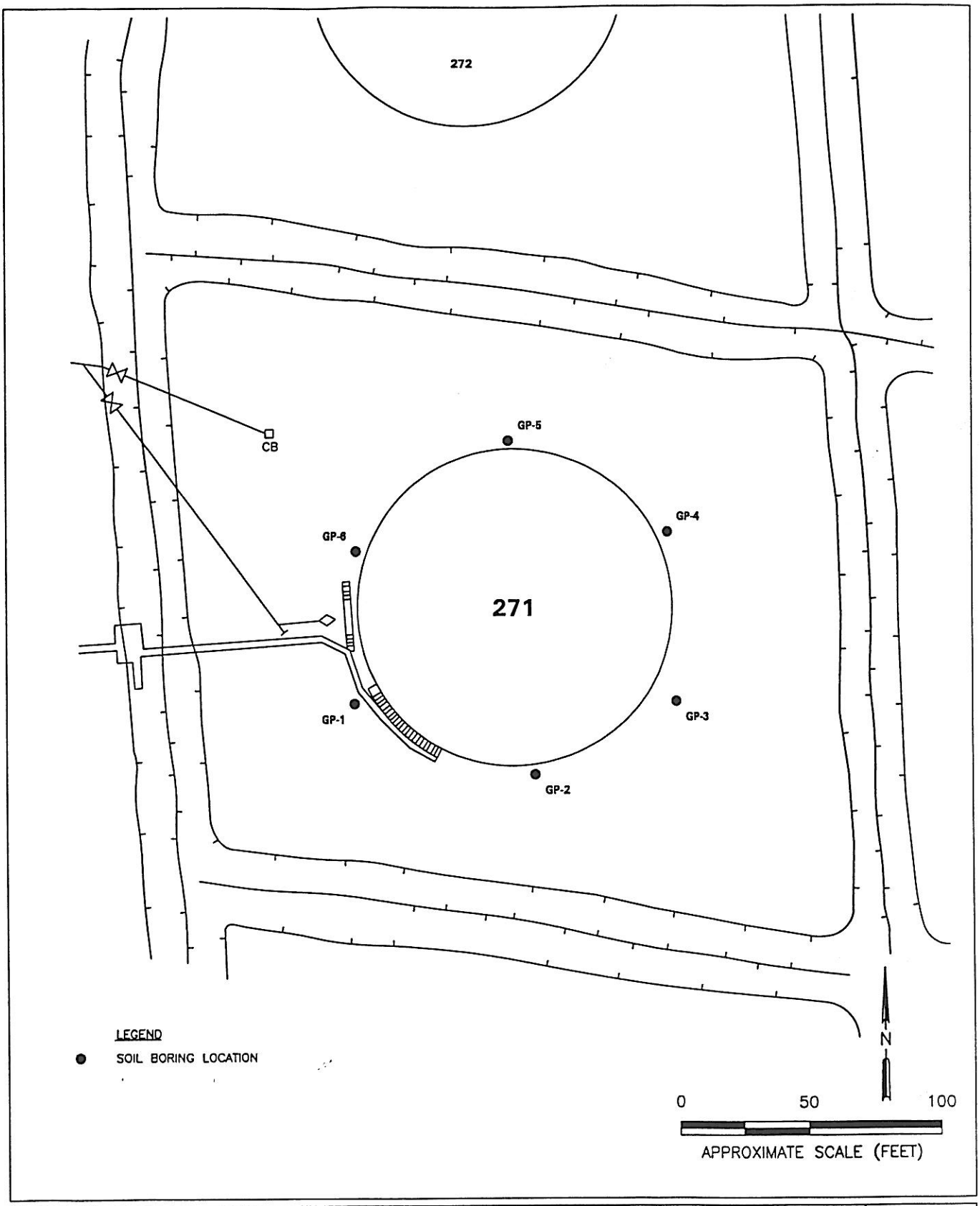
GROUNDWATER ELEVATION MAP
(NOVEMBER 8, 2001)
GIRARD POINT PROCESSING AREA
PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: 2-1

JOB#: 62SU.01016.02 APPR: DWN: KPM DATE: 12/16/02

N:/SECOR-062

DWG: 62SU-1016-2-3(2-1)



SECOR
International Incorporated
102 PICKERING WAY, STE 200
EXTON, PA 19341
(484) 875-3075/875-9286 (FAX)

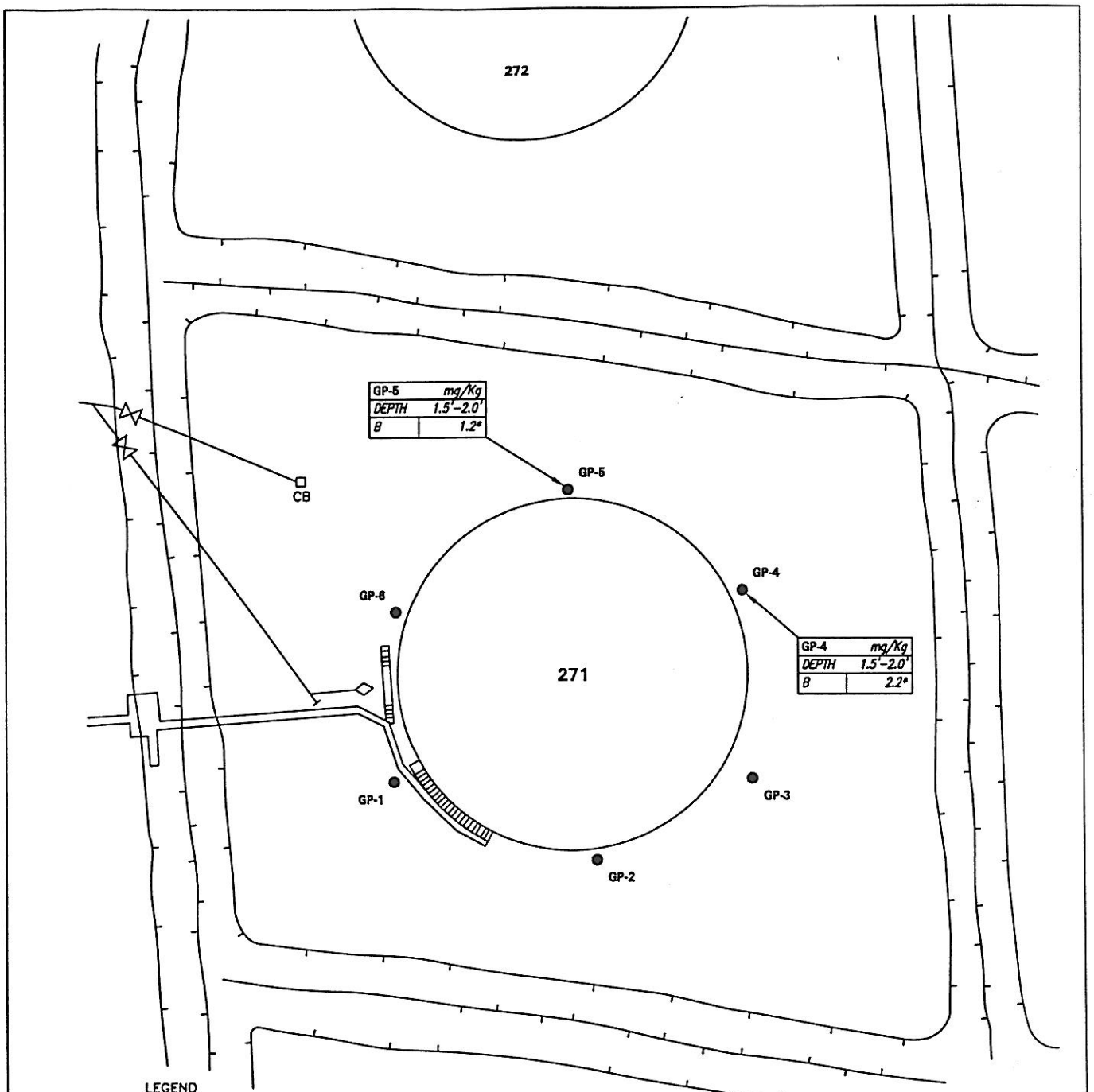
AST 271 SOIL BORING LOCATIONS
(JUNE 4, 2002 AND SEPTEMBER 17, 2002)
SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: **3-1**

JOB#: 62SU.01016.02 APPR: DWN: KPM DATE: 12/16/02

N:/SECOR-062

DWG: 62SU-1016-2-3SB(3-1)



LEGEND

● SOIL BORING LOCATION

	ANALYTE	DIRECT CONTACT SURFACE SOIL NON-RESIDENTIAL MSC (mg/Kg)	NONRESIDENTIAL SOIL-TO-GROUNDWATER USED AQUIFER MSC (mg/Kg)
B	BENZENE	210	0.5

* EXCEEDS SOIL-TO-GROUNDWATER MSCs

NOTE

ONLY SAMPLES EXCEEDING MSCs ARE PRESENTED

SECOR
International Incorporated
102 PICKERING WAY, STE 200
EXTON, PA 19341
(484) 875-3075/875-9286 (FAX)

AST 271 SOIL BORING ANALYTICAL RESULTS (JUNE 4, 2002 AND SEPTEMBER 17, 2002)

SUNOCO PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

FIGURE: **4-1**

JOB#: 62SU.01016.02 APPR: DWN: KPM DATE: 12/16/02

N:/SECOR-062

DWG: 62SU-1016-2-3A(4-1)

APPENDIX A

SOIL BORING LOGS

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-1
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
GP-1 (0.0-0.5')*		0.0		0	SAND, fine to coarse; little silt; little fine gravel; dark brown; moist			0	
					No recovery	SW			
		0.0		5	SILT; some fine SAND, pieces of organic matter @ approx. 6'; dark gray; moist/wet			5	
					No recovery	ML			
				10				10	
		0.0			SILT; little fine sand; trace clay; pieces of organic matter; dark gray; moist/wet				
				15	No recovery	OL		15	
					No recovery				
				20				20	
					Boring terminated at 21 feet. Groundwater encountered at approximately 0.5 feet during drilling.				
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis

Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts

Gradational Contact
Contact Located Approximately
Contact

Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062

DWG:

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-2
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
				0				0	
GP-2 (0.5-1.0')*		0.0			SAND, fine to coarse; little fine gravel; brown; dry	SW			
					No recovery				
		0.0			SILT and GRAVEL, fine; some fine to coarse sand; pieces of brick; black; dry	GM			
		0.0			SILT; some clay; little fine sand; dark gray; dry				
				5	No recovery			5	
		0.0			SILT; trace fine sand; trace pieces of organic material; moist	ML			
GP-2 (8.5-9.0')*				10				10	
					No recovery				
				15				15	
				20				20	
					No recovery				
				25				25	

Continued on the next page...

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS - No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-2
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
		0.0		25	SILT with some clay, trace fine sand; black; wet	ML		25	
					Boring terminated at 28 feet.				
				30				30	
				35				35	
				40				40	
				45				45	
				50				50	
				55				55	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062 DWG.

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-3
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
		0.0		0	SAND, fine to coarse; some fine gravel; little silt; pieces of brick; brown; dry	SW		0	
		0.0			SILT and SAND, fine; black; dry No recovery	SM			
GP-3 (1.5-2.0')*				5				5	
		0.0			SILT; some fine sand; black; wet No recovery	ML			
				10				10	
		0.0			SILT; some fine sand; black; wet				
				15	Boring terminated at 15 feet.			15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-4
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
		0.0		0	SAND, fine to coarse; little fine gravel; trace silt; brown; dry	SW		0	
GP-4 (1.5-2.0')*		6.3 5.8			SILT; some fine to coarse sand; black; dry SILT; some fine to coarse sand; little clay; little fine sand; black; dry	SM			
		0.0			SILT; fine sand; black; dry				
GP-4 (3.5-4.0')*		6.6			SILT; some fine sand; little clay; black; dry	ML			
				5	No recovery			5	
				10	Boring terminated at 10 feet. Groundwater encountered at approximately 7 feet during drilling.			10	
				15				15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062 DWG:

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-5
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
				0				0	
		0.0			SAND, fine to coarse; some fine gravel; brown; dry	SW			
GP-5 (1.5-2.0')*		10.6			SILT and SAND, fine to coarse; little fine gravel; black; dry	SM			
		0.0			SILT; little fine sand; little clay; black; dry	ML			
				5				5	
					No recovery				
		0.0			SILT; little sand; black; wet				
				10	Boring terminated at 10 feet.			10	
				15				15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS - No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062

DWG:

SECOR International Incorporated
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA 19341
(484) 875-3075/875-9286 (FAX)

FACILITY SUNOCO PHILADELPHIA REFINERY JOB# 62SU.01006.02.0003 BORING/WELL GP-6
LOCATION PHILADELPHIA, PENNSYLVANIA SURFACE ELEVATION NA
START (TIME/DATE) 06/04/02 FINISH 06/04/02 CASING TOP ELEVATION NA
LOGGED BY S. MORESCALCHI MONITORING DEVICE GEOPROBE
SUBCONTRACTOR AND EQUIPMENT B.L. MYERS BROS
COMMENTS

SAMPLE ID (DEPTH)	Sample Depth Interval (feet)	PID Reading (ppm)	Sheen	Depth Below Surface (feet)	Lithologic Description	Unified Soil Classification System SYM	Unified Soil Classification System PAT	Depth Below Surface (feet)	Well Construction Schematic
				5				5	
GP-6 (0.0-0.5')*		0.0		0	SAND, fine to coarse; little fine gravel; brown; dry			0	
		0.0			Brick				
					No recovery	SW			
				5				5	
		0.0			SILT; little clay; little fine sand; black; wet				
					No recovery	ML			
				10	Boring terminated at 10 feet.			10	
				15				15	
				20				20	
				25				25	

Field Screen/Lithologic Description Sample
Preserved Sample
No Recovery
* Sample Submitted for Laboratory Analysis
Groundwater Level at Time of Drilling
Static Groundwater Level
SD Sheen Detected
NS No Sheen Detected
NT Not Tested
(2.5Y 4/2) Munsell (1990) Soil Color Charts
Gradational Contact
Contact Located Approximately
Contact
Concrete
Bentonite
10/20 Colorado Silica Sand
2" PVC Blank Casing
2" PVC Screen Casing (0.010 slots)
End Cap

N:/SECOR-062 DWG:

APPENDIX B

SOIL SAMPLE ANALYTICAL DATA - JUNE 4, 2002

THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
Boothwyn, Pa. 19061
(610) 497-8000

Report For:

Secor Int., Inc. (Sun Philly Refin)
Mr. Steve Baggett
102 Pickering Way, Suite 200
Exton PA 19341

Job Number

75702702

Summary Number

68717

June 19, 2002

Reviewed by Mary Pierce
Project Manager Mary Pierce

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284673A	GP-1(0-0.5)	G01PA	Benzene	ND	270	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284673A	GP-1(0-0.5)	G01PA	Naphthalene	ND	270	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284673B	GP-1(0-0.5)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284673B	GP-1(0-0.5)	G10PA	Anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benz(a)anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benzo(a)pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benzo(b)fluoranthene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Benzo(ghi)perylene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Chrysene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Fluorene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Phenanthrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	G10PA	Pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284673B	GP-1(0-0.5)	S06	WATER BY EVAP	10.7		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284674A	GP-2(0.5-1)	G01PA	Benzene	ND	220	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284674A	GP-2(0.5-1)	G01PA	Naphthalene	ND	220	ug/kg-dry	06/04/2002	06/09/2002	06/09/2002	PSS
284674B	GP-2(0.5-1)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284674B	GP-2(0.5-1)	G10PA	Anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benz(a)anthracene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benzo(a)pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benzo(b)fluoranthene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Benzo(ghi)perylene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Chrysene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Fluorene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Phenanthrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	G10PA	Pyrene	ND	370	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284674B	GP-2(0.5-1)	S06	WATER BY EVAP	9.1		% as received	06/04/2002	06/05/2002	06/06/2002	MCH

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284675A	GP-2(8.5-9)	G01PA	Benzene	ND	410	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284675A	GP-2(8.5-9)	G01PA	Naphthalene	920	410	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284675B	GP-2(8.5-9)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284675B	GP-2(8.5-9)	G10PA	Anthracene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benz(a)anthracene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benzo(a)pyrene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benzo(b)fluoranthene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Benzo(ghi)perylene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Chrysene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Fluorene	ND	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Phenanthrene	600	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	G10PA	Pyrene	570 J	580	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284675B	GP-2(8.5-9)	S06	WATER BY EVAP	42.4		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284676A	GP-3(1.5-2)	G01PA	Benzene	150 J	370	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284676A	GP-3(1.5-2)	G01PA	Naphthalene	1200	370	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284676B	GP-3(1.5-2)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284676B	GP-3(1.5-2)	G10PA	Anthracene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benz(a)anthracene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benzo(a)pyrene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benzo(b)fluoranthene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Benzo(ghi)perylene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Chrysene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Fluorene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Phenanthrene	290 J	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	G10PA	Pyrene	ND	530	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284676B	GP-3(1.5-2)	S06	WATER BY EVAP	37.4		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284677A	GP-4(1.5-2)	G01PA	Benzene	2200	470	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
284677A	GP-4(1.5-2)	G01PA	Naphthalene	1500	470	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284677B	GP-4(1.5-2)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284677B	GP-4(1.5-2)	G10PA	Anthracene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benz(a)anthracene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benzo(a)pyrene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benzo(b)fluoranthene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Benzo(ghi)perylene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Chrysene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Fluorene	750	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Phenanthrene	840	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	G10PA	Pyrene	ND	650	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284677B	GP-4(1.5-2)	S06	WATER BY EVAP	48.9		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284678A	GP-4(3.5-4)	G01PA	Benzene	ND	350	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284678A	GP-4(3.5-4)	G01PA	Naphthalene	720	350	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284678B	GP-4(3.5-4)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284678B	GP-4(3.5-4)	G10PA	Anthracene	390 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benz(a)anthracene	440 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benzo(a)pyrene	410 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benzo(b)fluoranthene	460 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Benzo(ghi)perylene	ND	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Chrysene	580	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Fluorene	400 J	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Phenanthrene	1500	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	G10PA	Pyrene	1400	560	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284678B	GP-4(3.5-4)	S06	WATER BY EVAP	40.4		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284679A	GP-5(1.5-2)	G01PA	Benzene	1200	540	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284679A	GP-5(1.5-2)	G01PA	Naphthalene	30000 D	540	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 68717 Printed - 06/19/02 07:53:17

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analys
284679B	GP-5(1.5-2)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284679B	GP-5(1.5-2)	G10PA	Anthracene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benz(a)anthracene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benzo(a)pyrene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benzo(b)fluoranthene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Benzo(ghi)perylene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Chrysene	ND	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Fluorene	120000	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Phenanthrene	110000	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	G10PA	Pyrene	11000 J	16000	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284679B	GP-5(1.5-2)	S06	WATER BY EVAP	17.9		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284680A	GP-6(0-0.5)	G01PA	Benzene	76 J	270	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284680A	GP-6(0-0.5)	G01PA	Naphthalene	190 J	270	ug/kg-dry	06/04/2002	06/16/2002	06/16/2002	PSS
284680B	GP-6(0-0.5)	760	EXT BN SOLIDS			COMPLETE	06/04/2002	06/06/2002	06/06/2002	JYL
284680B	GP-6(0-0.5)	G10PA	Anthracene	ND	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benz(a)anthracene	250 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benzo(a)pyrene	330 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benzo(b)fluoranthene	440	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Benzo(ghi)perylene	ND	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Chrysene	410 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Fluorene	ND	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Phenanthrene	390 J	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	G10PA	Pyrene	440	430	ug/kg-dry	06/04/2002	06/07/2002	06/07/2002	SAB
284680B	GP-6(0-0.5)	S06	WATER BY EVAP	23.0		% as received	06/04/2002	06/05/2002	06/06/2002	MCH
284681	TB	G01PA	Benzene	ND	250	ug/kg as rcvd	06/04/2002	06/17/2002	06/17/2002	PSS
284681	TB	G01PA	Naphthalene	ND	250	ug/kg as rcvd	06/04/2002	06/17/2002	06/17/2002	PSS

Approved by: PLD

Report Prep: M. Hamalak

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 68717:

Code	Description
760	Ext.Proc.-Sonication BN (Solids) SW 846 Method 3550B-mod.
G01PA	SW-846 5035/8260B/PA UST VOCs - BTEX;Cumene;Naph.;EDB;EDC
G10PA	SW-846 8270/PA UST PAHs
S06	Water by evaporation/ EPA-600 Mtd 160.3

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington Laboratory Chain Of Custody

Ship To:

Lab Job No: 75702702

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Quote No:

Client/Office: SECOR Phone: 484 875 3075

Address: 102 PICKERING WAY, ST. 102 EXTON PA

Send report to: STEVE BAGGETT Fax: 484 875 9286

Project Description: SUNOCO PHILADELPHIA REFINERY

Send invoice to: SAME

Address:

P.O. No: 1012

TAT (for data): Identify number of working days below);...or Date-->:

☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(~12) ☐ Other

Lab Staffer confirming Rush/Firm: Hardcopy TAT Date?:

Report Type: ☐ Results only ☐ Data +QC ☐ Reduced Deliv. ☐ Other: ☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO

If YES?: ☒ Act II ☐ UST ☐ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other:

Analytical Protocol: ☐ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other:

Analysis Required: PADEP FUEL OIL 4,5,6 & LUBE OIL & FLUIDS; BENZENE, NAPHTHALENE 5035/8260B; FLUORENE, ANTHRACENE; PHENANTHRENE, PYRENE; BENZO(A) ANTHRACENE; CHRYSENE; BENZO(B) FLUORANTHENE; BENZO(A) PYRENE; BENZO(g,h,i) PERYLENE (8270C)

Lab Use Only: rec. 10/12/99; Due Date:; Cooler Trip: 15 deg C; custody seal yes no ✓; No.:; Summary No. 68717

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters) / **Container Data**

ID (NJ limit=7 characters)	date	time	matrix	grab	comp	type	no.	preservative	pH	PADEP FUEL OIL 4,5,6 & LUBE OIL & FLUIDS	BENZENE, NAPHTHALENE 5035/8260B	FLUORENE, ANTHRACENE	PHENANTHRENE, PYRENE	BENZO(A) ANTHRACENE	CHRYSENE	BENZO(B) FLUORANTHENE	BENZO(A) PYRENE	BENZO(g,h,i) PERYLENE	Lab Log No.
GP-1 (0-.5)	6/4/02	1015	SOIL	✓	~~✓~~	Sel velocity	2	METHANOL			✓	✓	✓	✓	✓	✓	✓	✓	284673 A+B
GP-2 (.5-1)	↓	1105	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284674
GP-2 (8.5-9)	↓	1120	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284675
GP-3 (1.5-2)	↓	1245	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284676
GP-4 (1.5-2)	↓	1315	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284677
GP-4 (3.5-4)	↓	1325	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284678
GP-5 (1.5-2)	↓	1340	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284679
GP-6 (0-.5)	↓	1400	↓	✓		↓	2	↓			✓	✓	✓	✓	✓	✓	✓	✓	284680
TRIP BLANK			METH			40g	1	↓			✓								284681

Comments/Special Handling/Storage/Disposal—>:

Sampled by: SERGIO MORESCALCHI

Phone no: 484 875 3075

Relinquished By:		Received By:		Method of Shipment
Name: SERGIO MORESCALCHI	Date: 6/4/02	Name: [signature]	Date: 6/4/02	Airbill No.
Organization: SECOR	Time: 1530	Organization: TWGINT	Time: 1530	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

Washington Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: Secor

Assigned Summary # 68717

68717 Page 0009

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	15 °C		
2.3 Documentation			
Airbill Present	☐ Yes, # N/A		☐ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	
2.5 Preservation (water samples only)			
Metals pH<2	☐ Yes	☐ No*	☒ NA
Cyanides pH >12	☐ Yes	☐ No*	☒ NA
Sulfides pH >9	☐ Yes	☐ No*	☒ NA
BNA, Pest, PCB, CN, Phenols, NO_3 Cl_2 absent	☐ Yes	☐ No*	☒ NA
TOC, COD, Oil/Grease, Phenols, TPH pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P. pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?	☐ Yes*	☐ No	☒ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: DAC Date: 6/4/02

admin3/QA/IList/SR Checlist rev10/01

The Washington Group
Environmental Laboratory

F-32-1-6098

REPORT OF NONCONFORMANCES AND COMMENTS

This Form is used for reporting any nonconformances (anything unusual) encountered in the performance of the analysis. Also recorded are any comments about the nature of the sample that might aid in the interpretation of the data.

Laboratory Sample Number: All

Summary Number: 68717

Date: 06/24/2002

Reported by: KMI

Analysis:

Comments (including nonconformances):

The samples were hand-delivered to the laboratory in a cooler with ice. Sample temperature on receipt was 15 C.

Approved: _____

APPENDIX C

SOIL SAMPLE ANALYTICAL DATA – SEPTEMBER 17, 2002

Lancaster Laboratories
Where quality is a science.

RECEIVED
OCT 17 2002
By

ANALYTICAL RESULTS

Prepared for:

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341
484-875-9075

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 823333. Samples arrived at the laboratory on Wednesday, September 18, 2002. The PO# for this group is 1036.

Client Description	Lancaster Labs Number
GP-4(1.5-2) Grab Soil Sample	3901261
GP-5(1.5-2) Grab Soil Sample	3901262
GP-5(3.5-4) Grab Soil Sample	3901263

1 COPY TO Sun: SECOR International, Inc Attn: Mr. Steve Bagett

Questions? Contact your Client Services Representative
Sandra L Patton at (717) 656-2300.

Respectfully Submitted,

Erik J. Frederiksen
Group Leader

Lancaster Laboratories
Where quality is a science.

RECEIVED
OCT 17 2002
By

Lancaster Laboratories Sample No. TL 3901261

Collected:09/17/2002 12:50 by SM

Account Number: 11183

Submitted: 09/18/2002 15:30
Reported: 10/10/2002 at 19:54
Discard: 10/25/2002
GP-4(1.5-2) Grab Soil Sample
SPLP ZERO HEADSPACE LEACHATE EXTRACTION
SUNOCO AST#271

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

4122-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
05401	Benzene	71-43-2	0.038	0.0050	mg/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/02/2002 09:40	Kenneth L Boley Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/02/2002 09:40	Kenneth L Boley Jr	n.a.
08792	SPLP Volatile Extraction	SW-846 1312	1	09/24/2002 13:45	Tara M Spaide	n.a.

Lancaster Laboratories
Where quality is a science.

RECEIVED
OCT 1 7 2002
By

Lancaster Laboratories Sample No. TL 3901262

Collected:09/17/2002 14:30 by SM

Account Number: 11183

Submitted: 09/18/2002 15:30
Reported: 10/10/2002 at 19:54
Discard: 10/25/2002
GP-5(1.5-2) Grab Soil Sample
SPLP ZERO HEADSPACE LEACHATE EXTRACTION
SUNOCO AST#271

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

5152-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
05401	Benzene	71-43-2	< 0.0050	0.0050	mg/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/02/2002 10:06	Kenneth L Boley Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/02/2002 10:06	Kenneth L Boley Jr	n.a.
08792	SPLP Volatile Extraction	SW-846 1312	1	09/24/2002 13:45	Tara M Spaide	n.a.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

Quality Control Summary

Client Name: Sun: SECOR International, Inc
Reported: 10/10/02 at 07:54 PM

Group Number: 823333

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 02262820002A	Sample number(s): 3901263							
Moisture				100	100	99-101	0	1
Batch number: N022681BD	Sample number(s): 3901261-3901262							
Benzene	N.D.	5.	ug/l	104		85-117		
Batch number: Q022631AB	Sample number(s): 3901263							
Benzene	N.D.	250.	ug/kg	98	100	85-125	1	30

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 02262820002A	Sample number(s): 3901263								
Moisture						23.1	22.9	1	15
Batch number: N022681BD	Sample number(s): 3901261-3901262								
Benzene	107	104	78-134	1	30				

Surrogate Quality Control

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: N022681BD

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
3901261	97	95	100	99
3901262	95	96	100	99
Blank	97	95	98	95
LCS	100	89	99	100
MS	96	96	99	98
MSD	95	95	100	98
Limits:	86-118	80-120	88-110	86-115

Analysis Name: UST-Unleaded Soils by 8260B
Batch number: Q022631AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
3901263	75*	75*	73*	72*
Blank	87	91	85	85
LCS	91	94	95	94
LCSD	92	94	96	96
Limits:	80-120	80-120	81-117	74-121

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

Quality Control Summary

Client Name: Sun: SECOR International, Inc
Reported: 10/10/02 at 07:54 PM

Group Number: 823333

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

RECEIVED
OCT 17 2002
By

Lancaster Laboratories Sample No. SW 3901263

Collected:09/17/2002 14:45 by SM

Account Number: 11183

Submitted: 09/18/2002 15:30
Reported: 10/10/2002 at 19:54
Discard: 10/25/2002
GP-5(3.5-4) Grab Soil Sample
SUNOCO AST#271

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

5354-

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Units	Dilution Factor
00111	Moisture	n.a.	37.7	0.50	% by wt.	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The result reported above is on an as-received basis.

02304 UST-Unleaded Soils by 8260B

05460	Benzene	71-43-2	N.D.	390.	ug/kg	48.22

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Poor surrogate recoveries were observed for the GC/MS volatile fraction. The analysis was repeated and poor surrogate recoveries were again observed indicating a significant matrix effect.

00405 Field Preserved Methanol
The sample submitted for volatile organic analysis was preserved with methanol in the field.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	09/19/2002 08:32	Helen L Schaeffer	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	09/20/2002 23:27	Bryan J Polick	48.22

Analysis Request / Environmental Services Chain of Cus

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # ~~6374~~ 11183 Group# 823333 Sample # 3901261-63

BHC 9/18/02

COC # 0003477

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: SUNOCO / SECOR Acct. #:
Project Name/#: AST 271 PWSID #:
Project Manager: STEVE BAGGETT P.O.#:
Sampler: SERGIO MORESCALCHI Quote #:
Name of state where samples were collected: PA

For Lab Use Only
FSC:
SCR #: 1167620

(2) (3) (4) (5) (6)

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES Check if Applicable)	Matrix: Other	Total # of Containers	SPLP BENZENE	BENZENE								Remarks	Temperature of samples upon receipt (if requested)
GP-4 (1.5-2)	9/17/02	1250	✓		✓			2	✓										
GP-5 (1.5-2)	9/17/02	1430	✓		✓			2	✓										
GP-5 (3.5-4)	9/17/02	1445	✓		✓			3	✓	✓								HOLD SPLP BENZENE	
																		cooler temp 3°C SP 9/18/02	

(7)
Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8)
Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No
State-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9/18/02	0950			
Darren Middleton	9/18/02	9:50	[signature]	9/18/02	0950
[signature]	9/18/02	1030			
			[signature]	9/18/02	1530

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

January 29, 2003

RECEIVED
JAN 31 2003
By

Southeast Regional Office

Phone: 610-832-5950
Fax: 610-832-6143

Mr. Jim Tucker
Sunoco, Inc. (R&M)
3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Re: Storage Tank Program
Girard Point Processing Area AST 271
Facility ID No. 51-36558
Philadelphia Refinery
City of Philadelphia
Philadelphia County

Dear Mr. Tucker:

On December 27, 2002 we received your report entitled "Site Characterization Report", dated December 20, 2002, for the storage tank facility referenced above. We consider this submittal to be the Site Characterization Report required by the Corrective Action Process regulations, 25 Pa. Code Section 245.310.

You have identified your selected cleanup standard as the Site Specific Standard. As such, the Department will review attempt to this report within 90 days of its receipt and send a review letter to the facility owner.

If your submission did not include a remedial action plan, please be aware that it is your responsibility to determine whether remedial action is necessary to ensure that this facility meets a Department cleanup standard for soil and groundwater. If your site characterization report indicates that remediation is necessary, you are required to submit a remedial action plan to the Department. This plan must meet the requirements of Section 245.311 of the regulations. The plan due date, which is determined by your selected cleanup standard, is identified in Section 245.311(a).

If you have any questions concerning the requirements of the Corrective Action Process Regulations, please contact me at 610-832-5968.

Sincerely,

Stephan B. Sinding
Chief, Storage Tank Section
Environmental Cleanup

cc: Philadelphia County Health Department
City of Philadelphia
Mr. Baggett, SECOR
Mr. Ghobrial
Re 30 (RW03ECP)029.3

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
March 5, 2003

Southeast Regional Office

610-832-5949
Fax 610-832-6143

Mr. Jim Tucker
Senior Staff
Sun Co. Refining
Point Breeze Refinery
3144 Passyunk Avenue
Philadelphia, PA

Re: ECP - Tanks Program
Sunoco Point Breeze Refinery
AST #271 Site Characterization
Facility ID # 51-36558
e-FACTS Site # 456930
3144 Passyunk Avenue
City of Philadelphia

GP

Dear Mr. Tucker:

The Pennsylvania Department of Environmental Protection (DEP), has received and reviewed the Site Characterization Report, dated December 20, 2002, for the site referenced above. SECOR International Corporation (SECOR), environmental consultant for Sun Oil Company, submitted this Site Characterization Report to the DEP on December 27, 2002. Investigations at this site were initiated in conjunction with the closure of Tank #271 on May 16, 2002. This Above Ground Storage Tank (AST) was approximately 118 feet in diameter and was capable of containing 3,360,000 gallons. The tank was used to store crude oil.

SECOR investigated soil conditions surrounding the AST by sampling at six locations in the immediate vicinity of the AST on June 4, 2002. Analytical results for these surficial soil samples, collected at a 0-2 foot depth, exceed the Benzene Act 2 soil to groundwater pathway standard for non-residential used aquifers in boring GP-4 and GP-5. The results of this soil investigation were provided to the DEP. Sunoco submitted a notification of release on June 26, 2002 and received a Notice of Violation on July 31, 2002 requesting further characterization of soil and groundwater.

Subsequent site characterization activities were initiated on September 17, 2002. These additional investigations involved collecting two samples for SPLP analysis (GP-4 & GP-5) and one additional soil sample (GP-5 at 3.5 to 4.0' below grade) to provide vertical delineation. Soil samples collected at GP-4 failed the SPLP analysis for Benzene and the deep sample at GP-5 was non-detect for Benzene. No groundwater samples were collected. Relative groundwater elevations for the six borings

were noted in the text. Since wells were not installed, the borings were not surveyed to a common datum, therefore groundwater gradient across this site cannot be determined. Conditions at this site confirm Benzene contamination at boring GP-4 and GP-5. DEP offers the following comments :

1) The lateral extent of the impacted soil has not been delineated as described in §245.309 & §245.310 of the Department's regulations.

2) The lateral extent of the impacted groundwater has not been delineated as described in §245.309 & 310 of the Department's regulations.

3) Please provide a map showing the location and description of currently operating recovery systems that would intercept and/or recover any plume of contamination in this area.

4) Please provide a risk assessment demonstrating that potentially open exposure pathways associated with soil and groundwater conditions at this site are in compliance with our Act 2 Acceptable Risk Ranges. Interim Remedial Actions should be implemented if conditions are outside acceptable risk ranges.

5) Please provide any additional data that may be pertinent to the distribution of contaminants in groundwater associated with this site from other sources in the vicinity of tank 271. What engineering performance standards for soil were considered in the construction of the tank dike ?

At this time, the Site Characterization Report is determined to be incomplete due to the limited soil data available and the need to further evaluate soils and groundwater.

The closure of this regulated AST should follow the Corrective Action Procedures specified in Department regulations. A final demonstration of attainment must comply with our Act 2 Regulations (see §250). References to the USEPA Environmental Indicators Program do not supersede the requirements of the Pennsylvania Statutes referenced above.

DEP looks forward to receiving and reviewing a complete site characterization report that considers the comments offered in this letter. Please provide a schedule of events planned for this site that will move the Site Characterization closer to completion. Please prepare and submit Act 2 Demonstration of Attainment Reports for soil and groundwater at this site considering the comments offered above.

If you have any questions or need further information regarding this matter, please contact the Environmental Cleanup Program.

Sincerely,

Walter J. Payne, P.G.
Licensed Geological Professional
Environmental Cleanup Program

cc: Mr. Beitler
Mr. O'Neil
Mr. Day-Lewis
Mr. Sinding
Mr. Burke
Mr. S. Brown
Mr. Mountain
Mr. Swokal
Mr. Sneath, Esq.
Mr. Gotthold
Mr. Opppenheim
Mr. Zipin
Regional File

GP 275

SECOR

SECOR
INTERNATIONAL
INCORPORATED

January 7, 2008

Mr. Ron Rosendorn
Sunoco, Inc.
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Subject: **Aboveground Storage Tank GP-275 (PA Registration #037A)**
Tank Closure Confirmatory Sampling Activities Report
Sunoco, Inc. (R&M) –Girard Point Process Area, Philadelphia Refinery
Philadelphia, Pennsylvania
Facility ID# 51-36558

Dear Mr. Rosendorn:

This letter summarizes the confirmatory sampling activities that were conducted in the vicinity of aboveground storage tank (AST) GP-275. The project site is located at the SUNOCO, Inc. (SUNOCO) Girard Point Process Area, Philadelphia Refinery, located in Philadelphia, Pennsylvania (**Figure 1**). Confirmatory sampling activities were conducted for the closure of AST GP-275. A Pennsylvania Department of Environmental Protection (PADEP) Aboveground Storage Tank System Closure Notification form was submitted to the PADEP on May 25, 2006 by SUNOCO.

Soil Sampling Activities

AST GP-275 is a 120-foot diameter AST that previously contained residual oil. For ASTs with a diameter greater than 90 feet, the PADEP Closure Requirements for Aboveground Storage Tank Systems (Closure Requirements) specifies the collection of soil samples from both the perimeter of the AST and from below the AST is to be determined upon consultation with the DEP regional office. Per conversation with Walter Payne of PADEP the samples were collected in accordance with the PADEP Closure Requirements for ASTs that are 60 to 90 feet in diameter. As a result of previous unsuccessful attempts to collect soil samples with a hand auger from below the center of other ASTs, SECOR followed an Alternative Confirmatory Sampling Plan for AST Closures (Alternative Plan) which was submitted by SUNOCO to PADEP on March 16, 2006. The Alternative Plan includes the collection of soil samples from angled drilling in lieu of sampling directly beneath the AST. The angled drilling would take place external to the tank shell and would be directed towards the center of the tank to a vertical depth of at least 5 feet. The Alternative Plan was approved by Walter Payne of PADEP in an April 5, 2006 letter with the stipulation that the number of soil samples to be collected

matched the number of soil samples specified in the Closure Requirements. To satisfy the Closure Requirements six perimeter soil samples and three subsurface tank soil samples were proposed to be collected from AST GP-275. In addition, four soil samples were collected from below an aboveground pipe line at AST GP-275.

A total of six perimeter soil samples (GP-275-PER-1, GP-275-PER-2, GP-275-PER-3, GP-275-PER-4, GP-275-PER-5, and GP-275-PER-6) and three angled soil samples (GP-275-SUB-1, GP-275-SUB-2, and GP-275-SUB-3) were collected using a truck mounted Geoprobe® rig. Soil samples GP-275-PER-1 through GP-275-PER-6 were collected at a depth of approximately 3 feet below grade (fbg). Soil samples GP-275-SUB-1 through GP-275-SUB-3 were collected at a vertical depth of approximately 5 fbg.

As per the Closure Requirements at least one soil sample must be collected from aboveground or underground piping, biased towards pipe junctures/joints and control valves. Four soil samples were collected from one aboveground pipeline at AST GP-275. A hand auger and trowel were used to obtain soil samples from the four aboveground soil samples (GP-275-LINE-1, GP-275-LINE-2, GP-275-LINE-3, and GP-275-LINE-4) were collected approximately 0-0.5 feet below grade. Soil sampling locations are depicted on **Figure 2**.

Each soil sample was analyzed for PADEP Pennsylvania Land Recycling Program (Act 2) short list of parameters for Fuel Oil numbers 4, 5 & 6 and used motor oil (with the exception of lead) in soils. The list includes the analyses of benzene, toluene, ethlybenzene, isopropylbenzene and naphthalene by EPA Method 5035A/8260B and anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene by EPA Method 8270C.

Soil Sampling Results

The soil analytical data is summarized on **Table 1.** Copies of the laboratory analytical results are included in **Appendix A.** The analytical results for the soil samples were compared to the cleanup criteria established by PADEP under Act 2. Under the regulations implementing Act 2, Medium Specific Concentrations (MSCs) for soils include two components. PADEP developed MSCs for soils are based on direct contact exposure scenarios and MSCs for soils that are designed to protect groundwater from the potential impacts that could be caused by the migration of regulated substances from soils into the groundwater. Soil sample results were compared to Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs and Used Aquifer Nonresidential Soil-to-Groundwater MSCs. These MSCs are listed in Appendix A, Tables 3A and 3B (revised November 24, 2001) of the Act 2 Rules and Regulations.

No soil samples exceeded the Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs, or Used Aquifer Nonresidential Soil-to-Groundwater MSCs.

Conclusions

Since no soil samples exceeded the Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs or Used Aquifer Nonresidential Soil-to-Groundwater MSCs, no further action is recommended regarding the closure-in-place for AST GP-275.

A copy of the PADEP Aboveground Storage Tank System Closure Report Form is included in **Appendix B**.

Should you have any questions or comments, please feel free to contact either of us at (484) 875-3075.

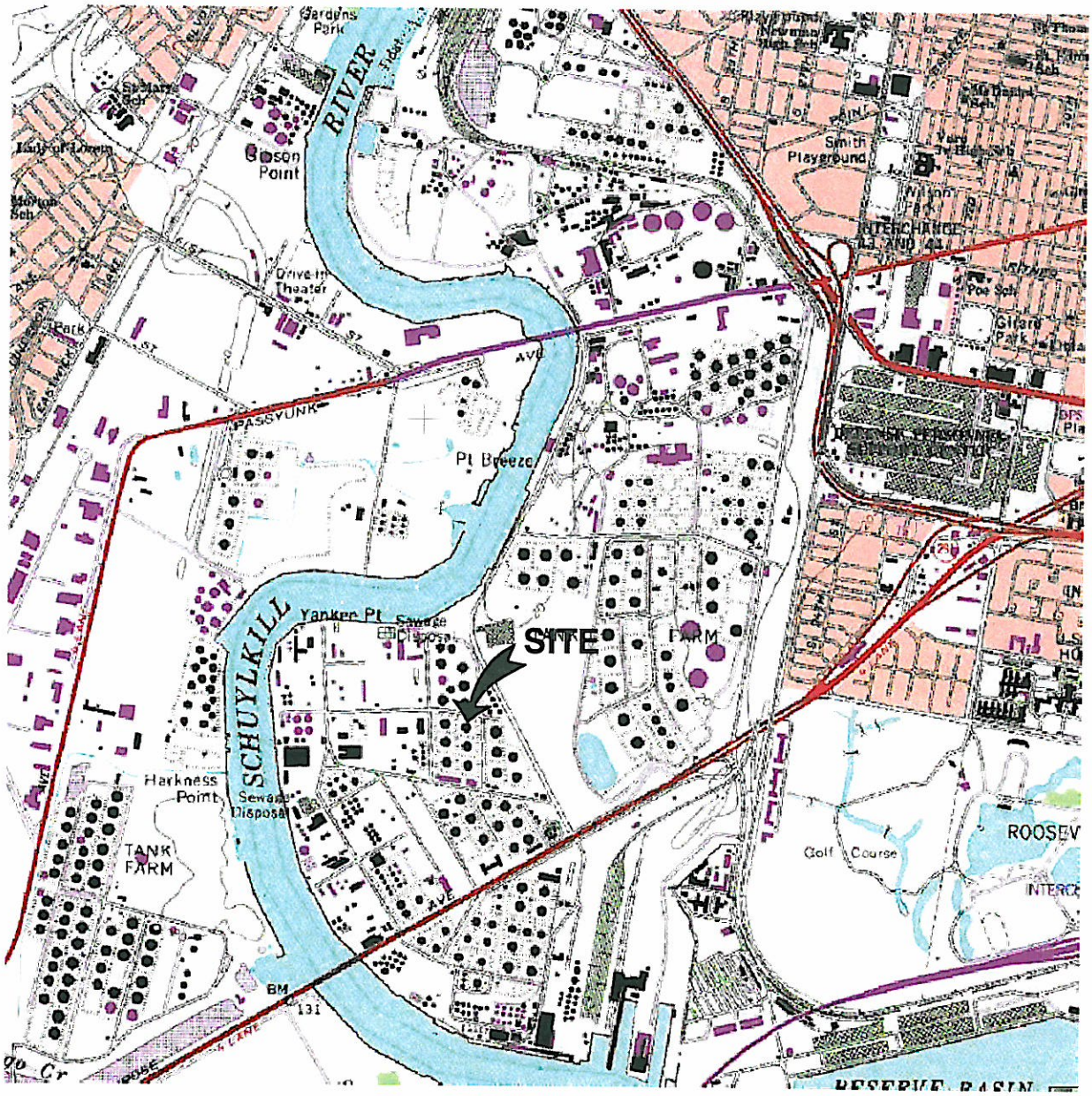
Sincerely,
SECOR International Incorporated

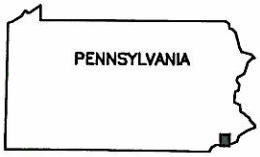
Casey Mundry

Casey Yetman Mundry
Project Manager

cc: Dina Toto (Sunoco)
Project File

FIGURES





QUADRANGLE LOCATION

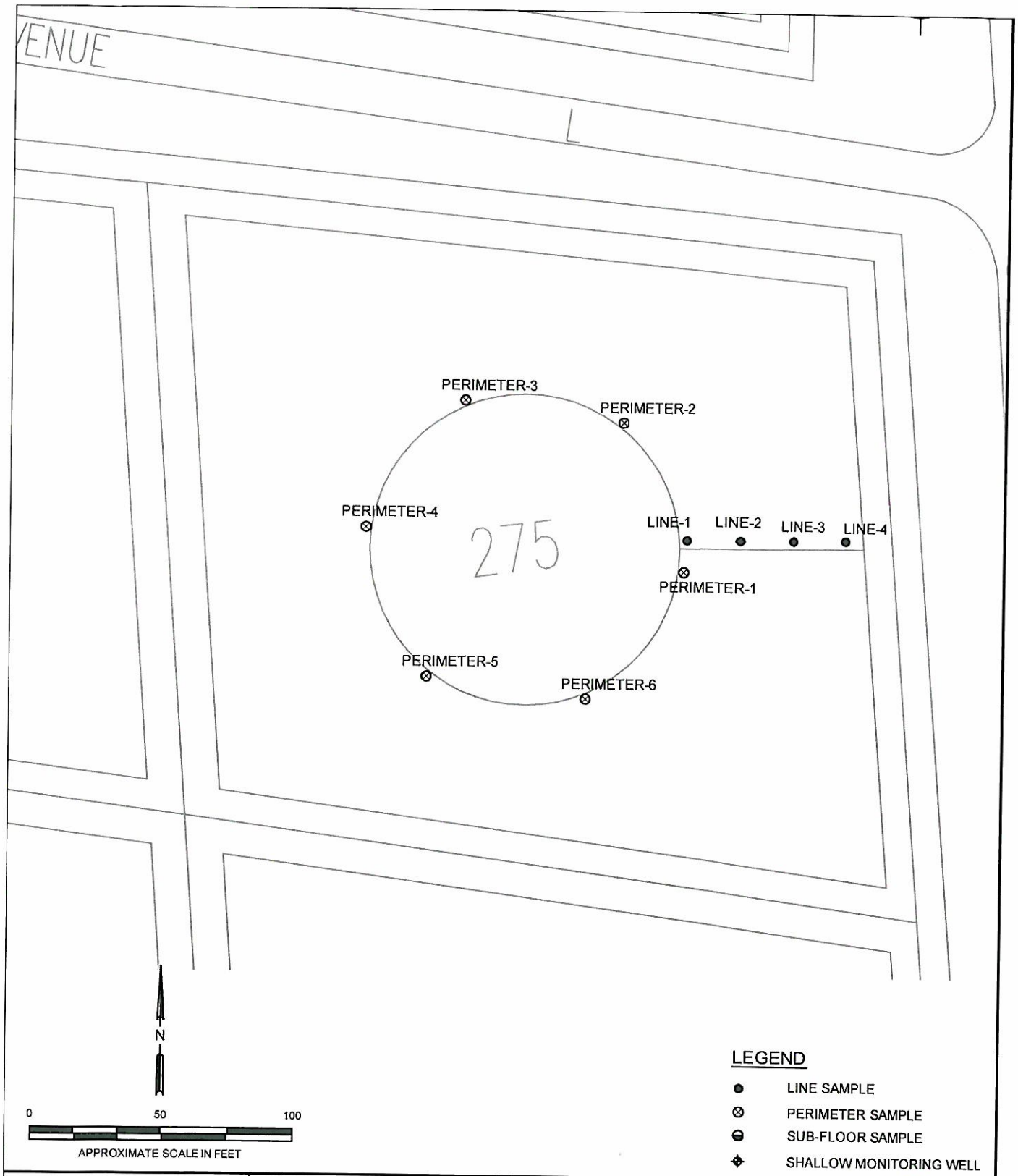
N

0 1/2 1

SCALE (MILES)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PHILADELPHIA, PENNSYLVANIA–NEW JERSEY; 1995

SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075/875-8286 (FAX)	FOR: SUNOCO, INC. PHILADELPHIA REFINERY PHILADELPHIA, PENNSYLVANIA		**SITE LOCATION MAP** **FORMER TANK GP-275 AREA**		FIGURE: **1**
	JOB NUMBER:	DRAWN BY: TFB	CHECKED BY: CY	APPROVED BY:	DATE: 01/09/2008



SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075 FAX:(484) 875-9286	FOR: SUNOCO, INC. PHILADELPHIA REFINERY PHILADELPHIA, PENNSYLVANIA		GP-275 CLOSURE SAMPLING LOCATIONS		FIGURE: 2
	JOB NUMBER:	DRAWN BY: TFB	CHECKED BY:	APPROVED BY:	DATE: 10/24/2007

TABLE

Table 1
Summary of Soil Analytical Results
AST GP-275
Sunoco Philadelphia Refinery

Sample Identification	MSCs			GP-275-PER-1	GP-275-PER-2	GP-275-PER-3	GP-275-PER-4	GP-275-PER-5	GP-275-PER-6	GP-275-Line-1
Sample Collection Depth (FBG)	Direct Contact, Non-residential, 0-2 feet (1)	Direct Contact, Non-residential, 2-15 feet (1)	Soil to Groundwater, Used Aquifer, Non-residential (2)	3-3.5	3-3.5	3-3.5	3-3.5	3-3.5	3-3.5	0-0.5
Sample Collection Date				5/24/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007
VOCs										
Benzene	210,000	240,000	500	ND (270)	ND (270)	ND (230)	ND (230)	ND (200)	ND (340)	ND (240)
Cumene	10,000,000	10,000,000	1,600,000	ND (270)	ND (270)	ND (230)	ND (230)	ND (200)	ND (340)	ND (240)
Ethylbenzene	10,000,000	10,000,000	70,000	ND (270)	ND (270)	ND (230)	ND (230)	ND (200)	ND (340)	ND (240)
Naphthalene	56,000,000	190,000,000	25,000	430	600	350	370	ND (200)	ND (340)	ND (240)
Toluene	10,000,000	10,000,000	100,000	590	710	490	500	380	ND (340)	ND (240)
SVOCs										
Anthracene	190,000,000	190,000,000	350,000	ND (580)	ND (560)	ND (550)	ND (510)	ND (500)	ND (480)	ND (340)
Benzo(a)anthracene	110,000	190,000,000	320,000	1,800	ND (560)	810	1,100	1,000	ND (480)	ND (340)
Benzo(a)pyrene	11,000	190,000,000	46,000	2,000	ND (560)	990	1,700	1,400	590	ND (340)
Benzo(b)fluoranthene	110,000	190,000,000	170,000	2,500	560	1,300	2,600	1,500	600	ND (340)
Benzo(ghi)perylene	170,000,000	190,000,000	180,000	1,100	ND (560)	ND (550)	570	830	ND (480)	ND (340)
Chrysene	11,000,000	190,000,000	230,000	2,000	700	890	1,200	1,200	510	ND (340)
Fluorene	110,000,000	190,000,000	3,800,000	ND (580)	ND (560)	ND (550)	ND (510)	ND (500)	ND (480)	ND (340)
Indeno(1,2,3-cd)pyrene	110,000	190,000,000	28,000,000	1,100	ND (560)	ND (550)	540	700	ND (480)	ND (340)
Phenanthrene	190,000,000	190,000,000	10,000,000	2,200	590	830	850	640	ND (480)	560
Pyrene	84,000,000	190,000,000	2,200,000	2,900	1,000	1,800	1,400	1,400	690	ND (340)

Sample Identification	MSCs			GP-275-Line-2	GP-275-Line-3	GP-275-Line-4	GP-275-SUB-1	GP-275-SUB-2	GP-275-SUB-3
Sample Collection Depth (FBG)	Direct Contact, Non-residential, 0-2 feet (1)	Direct Contact, Non-residential, 2-15 feet (1)	Soil to Groundwater, Used Aquifer, Non-residential (2)	0-0.5	0-0.5	0-0.5	5-5.5	5-5.5	5-5.5
Sample Collection Date				5/24/2007	5/24/2007	5/24/2007	9/4/2007	9/4/2007	9/4/2007
VOCs									
Benzene	210,000	240,000	500	ND (210)	ND (230)	ND (160)	ND (5.8)	ND (5.4)	ND (5.1)
Cumene	10,000,000	10,000,000	1,600,000	ND (210)	ND (230)	ND (160)	ND (5.8)	ND (5.4)	ND (5.1)
Ethylbenzene	10,000,000	10,000,000	70,000	ND (210)	ND (230)	ND (160)	ND (5.8)	ND (5.4)	ND (5.1)
Naphthalene	56,000,000	190,000,000	25,000	ND (210)	ND (230)	ND (160)	ND (5.8)	ND (5.4)	ND (5.1)
Toluene	10,000,000	10,000,000	100,000	ND (210)	ND (230)	ND (160)	ND (5.8)	ND (5.4)	ND (5.1)
SVOCs									
Anthracene	190,000,000	190,000,000	350,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Benzo(a)anthracene	110,000	190,000,000	320,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Benzo(a)pyrene	11,000	190,000,000	46,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Benzo(b)fluoranthene	110,000	190,000,000	170,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Benzo(ghi)perylene	170,000,000	190,000,000	180,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Chrysene	11,000,000	190,000,000	230,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Fluorene	110,000,000	190,000,000	3,800,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Indeno(1,2,3-cd)pyrene	110,000	190,000,000	28,000,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Phenanthrene	190,000,000	190,000,000	10,000,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)
Pyrene	84,000,000	190,000,000	2,200,000	ND (360)	ND (370)	ND (350)	ND (380)	ND (360)	ND (340)

Notes:
FBG = Feet Below Grade
All concentrations are in ug/kg (micrograms per kilogram)
ND (30) = Not detected at or above the laboratory reporting limit
J = Estimated value
MSCs = Medium-Specific Concentrations
(1)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 A (Revised November 24, 2001)
(2)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 B (Revised November 24, 2001)

APPENDIX A

Laboratory Analytical Report

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

RECEIVED JUL 05 2007

June 14, 2007

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Dear Ms. Yetman:

Enclosed are analytical results for samples submitted to Pace Analytical by Sunoco_SECOR International, Inc. - Exton. The samples were received on May 31, 2007. The results reported in this project meet the requirements as specified in Chapter 5 of the NELAC Standards. Any deviations or discrepancies from the NELAC standards are documented in the case narrative(s) of this report. Parameters printed in italics represent Non-NELAC accredited parameters. Please reference Pace project number 07-4100 when inquiring about this report.

Client Site: Sunoco
Client Ref.: AST-275

Pace Sample Identification	Client Sample Identification
0705-4563	GP-275-PER1
0705-4564	GP-275-PER2
0705-4565	GP-275-PER3
0705-4566	GP-275-PER4
0705-4567	GP-275-PER5

Pace Sample Identification	Client Sample Identification
0705-4568	GP-275-PER6
0705-4569	GP-275-LINE1
0705-4570	GP-275-LINE2
0705-4571	GP-275-LINE3
0705-4572	GP-275-LINE4

General Comments: This report has been reissued 6/29/07. Anthracene has been added as per client request. Please replace the original report with the revised report enclosed. Cooler temperature 5 ° C upon receipt. Ice was present.

Please call me if you have any questions regarding the information contained within this report.

Sincerely,

Carin A. Ferris

Carin A. Ferris
Project Manager

CAM: jld

Enclosures

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4563**
Client Sample ID: GP-275-PER1
Sample Matrix: Solid

Date Sampled: 05/24/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	57	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<580	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)anthracene	8270C(1)	1800	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)pyrene	8270C(1)	2000	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(b)fluoranthene	8270C(1)	2500	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(ghi)perylene	8270C(1)	1100	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Chrysene	8270C(1)	2000	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Fluorene	8270C(1)	<580	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	1100	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Phenanthrene	8270C(1)	2200	580	ug/kg	JAS	06/11/2007	0061488-1	<330
Pyrene	8270C(1)	2900	580	ug/kg	JAS	06/11/2007	0061488-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<270	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Cumene	8260B(1)	<270	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Ethylbenzene	8260B(1)	<270	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Naphthalene	8260B(1)	430	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Toluene	8260B(1)	590	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4564**
Client Sample ID: GP-275-PER2
Sample Matrix: Solid

Date Sampled: 05/24/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	59	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)anthracene	8270C(1)	<560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)pyrene	8270C(1)	<560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(b)fluoranthene	8270C(1)	560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(ghi)perylene	8270C(1)	<560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Chrysene	8270C(1)	700	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Fluorene	8270C(1)	<560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<560	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Phenanthrene	8270C(1)	590	560	ug/kg	JAS	06/11/2007	0061488-1	<330
Pyrene	8270C(1)	1000	560	ug/kg	JAS	06/11/2007	0061488-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<270	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Cumene	8260B(1)	<270	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Ethylbenzene	8260B(1)	<270	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Naphthalene	8260B(1)	600	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Toluene	8260B(1)	710	270	ug/kg	JEC	06/05/2007	0061554-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4565**
Client Sample ID: GP-275-PER3
Sample Matrix: Solid

Date Sampled: 05/24/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	60	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<550	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)anthracene	8270C(1)	810	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)pyrene	8270C(1)	990	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(b)fluoranthene	8270C(1)	1300	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(ghi)perylene	8270C(1)	<550	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Chrysene	8270C(1)	890	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Fluorene	8270C(1)	<550	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<550	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Phenanthrene	8270C(1)	830	550	ug/kg	JAS	06/11/2007	0061488-1	<330
Pyrene	8270C(1)	1800	550	ug/kg	JAS	06/11/2007	0061488-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<230	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Cumene	8260B(1)	<230	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Ethylbenzene	8260B(1)	<230	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Naphthalene	8260B(1)	350	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Toluene	8260B(1)	490	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4566**
Client Sample ID: GP-275-PER4
Sample Matrix: Solid

Date Sampled: 05/24/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	64	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<510	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)anthracene	8270C(1)	1100	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(a)pyrene	8270C(1)	1700	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(b)fluoranthene	8270C(1)	2600	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Benzo(ghi)perylene	8270C(1)	570	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Chrysene	8270C(1)	1200	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Fluorene	8270C(1)	<510	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	540	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Phenanthrene	8270C(1)	850	510	ug/kg	JAS	06/11/2007	0061488-1	<330
Pyrene	8270C(1)	1400	510	ug/kg	JAS	06/11/2007	0061488-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<230	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Cumene	8260B(1)	<230	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Ethylbenzene	8260B(1)	<230	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Naphthalene	8260B(1)	370	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Toluene	8260B(1)	500	230	ug/kg	JEC	06/05/2007	0061554-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4567**
Client Sample ID: GP-275-PER5
Sample Matrix: Solid

Date Sampled: 05/24/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	66	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<500	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(a)anthracene	8270C(1)	1000	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(a)pyrene	8270C(1)	1400	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(b)fluoranthene	8270C(1)	1500	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(ghi)perylene	8270C(1)	830	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Chrysene	8270C(1)	1200	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Fluorene	8270C(1)	<500	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	700	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Phenanthrene	8270C(1)	640	500	ug/kg	SPL	06/07/2007	0061524-1	<330
Pyrene	8270C(1)	1400	500	ug/kg	SPL	06/07/2007	0061524-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<200	200	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Cumene	8260B(1)	<200	200	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Ethylbenzene	8260B(1)	<200	200	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Naphthalene	8260B(1)	<200	200	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Toluene	8260B(1)	380	200	ug/kg	JEC	06/05/2007	0061554-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4568**
Client Sample ID: GP-275-PER6
Sample Matrix: Solid

Date Sampled: 05/24/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	69	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<480	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(a)anthracene	8270C(1)	<480	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(a)pyrene	8270C(1)	590	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(b)fluoranthene	8270C(1)	600	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Benzo(ghi)perylene	8270C(1)	<480	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Chrysene	8270C(1)	510	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Fluorene	8270C(1)	<480	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<480	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Phenanthrene	8270C(1)	<480	480	ug/kg	SPL	06/07/2007	0061524-1	<330
Pyrene	8270C(1)	690	480	ug/kg	SPL	06/07/2007	0061524-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<340	340	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Cumene	8260B(1)	<340	340	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Ethylbenzene	8260B(1)	<340	340	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Naphthalene	8260B(1)	<340	340	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Toluene	8260B(1)	<340	340	ug/kg	JEC	06/06/2007	0061607-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4569**
Client Sample ID: GP-275-LINE1
Sample Matrix: Solid

Date Sampled: 05/25/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	97	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(a)anthracene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(a)pyrene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(b)fluoranthene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(ghi)perylene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Chrysene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Fluorene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Phenanthrene	8270C(1)	560	340	ug/kg	JAS	06/08/2007	0061524-1	<330
Pyrene	8270C(1)	<340	340	ug/kg	JAS	06/08/2007	0061524-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<240	240	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Cumene	8260B(1)	<240	240	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Ethylbenzene	8260B(1)	<240	240	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Naphthalene	8260B(1)	<240	240	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Toluene	8260B(1)	<240	240	ug/kg	JEC	06/06/2007	0061607-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4570**
Client Sample ID: GP-275-LINE2
Sample Matrix: Solid

Date Sampled: 05/25/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	92	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(a)anthracene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(a)pyrene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(b)fluoranthene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Benzo(ghi)perylene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Chrysene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Fluorene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Phenanthrene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330
Pyrene	8270C(1)	<360	360	ug/kg	JAS	06/08/2007	0061524-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<210	210	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Cumene	8260B(1)	<210	210	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Ethylbenzene	8260B(1)	<210	210	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Naphthalene	8260B(1)	<210	210	ug/kg	JEC	06/05/2007	0061554-1	<5.0
Toluene	8260B(1)	<210	210	ug/kg	JEC	06/05/2007	0061554-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4571**
Client Sample ID: GP-275-LINE3
Sample Matrix: Solid

Date Sampled: 05/25/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	89	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(a)anthracene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(a)pyrene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(b)fluoranthene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(ghi)perylene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Chrysene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Fluorene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Phenanthrene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330
Pyrene	8270C(1)	<370	370	ug/kg	JAS	06/12/2007	0061529-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<230	230	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Cumene	8260B(1)	<230	230	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Ethylbenzene	8260B(1)	<230	230	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Naphthalene	8260B(1)	<230	230	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Toluene	8260B(1)	<230	230	ug/kg	JEC	06/06/2007	0061607-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: AST-275

Lab Project ID: **07-4100**
Lab Sample ID: **0705-4572**
Client Sample ID: GP-275-LINE4
Sample Matrix: Solid

Date Sampled: 05/25/2007
Date Received: 05/31/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	96	N/A	%	DAB	06/04/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(a)anthracene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(a)pyrene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(b)fluoranthene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Benzo(ghi)perylene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Chrysene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Fluorene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Phenanthrene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330
Pyrene	8270C(1)	<350	350	ug/kg	JAS	06/12/2007	0061529-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<160	160	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Cumene	8260B(1)	<160	160	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Ethylbenzene	8260B(1)	<160	160	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Naphthalene	8260B(1)	<160	160	ug/kg	JEC	06/06/2007	0061607-1	<5.0
Toluene	8260B(1)	<160	160	ug/kg	JEC	06/06/2007	0061607-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of 1041211

Section A Required Client Information:

Company: SECOR International Inc
Address: 102 Pickering Way Suite 200 Exton PA 19341
Email To: cyetman@secor.com
Phone: 484 8753075 Fax: 484 8759286
Requested Due Date/TAT:

Section B Required Project Information:

Report To:
Copy To: Casey Yetman
Purchase Order No.:
Project Name: AST 275
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ Other

SITE LOCATION ☐GA ☐IL ☐IN ☐MI ☐MN ☐NC ☐OH ☐SC ☐WI ☐OTHER

Section D Required Client Information

SAMPLE ID

One Character per box. (A-Z, 0-9 / .-) Samples IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

Filtered (Y/N)

Requested Analysis: Fuel oil 456 and used motor oil (no lead)

Pace Project Number: 07-04100

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Residual Chlorine (Y/N)	Lab I.D
1	GP-275-PER1	SL	G	~~5-24-07~~		5-24-07	1600		5							X	X	X	05-4563
2	GP-275-PER2	SL	G			5-24-07	1610		5							X	X	X	64
3	GP-275-PER3	SL	G			5-24-07	1620		5							X	X	X	65
4	GP-275-PER4	SL	G			5-24-07	1630		5							X	X	X	66
5	GP-275-PER5	SL	G			5-24-07	1640		5							X	X	X	67
6	GP-275-PER6	SL	G			5-24-07	1650		5							X	X	X	68
7	GP-275-LINE1	SL	G			5-25-07	1540		5							X	X	X	69
8	GP-275-LINE2	SL	G			5-25-07	1550		5							X	X	X	70
9	GP-275-LINE3	SL	G			5-25-07	1600		5							X	X	X	71
10	GP-275-LINE4	SL	G			5-25-07	1610		5							X	X	X	72
11																			
12																			

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Secor	5/28	1900			
			U S Cargo - C Urbowitz Pace	5-31-07	9:36

SAMPLE CONDITION

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
5	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

SEE REVERSE SIDE FOR INSTRUCTIONS

ALLQ020rev.3,31Mar05

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

September 25, 2007

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Dear Ms. Yetman:

Enclosed are analytical results for samples submitted to Pace Analytical by Sunoco_SECOR International, Inc. - Exton. The samples were received on September 7, 2007. The results reported in this project meet the requirements as specified in Chapter 5 of the NELAC Standards. Any deviations or discrepancies from the NELAC standards are documented in the case narrative(s) of this report. Parameters printed in italics represent Non-NELAC accredited parameters. Please reference Pace project number 07-6856 when inquiring about this report.

Client Site: Sunoco
Client Ref.: GP-275

Pace Sample Identification	Client Sample Identification
0709-0958	GP-275-SUB-1
0709-0959	GP-275-SUB-2
0709-0960	GP-275-SUB-3

General Comments: Cooler temperature 15 ° C upon receipt. Ice was present, however it was partially melted.

Please call me if you have any questions regarding the information contained within this report.

Sincerely,

Carin A. Ferris

Carin A. Ferris
Project Manager

CAM: jld

Enclosures

Page 1 of 5

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: GP-275

Lab Project ID: **07-6856**
Lab Sample ID: **0709-0958**
Client Sample ID: GP-275-SUB-1
Sample Matrix: Solid

Date Sampled: 09/04/2007
Date Received: 09/07/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	87	N/A	%	DAB	09/10/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Benzo(a)anthracene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Benzo(a)pyrene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Benzo(b)fluoranthene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Benzo(ghi)perylene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Chrysene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Fluorene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Phenanthrene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330
Pyrene	8270C(1)	<380	380	ug/kg	SPL	09/24/2007	0065131-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<5.8	5.8	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Cumene	8260B(1)	<5.8	5.8	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Ethylbenzene	8260B(1)	<5.8	5.8	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Naphthalene	8260B(1)	<5.8	5.8	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Toluene	8260B(1)	<5.8	5.8	ug/kg	JEC	09/12/2007	0065081-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: GP-275

Lab Project ID: **07-6856**
Lab Sample ID: **0709-0959**
Client Sample ID: GP-275-SUB-2
Sample Matrix: Solid

Date Sampled: 09/04/2007
Date Received: 09/07/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	93	N/A	%	DAB	09/10/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(a)anthracene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(a)pyrene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(b)fluoranthene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(ghi)perylene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Chrysene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Fluorene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Phenanthrene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330
Pyrene	8270C(1)	<360	360	ug/kg	JAS	09/18/2007	0065131-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<5.4	5.4	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Cumene	8260B(1)	<5.4	5.4	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Ethylbenzene	8260B(1)	<5.4	5.4	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Naphthalene	8260B(1)	<5.4	5.4	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Toluene	8260B(1)	<5.4	5.4	ug/kg	JEC	09/12/2007	0065081-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Ms. Casey Yetman
Sunoco_SECOR International, Inc. - Exton
102 Pickering Way, Suite 200
Exton, PA 19341

Client Site: Sunoco
Client Ref.: GP-275

Lab Project ID: **07-6856**
Lab Sample ID: **0709-0960**
Client Sample ID: GP-275-SUB-3
Sample Matrix: Solid

Date Sampled: 09/04/2007
Date Received: 09/07/2007

Inorganic Extraction

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Percent Solids	% Solids	98	N/A	%	DAB	09/10/2007	N/A	N/A

Semivolatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Semivolatile Organic Compounds, GC/MS								
Anthracene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(a)anthracene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(a)pyrene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(b)fluoranthene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Benzo(ghi)perylene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Chrysene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Fluorene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Indeno(1,2,3-cd)pyrene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Phenanthrene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330
Pyrene	8270C(1)	<340	340	ug/kg	JAS	09/18/2007	0065131-1	<330

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Benzene	8260B(1)	<5.1	5.1	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Cumene	8260B(1)	<5.1	5.1	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Ethylbenzene	8260B(1)	<5.1	5.1	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Naphthalene	8260B(1)	<5.1	5.1	ug/kg	JEC	09/12/2007	0065081-1	<5.0
Toluene	8260B(1)	<5.1	5.1	ug/kg	JEC	09/12/2007	0065081-1	<5.0

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported in dry weight equivalence.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

nelac

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of 1041207

Section A Required Client Information:

Company	[illegible]
Address	[illegible]
	[illegible]
Email To:	[illegible]
Phone	[illegible] Fax [illegible]
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, Other ____

SITE LOCATION

GA, IL, IN, MI, MN, NC, OH, SC, WI, OTHER ____

Section D Required Client Information

SAMPLE ID

One Character per box (A-Z, 0-9 / -)
Samples IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE; DRINKING WATER / DW; WATER / WT; WASTE WATER / WW; PRODUCT / P; SOIL/SOLID / SL; OIL / OL; WIPE / WP; AIR / AR; OTHER / OT; TISSUE / TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project Number / Lab I.D
1	GP-275-SUB-1	SL	G	[illegible]		[illegible]	1000		5	X						X	X	X		07-06856 0709-0958
2	GP-275-SUB-2	SL	G	[illegible]		[illegible]	1010		5	X						X	X	X		0959
3	GP-275-SUB-3	SL	G	[illegible]		[illegible]	1020		5	X						X	X	X		0960
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Requested Analysis:

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
US Cargo			[illegible] PACE-PEH	[illegible]	0955

SAMPLE CONDITION

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
15	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: [illegible]

SIGNATURE of SAMPLER: [illegible]

DATE Signed (MM / DD / YY)

SEE REVERSE SIDE FOR INSTRUCTIONS

APPENDIX B

PADEP Aboveground Storage Tank System Closure Report Form

2570-FM-LRWM0516 6/2002

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 037A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51-36558

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.

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. if "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) regulation 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, John Burchette (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 person who performed the site assessment activities associated with the closure of the above referenced storage tank(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.

Signature of Person Performing Site Assessment

10-10-07
Date

Staff Geologist
Title of Person Performing Site Assessment

SECOR International, Inc.
Name of Company Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Sample/Analysis Information (Attachment for Section III.)

Facility ID Number 51-36558

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
see Table 1								

[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 tanks were closed. Scales between 1" = 10 and 1" = 100 feet frequently work out 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 tanks 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: 51 - 36558

County: Philadelphia

Township/Borough: Philadelphia

See FIGURE 1 and FIGURE 2

GP 283

3930-FM-WC0082 9/98

Department of Environmental Protection

STORAGE SYSTEM REPORT FORM
NARRATIVE INFORMATION

FACILITY ID NUMBER 19781 51-36558 S.B.	FACILITY NAME ~~Girard~~ S.B. Point Breeze Process Area
FACILITY ADDRESS/LOCATION 3144 Passyunk Ave. 19145	MUNICIPALITY
	COUNTY Philadelphia
OWNER NAME Patrick A. Chabeda	OWNER ADDRESS Sunoco, Inc. R&M 3144 Passyunk Avenue Philadelphia, PA 19145
OWNER TELEPHONE NUMBER 215-339-2528	

An inspection is being conducted at this facility after the Department was notified of a release of crude oil. The release occurred from a weld on a pipeline that goes through Tank 880 area but has nothing to do with that tank. The pipeline was connected to tank 850. The majority of the material has been recovered. Sampling is also taking place. The drains allowed material to ~~connect~~ S.B. travel to the diked area of Tank 881. However, the drain valves were already closed S.B. as part of normal procedures. This allowed the material to remain in the dike areas and not go to the oil/water separator. Crude oil was the substance released. A small amount of oil did reach the separator but was vacuumed out. The tank registered with the Department as 845A was also inspected. The tank is undergoing a change-in-service. There are small spills that ~~whic~~ S.B. are present in the containment area and the tank is on a concrete base. How thick the base of the ~~cone~~ S.B. tank is will be provided to the Department. The map should include the river and depth of groundwater.

DEP Representative Name (Print)	DEP Representative Signature	Title	Date
Stephan Brown	Stephan Brown	Water Quality Specialist	4-21-2004
			Telephone (484) 250-5712

Signature by the person interviewed does not necessarily imply concurrence with the findings on this report, but does acknowledge that the person was shown the report or that a copy was left with the person.

Name of Person Interviewed (Print)	Signature of Person Interviewed	Title	Date
Patrick A. Chabeda	[signature]	ENVIRONMENTAL ENGINEER	4/21/01
			Telephone ( )

FACILITY

smorescalchi

From: smorescalchi [smorescalchi@secor.com]

Sent: Monday, May 03, 2004 11:54 AM

To: 'stebrown@state.pa.us'

Subject: SUNOCO AST 283

I recently faxed you some information regarding AST 283 at the SUNOCO Philadelphia Refinery and I noticed that there was an error in the information. The depth to groundwater measurements for wells C50, C51, C57 and C109 were actually from October 31, 2002, not November, 2003. The approximate depth to groundwater measurements for wells C50, C51, C57 and C109 on November 24, 2003 are 4.34 feet below grade (FBG), 1.53 FBG, 0.47 FBG and 1.84 FBG, respectively. Sorry for any inconvenience that this may have caused.

Sergio Morescalchi
SECOR International Incorporated
102 Pickering Way, Suite 200
Exton, PA 19341
V 484-875-3075
F 484-875-9286

****
*** TX REPORT ***
****

TRANSMISSION OK

TX/RX NO	3618
CONNECTION TEL	14842505961
CONNECTION ID	DEP WASTE MGT. E
ST. TIME	05/03 10:50
USAGE T	01'14
PGS. SENT	2
RESULT	OK

SECOR International Incorporated

Philadelphia Office
102 Pickering Way, Suite 200
Exton, Pennsylvania 19341
Phone: (484) 875-3075
FAX: (484) 875-9286

FAX COVER SHEET

( ) **Hard Copy To Follow**

To: Stephan Brown

From: Sergio Morescalchi

Company: _____

Date: 05-03-04

Time: _____

FAX No.: 484-250-5961

Client: SUNOCO Phil. Refinery – AST 283

Phone No.: _____

Pages (Including Cover): 2

CONFIDENTIALITY NOTICE

Documents included in this facsimile transmission may contain privileged or confidential information intended only for use by the individual or entity named above. Any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this information by other than the intended recipient is strictly prohibited. If you receive this transmission in error, please call us immediately to arrange for return of the document. Thank you.

Comments:

As per your voice mail from April 16, 2004, this fax contains information relating to above-ground storage tank (AST) 283 at the Sunoco Philadelphia Refinery, Philadelphia, Pennsylvania. AST 283 is going through a change-in-service closure.

AST 283 sits on a concrete pad that is 8.5 inches thick, except for at the outer edge of the pad where it is 1'10" thick. Attached is a drawing of AST 283 and its surrounding area. There are five wells in the vicinity of AST 283 (PH40, C50, C51, C57 and C109). On November 23, 2003, depth to groundwater from below ground surface in C50 ,C51, C57 and C109 was approximately 4.04 feet, 0.95 feet, 0.92 feet and 1.82 feet, respectively. Depth to groundwater in PH40 was not measured.

SECOR International Incorporated

Philadelphia Office
102 Pickering Way, Suite 200
Exton, Pennsylvania 19341
Phone: (484) 875-3075
FAX: (484) 875-9286

FAX COVER SHEET

( ) **Hard Copy To Follow**

To: Stephan Brown

From: Sergio Morescalchi

Company:

Date: 05-03-04

Time:

FAX No.: 484-250-5961

Client: SUNOCO Phil. Refinery – AST 283

Phone No.:

Pages (Including Cover): 2

CONFIDENTIALITY NOTICE

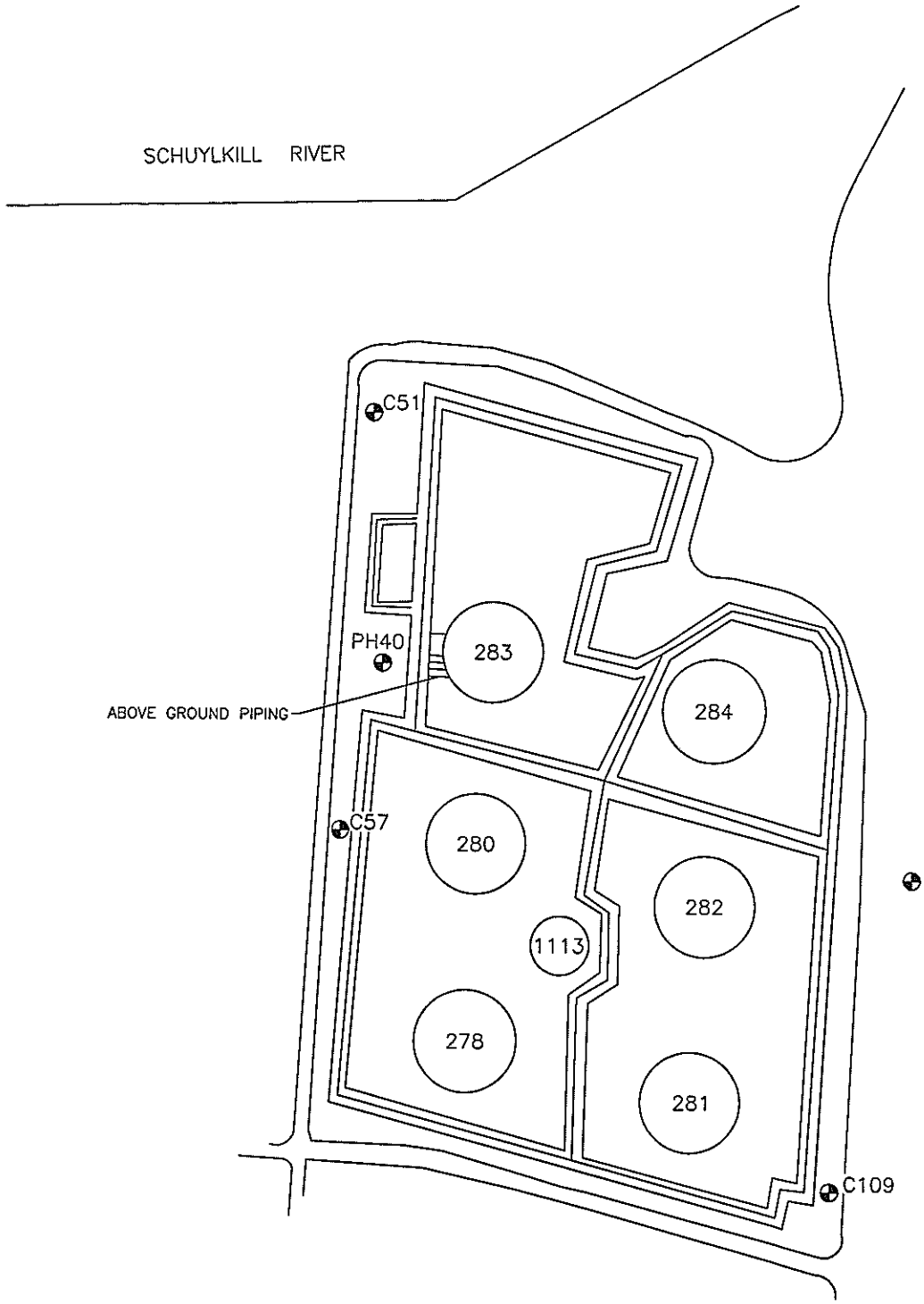
Documents included in this facsimile transmission may contain privileged or confidential information intended only for use by the individual or entity named above. Any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this information by other than the intended recipient is strictly prohibited. If you receive this transmission in error, please call us immediately to arrange for return of the document. Thank you.

Comments:

As per your voice mail from April 16, 2004, this fax contains information relating to above-ground storage tank (AST) 283 at the Sunoco Philadelphia Refinery, Philadelphia, Pennsylvania. AST 283 is going through a change-in-service closure.

AST 283 sits on a concrete pad that is 8.5 inches thick, except for at the outer edge of the pad where it is 1'10" thick. Attached is a drawing of AST 283 and its surrounding area. There are five wells in the vicinity of AST 283 (PH40, C50, C51, C57 and C109). On November 23, 2003, depth to groundwater from below ground surface in C50 ,C51, C57 and C109 was approximately 4.04 feet, 0.95 feet, 0.92 feet and 1.82 feet, respectively. Depth to groundwater in PH40 was not measured.

Please call me at your earliest convenience to discuss the number and location of soil samples that we will need to collect in order to obtain a change-in-service closure for AST 283. Thank you for your time.



LEGEND:

⊕ MONITORING WELL

N

0 200 400

SCALE IN FEET

SECOR
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA
PHONE: (484) 875-3075/875-9286 (FAX)

FOR:				FIGURE:
SUNOCO, INC. SUNOCO SCHUYLKILL RIVER TANK FARM PHILADELPHIA, PENNSYLVANIA		AST 283		2
JOB NUMBER: 62SU.01046	DRAWN BY: KEF	CHECKED BY:	APPROVED BY:	DATE: 04/27/2004

FILEPATH:

62SU-01046-AST283.DWG

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Environmental Cleanup Program

2 East Main Street
Norristown, PA 19401

Date: 05/12/2004

Time: 1156 hours

Number of pages including cover sheet: 1

To: Sergio Morescalchi
SECOR International Incorporated

Phone: 484-875-3075
Fax phone: 484-875-9286
CC:

From: Stephan Brown
Water Quality Specialist

Stephan Brown

Phone: 484-250-5712
Fax phone: 484-250-5961

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please comment

This is in regard to the facsimile and emails you sent to the Department on May 3, 2004 for Tank 045A (Sunoco Tank number 283). The tank is scheduled to be closed-in-place in the near future. Based on the information submitted in the fax nine soils samples and four water samples should be collected. The soil samples should be equidistant around the tank and collected at the soil/water interface. The initial sample should be started at the most down gradient point based on groundwater flow and go around from there. Four ground water samples should also be collected. One from the up gradient end of the tank and three from down gradient soil locations around the perimeter of the concrete base. These can be taken from the same locations as the soil samples. Please follow standard protocol when collecting samples if contamination is encountered. The sampling of soils and groundwater should take into account tidal influence and geologic conditions.

PLEASE CALL IF YOU ENCOUNTER PROBLEMS WITH THIS FAX

SECOR International Incorporated
Philadelphia Office
102 Pickering Way, Suite 200
Exton, Pennsylvania 19341
Phone: (484) 875-3075
FAX: (484) 875-9286

LETTER OF TRANSMITTAL

Attn: **Ron Rosendorn** **Date: 10-26-05**

Company: **Sunoco, Inc.**

Address: **3144 Passyunk Avenue**
Philadelphia, Pennsylvania

Project: **Philadelphia Refinery, Philadelphia, Pennsylvania**

RE: **Confirmatory Sampling Activities Report, AST GP-283**

ENCLOSED:
( ) **Proposal**
( ) **Contract**
(X) **Report**
( ) **Letter Report**
( ) **Other:**

FOR:
( ) **As Requested**
( ) **Review**
(X) **Your Information**
( ) **Approval**
( ) **Signature**
( ) **Return**
( ) **Other:**

Comments:

Attached are two copies of the confirmatory sampling activities report (the original to be forwarded to PADEP and a copy). Please call with any questions.

Signature: Sergio Morescalchi
Title: Project Geologist

S Morescalchi

let of tran ron 10-26-05.doc

SECOR

SECOR
INTERNATIONAL
INCORPORATED

www.secor.com

October 26, 2005

Mr. Ron Rosendorn
Sunoco, Inc.
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Subject: **Aboveground Storage Tank GP-283 Change-in-Service, Confirmatory Sampling Activities Report**
Sunoco, Inc. (R&M) – Girard Point Process Area, Philadelphia Refinery
Philadelphia, Pennsylvania

Dear Mr. Rosendorn:

This letter summarizes the confirmatory sampling activities that were conducted in the vicinity of aboveground storage tank (AST) GP-283. The project site is located at the SUNOCO, Inc. (SUNOCO) Girard Point Process Area, Philadelphia Refinery, located in Philadelphia, Pennsylvania (**Figure 1**). Confirmatory sampling activities were conducted for a change-in-service closure of AST GP-283.

AST GP-283 is a 120-foot diameter AST that previously contained oily water. Sunoco switched the AST from containing a regulated substance to containing an unregulated substance (change-in-service). As per the Pennsylvania Department of Environmental Protection (PADEP) Closure Requirements for Aboveground Storage Tank Systems (Closure Requirements), ASTs undergoing a change-in-service require a site assessment. According to the Closure Requirements, the number and location of confirmatory soil samples around the AST are determined by the appropriate PADEP regional office for tank diameters greater than 90 feet. Therefore, the southeast regional office of the PADEP was contacted by SECOR International Incorporated (SECOR) in regard to the number and location of confirmatory samples to be collected around AST GP-283. Mr. Stephan Brown of the Southeast regional office of PADEP responded to the SECOR's inquiry with a May 12, 2005 facsimile. In this facsimile, Mr. Brown requested that nine soil samples and four water samples should be collected from around the periphery of AST GP-283 (in addition to any other sample locations (i.e above ground piping) specified in the closure requirements). Three of the groundwater samples were to be collected downgradient of AST GP-283 and the fourth groundwater sample was to be collected upgradient of AST GP-283. A copy of the facsimile is included in **Appendix A**.

Soil Sampling Activities

On June 28, 2005, a SECOR Professional Geologist certified in Pennsylvania installed soil borings at five locations (designated SB-1, SB-2, SB-3, SB-4 and SB-5) on the upgradient side of AST GP-283 using a

truck mounted Geoprobe® rig. Soil boring locations SB-6, SB-7, SB-8 and SB-9, located on the downgradient side of AST GP-283, were inaccessible at the time due to muddy conditions. Soil sampling locations are depicted on **Figure 2**.

Groundwater was observed in SB-1, SB-3, SB-4 and SB-5 at approximately 1.5 feet below grade. Soil samples were collected from a 0.5 foot interval above groundwater in each boring. Groundwater was observed in SB-2 at approximately 2 inches below grade. Due to the shallow occurrence groundwater at SB-2, a soil sample was not collected from SB-2.

As per the Closure Requirements at least one soil sample must be collected from aboveground piping, biased towards pipe junctures/joints and control valves. Soil sample CV-1 was collected at a depth of 0-6 inches below grade, approximately 2 feet north of a control valve (since there was an asphalt pad directly below the control valve, the soil sample was offset two feet).

Groundwater Sampling Activities

Groundwater samples were to be collected from one upgraddient location and three downgradient locations. Due to muddy conditions at the site, the three downgradient groundwater sample locations were inaccessible. The upgradient groundwater sample was collected from soil boring location SB-2. After drilling the soil boring to 5 feet below grade, a temporary monitor well was installed in the boring. The temporary monitor well was constructed of 1-inch PVC and was screened from 1 inch below grade to 5 feet below grade. The temporary monitor well was purged of approximately 0.25 gallons of groundwater using a peristaltic pump before going dry. The temporary monitor well was allowed to re-charge before a groundwater sample was collected via the peristaltic pump.

A hydrocarbon sheen was noticed on the groundwater during the collection of the groundwater sample from SB-2. In accordance with the Closure Requirements, the Southeast regional office of PADEP was notified on June 29, 2005 of a hydrocarbon sheen present on the groundwater collected from SB-2.

Laboratory Analyses of Soil and Groundwater Samples

The laboratory analysis selected for the soil and groundwater samples was based on the product that was stored in AST GP-283. Since AST GP-283 stored oily water, each soil and groundwater sample was analyzed for all PADEP Pennsylvania Land Recycling Program (Act 2) short list parameters (there is no shot list for oily water). For soil this included the analyses of benzene, toluene, ethylbenzene, isopropylbenzene, 1,2 dichloroethane, 1,2 dibromoethane, methyl tertiary butyl ether, naphthalene and total xylenes by EPA Method 5035/8260B, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i) perylene and indeno(1,2,3-cd)pyrene by EPA Method 8270C and lead by EPA Method 6010B. For groundwater

this included the analyses of benzene, toluene, ethylbenzene, isopropylbenzene, 1,2 dichloroethane, methyl tertiary butyl ether, naphthalene and total xylenes by EPA Method 5030B/8260B, 1,2 dibromoethane by EPA Method 8011, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i) perylene and indeno(1,2,3-cd)pyrene by EPA Method 8310. Dissolved lead was not analyzed for the groundwater sample.

Soil Sampling Results

The soil analytical data is summarized on **Table 1.** Copies of the laboratory analytical results are included in **Appendix B.** The analytical results for the soil samples were compared to the cleanup criteria established by for PADEP under Act 2. Under the regulations implementing Act 2, Medium Specific Concentrations (MSCs) for soils include two components. PADEP has developed MSCs for soils are based on direct contact exposure scenarios and PADEP has developed procedures for selecting MSCs for soils that are designed to protect groundwater from the potential impacts that could be caused by the migration of regulated substances from soils into the groundwater. Soil sample results were compared to Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs and Used Aquifer Nonresidential Soil-to-Groundwater MSCs. These MSCs are listed in Appendix A, Tables 3A and 3B (revised November 24, 2001) of the Act 2 Rules and Regulations.

No soil samples exceeded the Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs or Used Aquifer Nonresidential Soil-to-Groundwater MSCs.

Groundwater Sampling Results

The groundwater analytical data is summarized on **Table 2.** Copies of the laboratory analytical results are included in **Appendix B.** The analytical results were compared to non-residential area, used aquifer PADEP MSCs. These MSCs are listed in Appendix A, Tables 1 (organics) and 2 (inorganics) (revised November 24, 2001) of the Act 2 Rules and Regulations. Groundwater sample SB-2 exceeded the Non-residential, Used Aquifer MSCs for benzo(a)pyrene (0.2 micrograms per liter (ug/l)), benzo(b)fluoranthene (1.2 ug/l), benzo(ghi)perylene (0.26 ug/l) and chrysene (1.9 ug/l) with concentrations of 4.6 ug/l, 2.4 ug/l, 3.7 ug/l and 4.4 ug/l, respectively.

Conclusions

No soil samples exceeded the Nonresidential Surface Soil and Subsurface Soil Direct Contact MSCs or Used Aquifer Nonresidential Soil-to-Groundwater MSCs. The groundwater sample collected from SB-2 had PADEP MSC exceedances for benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene and chrysene.

Based on the soil and groundwater analytical results, and the presence of a hydrocarbon sheen on the groundwater sample collected from SB-2, a site characterization would normally be required. However, there is an existing Consent Order between PADEP and Sunoco for the Philadelphia Refinery and SUNOCO will continue to discuss the appropriate path forward for AST GP-283.

Should you have any questions or comments, please feel free to contact either of us at (484) 875-3075.

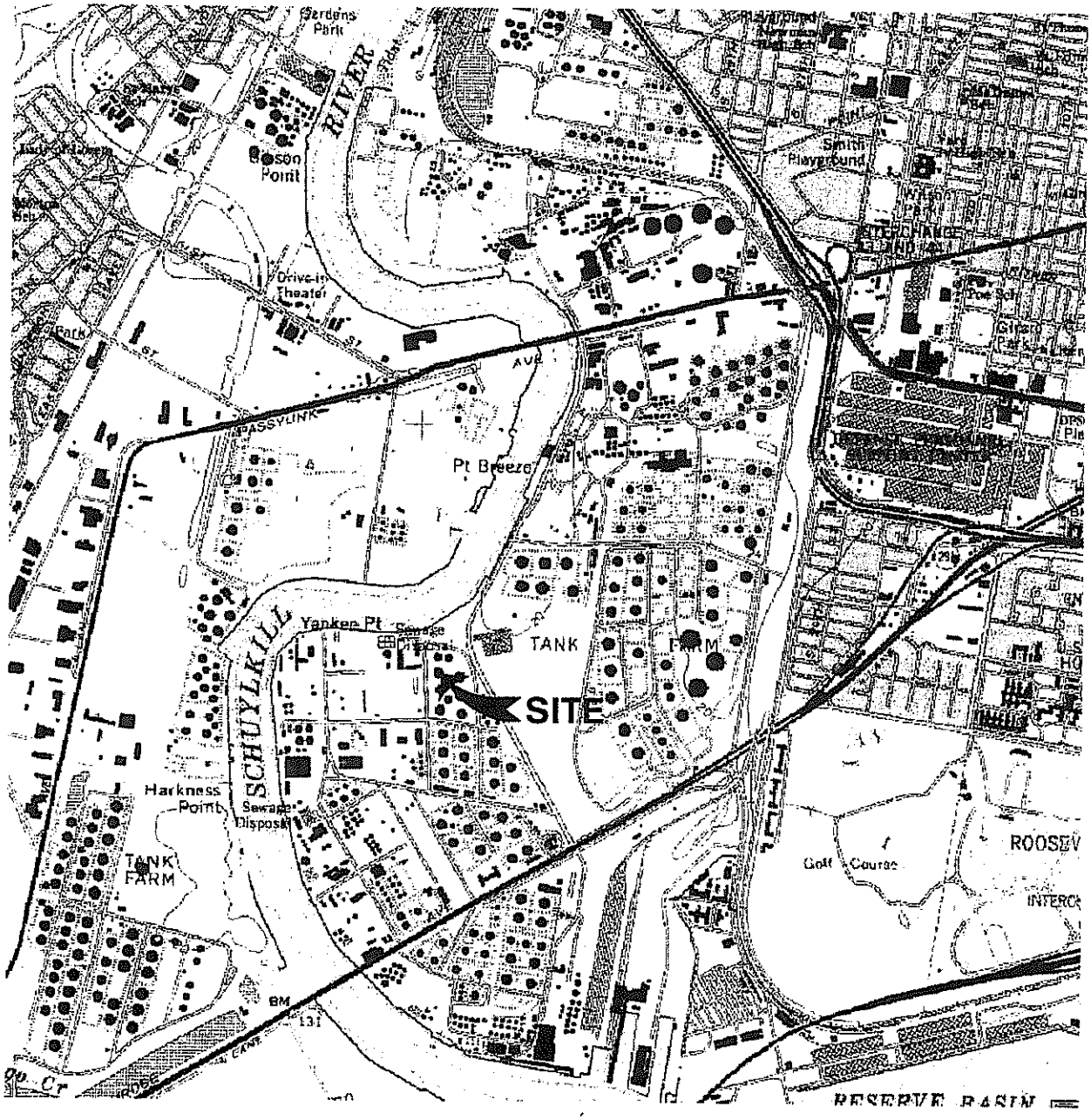
Sincerely,
SECOR International Incorporated

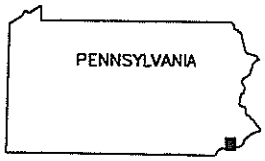
Sergio Morescalchi, P.G.
Project Geologist

c: James Oppenheim (Sunoco)
Steve Baggett (SECOR)
Project File

P:\Clients\Sunoco\AST Investigations\AST 283\AST 283 SAR Oct 2005 doc

FIGURES





QUADRANGLE LOCATION

N

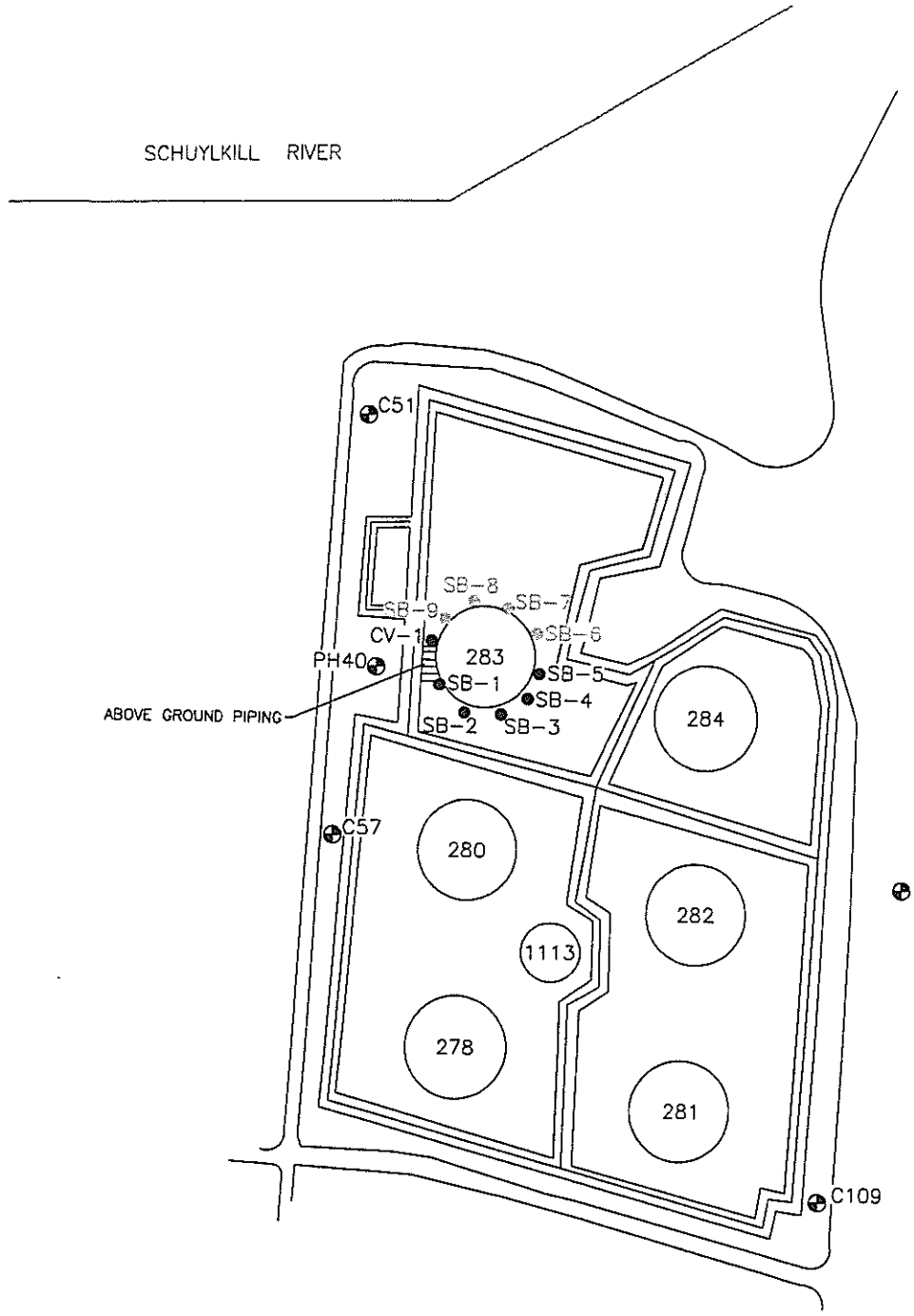
0 1/2 1

SCALE (MILES)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PHILADELPHIA, PENNSYLVANIA–NEW JERSEY; 1995

SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075/875-8286 (FAX)	FOR: SUNOCO, INC. PHILADELPHIA REFINERY PHILADELPHIA, PENNSYLVANIA		SITE LOCATION MAP AST 283 AREA		FIGURE: 1
	JOB NUMBER: 62SU.01046	DRAWN BY: KEF	CHECKED BY:	APPROVED BY:	DATE: 10/24/2005

62SU-01046-AST283-SL.DWG



LEGEND:

- MONITORING WELL
- SOIL/GROUNDWATER SAMPLE LOCATIONS
- INACCESSIBLE SOIL/GROUNDWATER SAMPLE LOCATIONS

N

0 200 400

SCALE IN FEET

102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA
PHONE: (484) 875-3075/875-9286 (FAX)

FOR:

SUNOCO, INC.
PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA

SOIL AND GROUNDWATER SAMPLE LOCATIONS
AST 283
JUNE 28, 2005

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
62SU.01046	KEF	SM		07/13/2005

FILEPATH: SUNOCO/AST INVESTIGATIONS/AST 283

62SU-01046-AST283-SB.DWG

TABLES

TABLE 1

Summary of Soil Analytical Results

AST 283
Sunoco Philadelphia Refinery
Philadelphia, Pennsylvania

Sample Identification	SB-1	SB-3	SB-4	SB-5	CV-1	MSCs		
Sample Collection Depth (FBG)	1.0-1.5	1.0-1.5	1.0-1.5	1.0-1.5	0.0-0.5	Direct Contact, Non-residential, 0-2 feet (1)	Direct Contact, Non-residential, 2-15 feet (1)	Soil to Groundwater, Used Aquifer, Non-residential (2)
Sample Collection Date	6/28/2005	6/28/2005	6/28/2005	6/28/2005	6/28/2005			
VOCs								
Benzene	ND(30)	59 J	33 J	ND(27)	ND (27)	210,000	240,000	500
Toluene	73 J	74 J	200 J	ND(55)	ND (54)	10,000,000	10,000,000	100,000
Ethylbenzene	ND(59)	ND(51)	64 J	ND(55)	ND (54)	10,000,000	10,000,000	70,000
Isopropylbenzene	ND(59)	ND(51)	ND(59)	ND(55)	ND (54)	10,000,000	10,000,000	1,600,000
Naphthalene	ND(59)	ND(51)	260 J	ND(55)	ND (54)	56,000,000	190,000,000	25,000
1,2 Dichloroethane	ND(59)	ND(51)	ND(59)	ND(55)	ND (54)	63,000	73,000	500
1,2 Dibromoethane	ND(59)	ND(51)	ND(59)	ND(55)	ND (54)	930	8,600	5
Methyl Tertiary Butyl Ether	ND(30)	ND(26)	ND(29)	ND(27)	ND (27)	3,200,000	3,700,000	2,000
Xylene (Total)	ND(59)	ND(51)	170 J	ND(55)	ND (54)	10,000,000	10,000,000	1,000,000
SVOCs								
Anthracene	ND(960)	ND(190)	460 J	ND(990)	ND (190)	190,000,000	190,000,000	350,000
Benzo(a)anthracene	ND(960)	260 J	920 J	ND(990)	ND (190)	110,000	190,000,000	320,000
Benzo(a)pyrene	ND(960)	260 J	900 J	ND(990)	ND (190)	11,000	190,000,000	46,000
Benzo(b)fluoranthene	ND(960)	320 J	850 J	ND(990)	ND (190)	110,000	190,000,000	170,000
Benzo(ghi)perylene	ND(960)	ND(190)	620 J	ND(990)	260 J	170,000,000	190,000,000	180,000
Chrysene	1,600 J	220 J	1,100	ND(990)	ND (190)	11,000,000	190,000,000	230,000
Fluorene	ND(960)	ND(190)	210 J	ND(990)	ND (190)	110,000,000	190,000,000	3,800,000
Indeno(1,2,3-cd)pyrene	ND(960)	ND(190)	510 J	ND(990)	ND (190)	110,000	190,000,000	28,000,000
Phenanthrene	ND(960)	370 J	790 J	ND(990)	ND (190)	190,000,000	190,000,000	10,000,000
Pyrene	ND(960)	480 J	1,000	ND(990)	ND (190)	84,000,000	190,000,000	2,200,000
Metals								
Lead	317	97.9	113	81.1	121	1,000	190,000	450

Notes:

FBG = Feet Below Grade

All concentrations are in ug/kg (micrograms per kilogram), except lead which is in mg/kg (milligrams per kilogram)

ND (30) = Not detected at or above the laboratory reporting limit

J = Estimated value

MSCs = Medium-Specific Concentrations

(1)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 A (Revised November 24, 2001)

(2)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Table 3 B (Revised November 24, 2001)

P:\Clients\Sunoco\AST Investigations\AST 283\ast 283 results june 2005.xls]gw

TABLE 2

Summary of Groundwater Analytical Results

AST 283
Sunoco Philadelphia Refinery
Philadelphia, Pennsylvania

Sample Identification / Sample Collection Date	SB-2 / 6/28/2005	MSCs Non-Residential Area, Used Aquifer (1)
VOCs		
Benzene	ND(0.5)	5
Toluene	ND(0.7)	1,000
Ethylbenzene	ND(0.8)	700
Isopropylbenzene	ND(1)	2,300
Naphthalene	ND(1)	100
1,2 Dichloroethane	ND(1)	5
1,2 Dibromoethane	ND (0.0096)	0.05
Methyl Tertiary Butyl Ether	ND(0.5)	20
Xylene (Total)	ND(0.8)	10,000
SVOCs		
Anthracene	0.72	66
Benzo(a)anthracene	3.0	3.6
Benzo(a)pyrene	**4.6**	0.2
Benzo(b)fluoranthene	**2.4**	1.2
Benzo(ghi)perylene	**3.7**	0.26
Chrysene	**4.4**	1.9
Fluorene	1.3	1,900
Indeno(1,2,3-cd)pyrene	2.7	3.6
Phenanthrene	3.5	1,100
Pyrene	10	130
Metals		
Lead	NA	5

Notes:

All concentrations are in ug/l (micrograms per liter)

NA= Not Analyzed

ND (0.5) = Not detected at or above the laboratory reporting limit

J = Estimated value

MSCs = Medium-Specific Concentrations

(1)= Pennsylvania Land Recycling Program (25 PA code Chapter 250), Appendix A, Tables 1 and 2 (Revised November 24, 2001)

BOLD = Exceeds PADEP Medium-Specific Concentration

P:\Clients\Sunoco\AST Investigations\AST 283\[ast 283 results june 2005.xls]gw

APPENDIX A

Stephan Brown 05-12-2004 Facsimile

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Environmental Cleanup Program

2 East Main Street
Norristown, PA 19401

Date: 05/12/2004

Time: 1156 hours

Number of pages including cover sheet: 1

To: Sergio Morescalchi
SECOR International Incorporated

Phone: 484-875-3075
Fax phone: 484-875-9286
CC:

From: Stephan Brown
Water Quality Specialist

Stephan Brown

Phone: 484-250-5712
Fax phone: 484-250-5961

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please comment

This is in regard to the facsimile and emails you sent to the Department on May 3, 2004 for Tank 045A (Sunoco Tank number 283). The tank is scheduled to be closed-in-place in the near future. Based on the information submitted in the fax nine soils samples and four water samples should be collected. The soil samples should be equidistant around the tank and collected at the soil/water interface. The initial sample should be started at the most down gradient point based on groundwater flow and go around from there. Four ground water samples should also be collected. One from the up gradient end of the tank and three from down gradient soil locations around the perimeter of the concrete base. These can be taken from the same locations as the soil samples. Please follow standard protocol when collecting samples if contamination is encountered. The sampling of soils and groundwater should take into account tidal influence and geologic conditions.

PLEASE CALL IF YOU ENCOUNTER PROBLEMS WITH THIS FAX

APPENDIX B

Laboratory Analytical Report

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

ANALYTICAL RESULTS

Prepared for:

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341
484-875-9075

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 950598. Samples arrived at the laboratory on Wednesday, June 29, 2005. The PO# for this group is SUNOCO AST 283.

Client Description	Lancaster Labs Number
SB-1 Grab Soil Sample	4559618
SB-2 Grab Water Sample	4559619
SB-3 Grab Soil Sample	4559620
SB-4 Grab Soil Sample	4559621
SB-5 Grab Soil Sample	4559622
CV-1 Grab Soil Sample	4559623
Trip Blank Methanol Sample	4559624
Trip Blank Water Sample	4559625

1 COPY TO	Sun: SECOR International, Inc	Attn: Steve Baggett
1 COPY TO	Secor International, Inc.	Attn: Sergio Morescalchi

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Questions? Contact your Client Services Representative
Sandra L Patton at (717) 656-2300

Respectfully Submitted,

Michele J. Smith

Michele J. Smith
Group Leader

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559618

SB-1 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 09:20 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

SB1AS

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
06955	Lead	7439-92-1	317.		0.900	mg/kg	1
00111	Moisture	n.a.	13.3		0.50	%	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

07804 PAHs in Soil by GC/MS

01195	Pyrene	129-00-0	N.D.		960.	ug/kg	5
03768	Fluorene	86-73-7	N.D.		960.	ug/kg	5
03775	Phenanthrene	85-01-8	N.D.		960.	ug/kg	5
03776	Anthracene	120-12-7	N.D.		960.	ug/kg	5
03781	Benzo(a)anthracene	56-55-3	N.D.		960.	ug/kg	5
03782	Chrysene	218-01-9	1,600.	J	960.	ug/kg	5
03786	Benzo(b)fluoranthene	205-99-2	N.D.		960.	ug/kg	5
03788	Benzo(a)pyrene	50-32-8	N.D.		960.	ug/kg	5
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		960.	ug/kg	5
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		960.	ug/kg	5

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

02308 UST-Soils by 8260B

02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		30.	ug/kg	51.44
05460	Benzene	71-43-2	N.D.		30.	ug/kg	51.44
05461	1,2-Dichloroethane	107-06-2	N.D.		59.	ug/kg	51.44
05466	Toluene	108-88-3	73.	J	59.	ug/kg	51.44
05471	1,2-Dibromoethane	106-93-4	N.D.		59.	ug/kg	51.44
05474	Ethylbenzene	100-41-4	N.D.		59.	ug/kg	51.44
05479	Isopropylbenzene	98-82-8	N.D.		59.	ug/kg	51.44
05498	Naphthalene	91-20-3	N.D.		59.	ug/kg	51.44
06301	Xylene (Total)	1330-20-7	N.D.		59.	ug/kg	51.44

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559618

SB-1 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 09:20 by SM

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

SB1AS

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	07/13/2005 07:56	Joanne M Gates	1
00111	Moisture	EPA 160.3 modified	1	07/13/2005 12:01	William C Schwebel	1
07804	PAHs in Soil by GC/MS	SW-846 8270C	1	07/12/2005 15:41	Joseph M Gambler	5
02308	UST-Soils by 8260B	SW-846 8260B	1	07/12/2005 00:35	Lauren C Marzario	51.44
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	07/11/2005 11:09	Nadine Fegley	n.a.
05708	SW SW846 ICP Digest	SW-846 3050B	1	07/12/2005 19:45	Annamaria Stipkovits	1
07806	BNA Soil Extraction	SW-846 3550B	1	07/11/2005 18:00	Maryan G Attalla	1

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW 4559619

SB-2 Grab Water Sample

SUNOCO: AST 283
Collected:06/28/2005 12:00 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

SB2AS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07879	EDB in Wastewater					
01087	Ethylene dibromide	106-93-4	N.D.	0.0096	ug/l	1
	The sample was received at the laboratory with insufficient time remaining in the hold time for the extraction to be performed. The client was notified and approved proceeding with the extraction and analysis.					
00774	PAH's in Water by HPLC					
00784	Fluorene	86-73-7	1.3	0.49	ug/l	1
00785	Phenanthrene	85-01-8	3.5	0.078	ug/l	1
00789	Anthracene	120-12-7	0.72	0.039	ug/l	1
00811	Pyrene	129-00-0	10.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	3.0	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	2.4	0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	4.6	0.098	ug/l	5
00898	Indeno(1,2,3-cd)pyrene	193-39-5	2.7	0.078	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	3.7	0.098	ug/l	1
07409	Chrysene	218-01-9	4.4	0.078	ug/l	1

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

The recovery of indeno(1,2,3-cd)pyrene was outside of QC limits in the LCS/LCSD. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

02302	UST-Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	1.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	1.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. WW 4559619

SB-2 Grab Water Sample

SUNOCO: AST 283
Collected:06/28/2005 12:00 by SM

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

SB2AS

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07879	EDB in Wastewater	SW-846 8011	1	07/12/2005 12:46	James H Place	1
00774	PAH's in Water by HPLC	SW-846 8310	1	07/13/2005 07:36	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	07/14/2005 11:56	Mark A Clark	5
02302	UST-Waters by 8260B	SW-846 8260B	1	07/12/2005 12:16	Parker D Lindstrom	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	07/12/2005 12:16	Parker D Lindstrom	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	07/11/2005 16:30	Kerrie A Greenfield	1
07786	EDB Extraction	SW-846 8011	1	07/11/2005 11:45	Amanda W Herr	1

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559620

SB-3 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 11:00 by SM

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

SB3AS

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
06955	Lead	7439-92-1	97.9		0.891	mg/kg	1
00111	Moisture	n.a.	12.5		0.50	%	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

07804 PAHs in Soil by GC/MS

01195	Pyrene	129-00-0	480.	J	190.	ug/kg	5
03768	Fluorene	86-73-7	N.D.		190.	ug/kg	5
03775	Phenanthrene	85-01-8	370.	J	190.	ug/kg	5
03776	Anthracene	120-12-7	N.D.		190.	ug/kg	5
03781	Benzo(a)anthracene	56-55-3	260.	J	190.	ug/kg	5
03782	Chrysene	218-01-9	220.	J	190.	ug/kg	5
03786	Benzo(b)fluoranthene	205-99-2	320.	J	190.	ug/kg	5
03788	Benzo(a)pyrene	50-32-8	260.	J	190.	ug/kg	5
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		190.	ug/kg	5
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		190.	ug/kg	5

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

02308 UST-Soils by 8260B

02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		26.	ug/kg	44.88
05460	Benzene	71-43-2	59.	J	26.	ug/kg	44.88
05461	1,2-Dichloroethane	107-06-2	N.D.		51.	ug/kg	44.88
05466	Toluene	108-88-3	74.	J	51.	ug/kg	44.88
05471	1,2-Dibromoethane	106-93-4	N.D.		51.	ug/kg	44.88
05474	Ethylbenzene	100-41-4	N.D.		51.	ug/kg	44.88
05479	Isopropylbenzene	98-82-8	N.D.		51.	ug/kg	44.88
05498	Naphthalene	91-20-3	N.D.		51.	ug/kg	44.88
06301	Xylene (Total)	1330-20-7	N.D.		51.	ug/kg	44.88

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559620

SB-3 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 11:00 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

SB3AS

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	07/13/2005 08:01	Joanne M Gates	1
00111	Moisture	EPA 160.3 modified	1	07/13/2005 12:01	William C Schwebel	1
07804	PAHs in Soil by GC/MS	SW-846 8270C	1	07/12/2005 16:33	Joseph M Gambler	5
02308	UST-Soils by 8260B	SW-846 8260B	1	07/12/2005 04:22	Stephanie A Selis	44.88
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	07/11/2005 11:10	Nadine Fegley	n.a.
05708	SW SW846 ICP Digest	SW-846 3050B	1	07/12/2005 19:45	Annamaria Stipkovits	1
07806	BNA Soil Extraction	SW-846 3550B	1	07/11/2005 18:00	Maryan G Attalla	1

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559621

SB-4 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 11:30 by SM

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

SB4AS

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
06955	Lead	7439-92-1	113.		0.877	mg/kg	1
00111	Moisture	n.a.	13.7		0.50	%	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

07804 PAHs in Soil by GC/MS

01195	Pyrene	129-00-0	1,000.		190.	ug/kg	5
03768	Fluorene	86-73-7	210.	J	190.	ug/kg	5
03775	Phenanthrene	85-01-8	790.	J	190.	ug/kg	5
03776	Anthracene	120-12-7	460.	J	190.	ug/kg	5
03781	Benzo(a)anthracene	56-55-3	920.	J	190.	ug/kg	5
03782	Chrysene	218-01-9	1,100.		190.	ug/kg	5
03786	Benzo(b)fluoranthene	205-99-2	850.	J	190.	ug/kg	5
03788	Benzo(a)pyrene	50-32-8	900.	J	190.	ug/kg	5
03789	Indeno(1,2,3-cd)pyrene	193-39-5	510.	J	190.	ug/kg	5
03791	Benzo(g,h,i)perylene	191-24-2	620.	J	190.	ug/kg	5

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

02308 UST-Soils by 8260B

02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		29.	ug/kg	50.92
05460	Benzene	71-43-2	33.	J	29.	ug/kg	50.92
05461	1,2-Dichloroethane	107-06-2	N.D.		59.	ug/kg	50.92
05466	Toluene	108-88-3	200.	J	59.	ug/kg	50.92
05471	1,2-Dibromoethane	106-93-4	N.D.		59.	ug/kg	50.92
05474	Ethylbenzene	100-41-4	64.	J	59.	ug/kg	50.92
05479	Isopropylbenzene	98-82-8	N.D.		59.	ug/kg	50.92
05498	Naphthalene	91-20-3	260.	J	59.	ug/kg	50.92
06301	Xylene (Total)	1330-20-7	170.	J	59.	ug/kg	50.92

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559621

SB-4 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 11:30 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

SB4AS

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	07/13/2005 08:15	Joanne M Gates	1
00111	Moisture	EPA 160.3 modified	1	07/13/2005 12:01	William C Schwebel	1
07804	PAHs in Soil by GC/MS	SW-846 8270C	1	07/12/2005 17:25	Joseph M Gambler	5
02308	UST-Soils by 8260B	SW-846 8260B	1	07/12/2005 04:45	Stephanie A Selis	50.92
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	07/11/2005 11:12	Nadine Fegley	n.a.
05708	SW SW846 ICP Digest	SW-846 3050B	1	07/12/2005 19:45	Annamaria Stipkovits	1
07806	BNA Soil Extraction	SW-846 3550B	1	07/11/2005 18:00	Maryan G Attalla	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559622

SB-5 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 13:00 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

SB5AS

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
06955	Lead	7439-92-1	81.1	0.906	mg/kg	1
00111	Moisture	n.a.	15.6	0.50	%	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

07804 PAHs in Soil by GC/MS

01195	Pyrene	129-00-0	N.D.	990.	ug/kg	5
03768	Fluorene	86-73-7	N.D.	990.	ug/kg	5
03775	Phenanthrene	85-01-8	N.D.	990.	ug/kg	5
03776	Anthracene	120-12-7	N.D.	990.	ug/kg	5
03781	Benzo(a)anthracene	56-55-3	N.D.	990.	ug/kg	5
03782	Chrysene	218-01-9	N.D.	990.	ug/kg	5
03786	Benzo(b)fluoranthene	205-99-2	N.D.	990.	ug/kg	5
03788	Benzo(a)pyrene	50-32-8	N.D.	990.	ug/kg	5
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	990.	ug/kg	5
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	990.	ug/kg	5

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

Due to sample matrix interferences observed during the extraction, the normal reporting limits could not be obtained.

02308 UST-Soils by 8260B

02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	27.	ug/kg	46.21
05460	Benzene	71-43-2	N.D.	27.	ug/kg	46.21
05461	1,2-Dichloroethane	107-06-2	N.D.	55.	ug/kg	46.21
05466	Toluene	108-88-3	N.D.	55.	ug/kg	46.21
05471	1,2-Dibromoethane	106-93-4	N.D.	55.	ug/kg	46.21
05474	Ethylbenzene	100-41-4	N.D.	55.	ug/kg	46.21
05479	Isopropylbenzene	98-82-8	N.D.	55.	ug/kg	46.21
05498	Naphthalene	91-20-3	N.D.	55.	ug/kg	46.21
06301	Xylene (Total)	1330-20-7	N.D.	55.	ug/kg	46.21

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559622

SB-5 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 13:00 by SM

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

SB5AS

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	07/13/2005 08:20	Joanne M Gates	1
00111	Moisture	EPA 160.3 modified	1	07/13/2005 12:01	William C Schwebel	1
07804	PAHs in Soil by GC/MS	SW-846 8270C	1	07/13/2005 07:48	Joseph M Gambler	5
02308	UST-Soils by 8260B	SW-846 8260B	1	07/12/2005 05:08	Stephanie A Selis	46.21
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	07/11/2005 11:13	Nadine Fegley	n.a.
05708	SW SW846 ICP Digest	SW-846 3050B	1	07/12/2005 19:45	Annamaria Stipkovits	1
07806	BNA Soil Extraction	SW-846 3550B	1	07/11/2005 18:00	Maryan G Attalla	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4559623

CV-1 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 13:30 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

CV1AS

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
06955	Lead	7439-92-1	121.		0.879	mg/kg	1
00111	Moisture	n.a.	12.1		0.50	%	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

07804 PAHs in Soil by GC/MS

01195	Pyrene	129-00-0	N.D.		190.	ug/kg	5
03768	Fluorene	86-73-7	N.D.		190.	ug/kg	5
03775	Phenanthrene	85-01-8	N.D.		190.	ug/kg	5
03776	Anthracene	120-12-7	N.D.		190.	ug/kg	5
03781	Benzo(a)anthracene	56-55-3	N.D.		190.	ug/kg	5
03782	Chrysene	218-01-9	N.D.		190.	ug/kg	5
03786	Benzo(b)fluoranthene	205-99-2	N.D.		190.	ug/kg	5
03788	Benzo(a)pyrene	50-32-8	N.D.		190.	ug/kg	5
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		190.	ug/kg	5
03791	Benzo(g,h,i)perylene	191-24-2	260.	J	190.	ug/kg	5

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.

02308 UST-Soils by 8260B

02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		27.	ug/kg	47.48
05460	Benzene	71-43-2	N.D.		27.	ug/kg	47.48
05461	1,2-Dichloroethane	107-06-2	N.D.		54.	ug/kg	47.48
05466	Toluene	108-88-3	N.D.		54.	ug/kg	47.48
05471	1,2-Dibromoethane	106-93-4	N.D.		54.	ug/kg	47.48
05474	Ethylbenzene	100-41-4	N.D.		54.	ug/kg	47.48
05479	Isopropylbenzene	98-82-8	N.D.		54.	ug/kg	47.48
05498	Naphthalene	91-20-3	N.D.		54.	ug/kg	47.48
06301	Xylene (Total)	1330-20-7	N.D.		54.	ug/kg	47.48

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. SW 4559623

CV-1 Grab Soil Sample

SUNOCO: AST 283
Collected:06/28/2005 13:30 by SM

Account Number: 11183

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

CV1AS

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06955	Lead	SW-846 6010B	1	07/13/2005 08:25	Joanne M Gates	1
00111	Moisture	EPA 160.3 modified	1	07/13/2005 12:01	William C Schwebel	1
07804	PAHs in Soil by GC/MS	SW-846 8270C	1	07/13/2005 08:40	Joseph M Gambler	5
02308	UST-Soils by 8260B	SW-846 8260B	1	07/12/2005 05:31	Stephanie A Selis	47.48
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	07/11/2005 11:14	Nadine Fegley	n.a.
05708	SW SW846 ICP Digest	SW-846 3050B	1	07/12/2005 19:45	Annamaria Stipkovits	1
07806	BNA Soil Extraction	SW-846 3550B	1	07/11/2005 18:00	Maryan G Attalla	1

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. G5 4559624

Trip Blank Methanol Sample

SUNOCO: AST 283
Collected: n.a.

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

TBMAS

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02308	UST-Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	25.	ug/kg	50
05460	Benzene	71-43-2	N.D.	25.	ug/kg	50
05461	1,2-Dichloroethane	107-06-2	N.D.	50.	ug/kg	50
05466	Toluene	108-88-3	N.D.	50.	ug/kg	50
05471	1,2-Dibromoethane	106-93-4	N.D.	50.	ug/kg	50
05474	Ethylbenzene	100-41-4	N.D.	50.	ug/kg	50
05479	Isopropylbenzene	98-82-8	N.D.	50.	ug/kg	50
05498	Naphthalene	91-20-3	N.D.	50.	ug/kg	50
06301	Xylene (Total)	1330-20-7	N.D.	50.	ug/kg	50

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02308	UST-Soils by 8260B	SW-846 8260B	1	07/12/2005 03:59	Stephanie A Selis	50
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	07/11/2005 11:20	Nadine Fegley	n.a.

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW 4559625

Trip Blank Water Sample

SUNOCO: AST 283
Collected: n.a.

Submitted: 06/29/2005 15:35
Reported: 09/08/2005 at 13:36
Discard: 09/23/2005

TBWAS

Account Number: 11183

Sun: SECOR International, Inc
Suite 200
102 Pickering Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07879	EDB in Wastewater					
01087	Ethylene dibromide	106-93-4	N.D.	0.0096	ug/l	1
	The sample was received at the laboratory with insufficient time remaining in the hold time for the extraction to be performed. The client was notified and approved proceeding with the extraction and analysis.					
02302	UST-Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	1.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	1.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07879	EDB in Wastewater	SW-846 8011	1	07/12/2005 13:16	James H Place	1
02302	UST-Waters by 8260B	SW-846 8260B	1	07/12/2005 14:55	Parker D Lindstrom	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	07/12/2005 14:55	Parker D Lindstrom	n.a.
07786	EDB Extraction	SW-846 8011	1	07/11/2005 11:45	Amanda W Herr	1

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sun: SECOR International, Inc
Reported: 09/08/05 at 01:36 PM

Group Number: 950598

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 051900010A	Sample number(s): 4559619,4559625							
Ethylene dibromide	N.D.	0.010	ug/l	104	100	60-140	4	20
Batch number: 05192SLB026	Sample number(s): 4559618,4559620-4559623							
Pyrene	N.D.	33.	ug/kg	85		67-116		
Fluorene	N.D.	33.	ug/kg	100		66-115		
Phenanthrene	N.D.	33.	ug/kg	104		70-107		
Anthracene	N.D.	33.	ug/kg	97		69-109		
Benzo(a)anthracene	N.D.	33.	ug/kg	91		73-111		
Chrysene	N.D.	33.	ug/kg	93		72-110		
Benzo(b)fluoranthene	N.D.	33.	ug/kg	105		68-117		
Benzo(a)pyrene	N.D.	33.	ug/kg	102		72-117		
Indeno(1,2,3-cd)pyrene	N.D.	33.	ug/kg	98		66-123		
Benzo(g,h,i)perylene	N.D.	33.	ug/kg	97		66-120		
Batch number: 05192WAD026	Sample number(s): 4559619							
Fluorene	N.D.	0.50	ug/l	86	86	61-116	0	30
Phenanthrene	N.D.	0.080	ug/l	89	89	67-115	0	30
Anthracene	N.D.	0.040	ug/l	82	80	68-113	1	30
Pyrene	N.D.	0.18	ug/l	89	90	69-113	1	30
Benzo(a)anthracene	N.D.	0.020	ug/l	91	93	73-114	1	30
Benzo(b)fluoranthene	N.D.	0.040	ug/l	90	90	72-113	0	30
Benzo(a)pyrene	N.D.	0.020	ug/l	81	81	68-112	1	30
Indeno(1,2,3-cd)pyrene	N.D.	0.080	ug/l	60*	62*	67-106	4	30
Benzo(g,h,i)perylene	N.D.	0.10	ug/l	63	64	7-126	1	30
Chrysene	N.D.	0.080	ug/l	91	92	70-111	1	30
Batch number: 051935708007	Sample number(s): 4559618,4559620-4559623							
Lead	N.D.	0.780	mg/kg	97		80-120		
Batch number: 05194820001A	Sample number(s): 4559618,4559620-4559623							
Moisture				100		99-101		
Batch number: L051922AB	Sample number(s): 4559619,4559625							
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	98		77-127		
Benzene	N.D.	0.5	ug/l	97		85-117		
1,2-Dichloroethane	N.D.	1.	ug/l	105		77-132		
Toluene	N.D.	0.7	ug/l	92		85-115		
Ethylbenzene	N.D.	0.8	ug/l	93		82-119		
Isopropylbenzene	N.D.	1.	ug/l	94		80-120		
Naphthalene	N.D.	1.	ug/l	83		61-116		
Xylene (Total)	N.D.	0.8	ug/l	94		83-113		
Batch number: Q051881AB	Sample number(s): 4559618							

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sun: SECOR International, Inc
Reported: 09/08/05 at 01:36 PM

Group Number: 950598

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Methyl Tertiary Butyl Ether	N.D.	25.	ug/kg	103	104	75-125	2	30
Benzene	N.D.	25.	ug/kg	97	98	77-119	2	30
1,2-Dichloroethane	N.D.	50.	ug/kg	114	114	76-126	0	30
Toluene	N.D.	50.	ug/kg	96	97	81-116	2	30
1,2-Dibromoethane	N.D.	50.	ug/kg	100	102	77-114	2	30
Ethylbenzene	N.D.	50.	ug/kg	99	100	82-115	2	30
Isopropylbenzene	N.D.	50.	ug/kg	97	100	79-117	3	30
Naphthalene	N.D.	50.	ug/kg	88	91	52-121	3	30
Xylene (Total)	N.D.	50.	ug/kg	99	101	82-117	1	30
Batch number: Q051881AC	Sample number(s): 4559620-4559624							
Methyl Tertiary Butyl Ether	N.D.	25.	ug/kg	103	104	75-125	2	30
Benzene	N.D.	25.	ug/kg	97	98	77-119	2	30
1,2-Dichloroethane	N.D.	50.	ug/kg	114	114	76-126	0	30
Toluene	N.D.	50.	ug/kg	96	97	81-116	2	30
1,2-Dibromoethane	N.D.	50.	ug/kg	100	102	77-114	2	30
Ethylbenzene	N.D.	50.	ug/kg	99	100	82-115	2	30
Isopropylbenzene	N.D.	50.	ug/kg	97	100	79-117	3	30
Naphthalene	N.D.	50.	ug/kg	88	91	52-121	3	30
Xylene (Total)	N.D.	50.	ug/kg	99	101	82-117	1	30

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 051900010A	Sample number(s): 4559619,4559625								
Ethylene dibromide	100		65-135			N.D.	N.D.	0 (1)	30
Batch number: 05192SLB026	Sample number(s): 4559618,4559620-4559623								
Pyrene	86	94	25-159	9	30				
Fluorene	109	101	48-130	8	30				
Phenanthrene	108	108	28-155	1	30				
Anthracene	103	100	47-135	3	30				
Benzo(a)anthracene	93	93	39-144	1	30				
Chrysene	93	93	38-144	0	30				
Benzo(b)fluoranthene	102	98	24-155	5	30				
Benzo(a)pyrene	98	95	38-142	3	30				
Indeno(1,2,3-cd)pyrene	87	88	1-186	0	30				
Benzo(g,h,i)perylene	88	89	32-150	1	30				
Batch number: 051935708007	Sample number(s): 4559618,4559620-4559623								
Lead	94	99	75-125	3	20	30.5	30.1	1	20
Batch number: 05194820001A	Sample number(s): 4559618,4559620-4559623								
Moisture						17.5	15.9	10	15
Batch number: L051922AB	Sample number(s): 4559619,4559625								
Methyl Tertiary Butyl Ether	92	93	69-134	1	30				
Benzene	96	97	83-128	1	30				
1,2-Dichloroethane	101	101	73-136	0	30				
Toluene	99	99	83-127	0	30				
Ethylbenzene	101	100	82-129	1	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sun: SECOR International, Inc
Reported: 09/08/05 at 01:36 PM

Group Number: 950598

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Isopropylbenzene	103	103	81-130	0	30				
Naphthalene	85	86	50-124	2	30				
Xylene (Total)	101	100	82-130	0	30				

Surrogate Quality Control

Analysis Name: EDB in Wastewater
Batch number: 051900010A

	1,1,2,2-Tetrachloroethane
4559619	91
4559625	97
Blank	104
DUP	83
LCS	98
LCSD	83
MS	90
Limits:	52-120

Analysis Name: PAHs in Soil by GC/MS
Batch number: 05192SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
4559618	91	89	92
4559620	85	73	85
4559621	99	93	86
4559622	75	81	90
4559623	75	86	77
Blank	89	86	100
LCS	97	96	95
MS	108	107	97
MSD	101	91	103
Limits:	47-128	55-123	51-158

Analysis Name: PAH's in Water by HPLC
Batch number: 05192WAD026

	Nitrobenzene	Triphenylene
4559619	100	0*
Blank	108	99
LCS	100	97
LCSD	105	101
Limits:	63-154	55-130

Analysis Name: UST-Waters by 8260B
Batch number: L051922AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sun: SECOR International, Inc
Reported: 09/08/05 at 01:36 PM

Group Number: 950598

Surrogate Quality Control

4559619	102	97	92	92
4559625	101	97	93	90
Blank	102	98	92	90
LCS	102	99	92	97
MS	99	97	96	98
MSD	99	96	95	96
Limits:	81-120	82-112	85-112	83-113

Analysis Name: UST-Soils by 8260B
Batch number: Q051881AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4559618	95	90	84	87
Blank	99	96	91	91
LCS	100	96	94	98
LCSD	102	96	96	100
Limits:	70-129	70-121	70-130	70-128

Analysis Name: UST-Soils by 8260B
Batch number: Q051881AC

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4559620	95	90	84	85
4559621	92	87	82	85
4559622	88	86	76	78
4559623	88	86	75	82
4559624	96	93	87	86
Blank	101	97	91	91
LCS	100	96	94	98
LCSD	102	96	96	100
Limits:	70-129	70-121	70-130	70-128

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 11183 Group# 950598 Sample # 4559618-25

COC # 0087843

1 of 1

Please print. Instructions on reverse side correspond with circled numbers.

1
Client: SECOR Acct. #:
Project Name/#: SUNOCO AST 283 PWSID #:
Project Manager: S. MORESCALCHI P.O.#:
Sampler: S. MORESCALCHI Quote #:
Name of state where samples were collected: PA

For Lab Use Only
FSC:
SCR #:

2			3					4	5									6
									PADEP LEADED + UNLEADED GAS	FUEL OIL #4, 5 & 6	USED MOTOR OIL							Remarks
SB-1	06-28-05	0920	✓		✓			4	✓	✓	✓							VIAL # 1749
SB-2	↓	1200	✓			✓		8	✓	✓	✓							
SB-3		1100	✓		✓			3	✓	✓	✓							VIAL # 1748
SB-4		1130	✓		✓			3	✓	✓	✓							1753
SB-5		1300	✓		✓			3	✓	✓	✓							1750
CV-1		1330	✓		✓			3	✓	✓	✓							1751
TRIP BLANK (METHANOL)							✓	1										
TRIP BLANK (WATER)							✓	4										

7 **Turnaround Time Requested (TAT) (please circle):** Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

8 **Data Package Options** (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

9

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	06-29-05	1400	P. Lefever	6/29/05	1400
P. Lefever	6/29/05	1535			
			[signature]	6/29/05	15:35

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected
TNTC	Too Numerous To Count
IU	International Units
umhos/cm	micromhos/cm
C	degrees Celsius
meq	milliequivalents
g	gram(s)
ug	microgram(s)
ml	milliliter(s)
m3	cubic meter(s)
BMQL	Below Minimum Quantitation Level
MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units
NTU	nephelometric turbidity units
F	degrees Fahrenheit
lb.	pound(s)
kg	kilogram(s)
mg	milligram(s)
l	liter(s)
ul	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

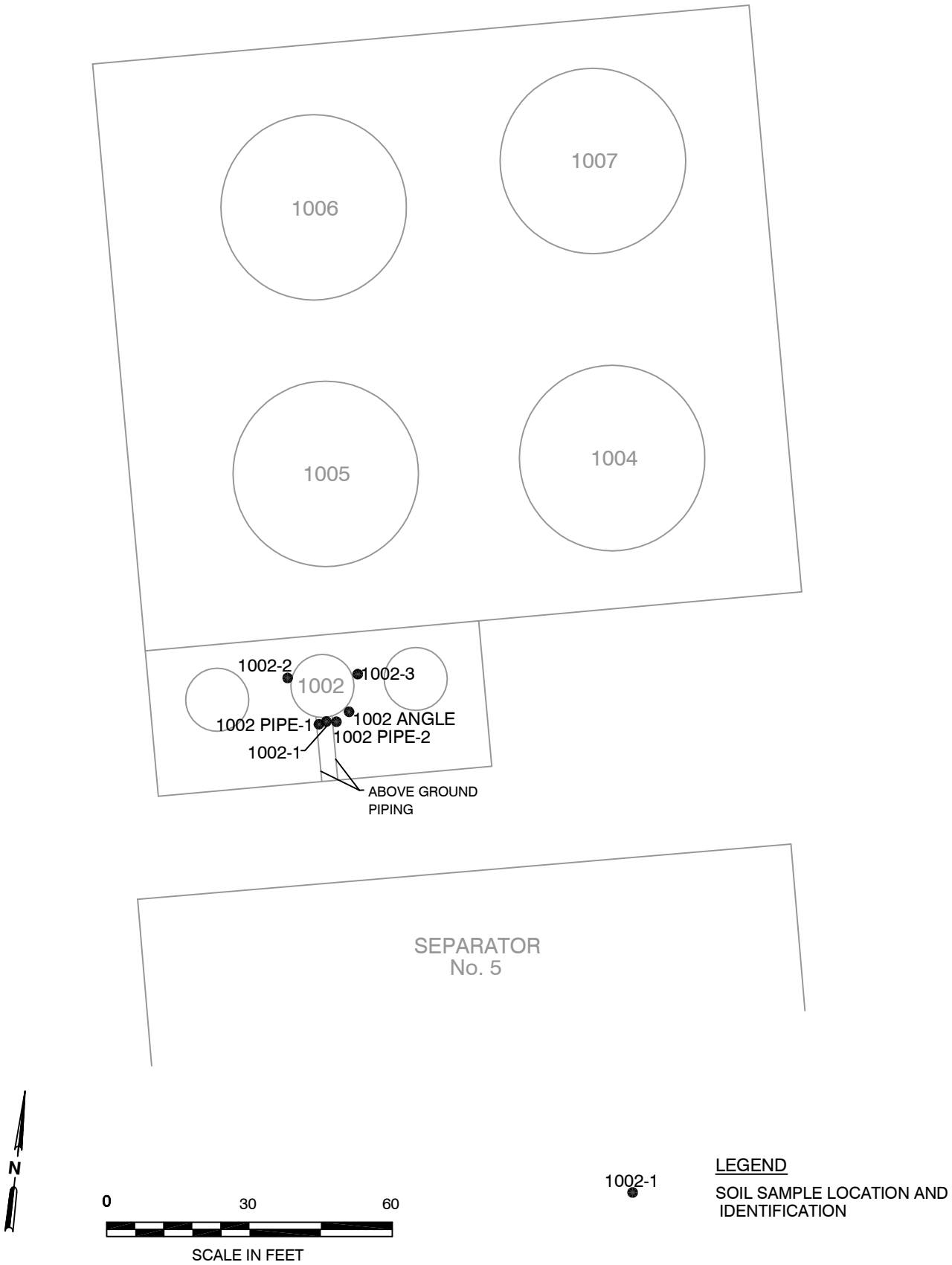
Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

GP 1002



SOURCE: HANDEX, PROJECT 110535.002, TITLE: BASE MAP/MAIN REFINERY, FIGURE 2, DRAWING NAME: 110535PRBM-1.DWG, DATE: 01/28/05

SECOR
102 PICKERING WAY, SUITE 200
EXTON, PENNSYLVANIA
PHONE: (484) 875-3075/875-9286 (FAX)

FOR:				FIGURE:
SUNOCO, INC. (R & M) PHILADELPHIA REFINERY GIRARD POINT PROCESSING AREA		**AST 1002** **SOIL SAMPLE LOCATIONS** **APRIL 7 & MAY 11, 2006**		**2**
JOB NUMBER: 62SU.01156.06	DRAWN BY: KEF	CHECKED BY: SM	APPROVED BY:	DATE: 06/05/2006

Philadelphia Refinery

FILE COPY

Sunoco Inc.
3144 Passyunk Avenue
Philadelphia PA 19145-5299
215 339 2000

Certified Mail Return Receipt Requested - # 7002 0460 0003 1935 5452

June 26, 2006

Ms. Kathy Nagle
Storage Tank Section
PA DEP Southeast Region
2 East Main Street
Norristown, PA 19401

RE: 90-Day Site Characterization Status Reports

Storage Tank Release at PB 119 (PA Seq # 024A)
Point Breeze Process Area (Facility #51-19781)

Storage Tank Release at GP 1002 (PA Seq # 139A)
Girard Point Process Area (Facility #51-36558)

Dear Ms. Nagle:

In response to your Notices of Violation letters dated May 8, 2006 (copies enclosed), enclosed are the requisite 90-Day Site Characterization Status Reports for the two above-reference confirmed releases.

Should you have any questions or comments in reference to these matters, please contact me at 215-339-2074.

Sincerely,

Scott A. Baker
Supervisor, Environmental Department.

SAB/rmr·

Attachments: 90-Day Site Characterization Status Report Forms (2)
Copy of LEPC Notification
PA DEP N.O.V. letters dated May 8, 2006

Cc: Mr. Walter Payne
PA DEP
Environmental Cleanup Program
2 East Main Street
Norristown, PA 19401-4915

File: Release Report PA Tank Law 2006

****PLEASE DO NOT FAX THIS REPORT****

90 DAY SITE CHARACTERIZATION STATUS REPORT

Facility ID Number: 51-19781 **Report Date:** June 26, 2006

Facility Name: Sunoco, Inc. (R&M) Point Breeze Process Area

Facility Address: 3144 Passyunk Ave, Philadelphia, PA 19145

Facility Contact Name: Ron Rosendorn **Phone #:** 215-339-2217

Municipality: Philadelphia **County:** Philadelphia

Release Date: May 2, 2006

Date Municipality Notified: June 7, 2006 **(if a written communication, please attach a copy)**

ACTIVITIES **(Check the appropriate box: 1 = finished; 2 = on-going; 3 = planned; N/A = not applicable):**

1	2	3	N/A	
☐	☐	☐	☒	Identify & mitigate fire, explosion & safety hazards posed by vapor & free product
☐	☐	☐	☒	Identify & sample affected or potentially impacted public and private water supplies & water
☐	☐	☐	☒	Supply sample results to water supply owner(s) and DEP
☐	☐	☐	☒	Provide temporary water supply to replace affected or diminished supplies
☐	☐	☐	☒	Identify sensitive receptors including, but not limited to, basements and utility conduits
☐	☒	☐	☐	Determine or confirm source(s) of contamination
☒	☐	☐	☐	Remove regulated substance from tank system
☐	☒	☐	☐	Recover free product
☐	☐	☒	☐	Remove impacted soil as appropriate
☐	☐	☐	☐	Other (specify: _____

Describe any additional activities (accomplished and planned) performed towards completion of your site characterization report, including potential problems and significant findings:

A remediation system currently exists downgradient to tank PB 119 where contamination was confirmed. This remediation system pumps subsurface liquids to the Point Breeze WWTP for hydrocarbon recovery/wastewater treatment. The remediation area is known as AOI-1 and remediation activites are performed in accordance with the Consent Order and Agreement entered on December 17, 2003 between PA DEP and Sunoco.

NOTE: If you are actively working on your characterization and an extension of time beyond the 180 day report due date is needed, please contact the DEP project officer assigned to the case to discuss the situation.

Submitted by: Scott A. Baker **Date Submitted:** June 26, 2006

Company Name: Sunoco **Phone Number:** 215-339-2074

Address: 3144 Passyunk Ave, Philadelphia, PA 19145

****PLEASE DO NOT FAX THIS REPORT****

90 DAY SITE CHARACTERIZATION STATUS REPORT

Facility ID Number: 51-36558 **Report Date:** June 26, 2006

Facility Name: Sunoco, Inc. (R&M) Girard Point Process Area

Facility Address: 3144 Passyunk Ave, Philadelphia, PA 19145

Facility Contact Name: Ron Rosendorn **Phone #:** 215-339-2217

Municipality: Philadelphia **County:** Philadelphia

Release Date: May 2, 2006

Date Municipality Notified: June 7, 2006 **(if a written communication, please attach a copy)**

ACTIVITIES **(Check the appropriate box: 1 = finished; 2 = on-going; 3 = planned; N/A = not applicable):**

1	2	3	N/A	
☐	☐	☐	☒	Identify & mitigate fire, explosion & safety hazards posed by vapor & free product
☐	☐	☐	☒	Identify & sample affected or potentially impacted public and private water supplies & water
☐	☐	☐	☒	Supply sample results to water supply owner(s) and DEP
☐	☐	☐	☒	Provide temporary water supply to replace affected or diminished supplies
☐	☐	☐	☒	Identify sensitive receptors including, but not limited to, basements and utility conduits
☐	☒	☐	☐	Determine or confirm source(s) of contamination
☒	☐	☐	☐	Remove regulated substance from tank system
☐	☐	☐	☒	Recover free product
☐	☐	☒	☐	Remove impacted soil as appropriate
☐	☐	☐	☐	Other (specify: _____

Describe any additional activities (accomplished and planned) performed towards completion of your site characterization report, including potential problems and significant findings:

A detailed site characterization report for the Sunoco Philadelphia refinery has already been performed under Consent Order and Agreement entered on December 17, 2003 between PA DEP and Sunoco. The area where contamination was confirmed at tank GP 1002 did not have appreciable subsurface contamination that warranted active remediation. The area is actively monitored via downgradient monitoring wells.

NOTE: If you are actively working on your characterization and an extension of time beyond the 180 day report due date is needed, please contact the DEP project officer assigned to the case to discuss the situation.

Submitted by: Scott A. Baker **Date Submitted:** June 26, 2006

Company Name: Sunoco **Phone Number:** 215-339-2074

Address: 3144 Passyunk Ave, Philadelphia, PA 19145

Philadelphia Refiner

COPY

Sunoco Inc.
3144 Passyunk Avenue
Philadelphia PA 19145-52
215 339 2000

Certified Mail Return Receipt Requested - # 7002 0460 0003 1935 5421

June 7, 2006

Mr. Stephan Sinding
PADEP – S. E. Regional Office
Environmental Cleanup Program
Storage Tank Section
2 East Main Street
Norristown, PA 19401

RE: Release Reports PA Tank Regulation 245.305(d)
Point Breeze Process Area: Facility ID# 51-19781
Storage Tanks PB 119 (PA Seq # 024A) and PB 182 (PA Seq # 048A)

Girard Point Process Area: Facility ID# 51-36558
Storage Tanks GP 1002 (PA Seq # 139A) and GP 1100 (PA Seq #140A)

Dear Mr. Sinding:

This letter complies with PA Tank Regulation 245.305 (Reporting Releases). On May 2, 2006, PADEP was notified of reportable releases at two aboveground storage tanks (PB 119 and GP 1002). Also on May 31, 2006, PADEP was notified of reportable releases at two other aboveground storage tanks (PB 182 and GP 1100). Attached are completed Notification of Reportable Release Forms for these releases. Additional details are provided below:

All four aboveground storage tanks are being closed in place in accordance with 245.561, PADEP Technical Document "Closure Requirements for Aboveground Storage Tank Systems", and Sunoco-PaDEP Consent Order and Agreement entered on December 17, 2003.

As required for tank closure, Sunoco has conducted site assessments at these four storage tanks. SECOR International was contracted to perform site assessment soil sampling as part of required tank closure activities. On May 2, 2006, laboratory results were received from confirmatory soil samples taken at PB 119 and GP 1002.

At PB 119, four confirmatory soil samples were taken from underneath underground fill lines. Three of the four sample locations had results that were above the PA standard/action level for the following parameters:

Parameter	Result 1(action level)	Result 2(action level)	Result 3(action level)
Benzene	1.8 ppm (0.5 ppm)	1.7 ppm (0.5 ppm)	71 ppm (0.5 ppm)
Naphthalene	-	-	90 ppm (25 ppm)

At GP 1002, five confirmatory soil samples were taken. Two were under pipe samples and three were tank perimeter samples. One of the perimeter samples had results that were above the PA standard/action levels for the following parameters:

Parameter	Result (action level)
Benzene	1.4 ppm (0.5 ppm)
Naphthalene	30 ppm (25 ppm)

On May 31, laboratory results were received from confirmatory soil samples taken at PB 182 and GP 1100. At PB 182, there were ten confirmatory soil samples taken. Two of the sample results (taken from around the tank perimeter) were above the PA standard/action level for the following parameter:

Parameter	Result 1(action level)	Result 2(action level)
Benzene	2.9 ppm (0.5 ppm)	2.0 ppm (0.5 ppm)

At GP 1100, there were eight confirmatory soil samples taken. One of the sample results (taken from around the tank perimeter) was above the PA standard/action level for the following parameter:

Parameter	Result (action level)
Benzene	1.0 ppm (0.5 ppm)

Also for your information, on May 31, 2006, additional lab results from other confirmatory samples taken at PB 119 were received. These results were from six other sample locations. Three of the six sample results (taken from around the tank perimeter) were above the PA standard/action level for the following parameter:

Parameter	Result 1(action level)	Result 2(action level)	Result 3(action level)
Benzene	8.1 ppm (0.5 ppm)	76 ppm (0.5 ppm)	2.7 ppm (0.5 ppm)

Please be aware that there was no free hydrocarbon product observed during soil sampling activities at any of the sample locations. Therefore, the amount of released material cannot be determined or estimated. SECOR is in the process of preparing site assessment reports for each of these tanks. Based on these reports, existing site characterization data and work that will be conducted under the 2003 CO&A between PaDEP and Sunoco, the need for additional corrective action will be determined.

Should you have any questions or comments in reference to this matter please contact me at 215-339-2074.

Sincerely,

Scott A. Baker

Scott A. Baker
Supervisor, Environmental Department.

SAB/rmr

Attachment: Notification of Reportable Release Form

Cc: Philadelphia Local Emergency Planning Committee
240 Spring Garden Street
Philadelphia, PA 19123

PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P. O. Box 8471
Harrisburg, PA 17105-8471

Approval List:

R. Rosendorn RR

File: AST Releases 2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2
BUREAU OF LAND RECYCLING AND WASTE MANAGEME

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certificatic regulations establish standards of performance f certified installers and inspectors of storage tanks an storage tank facilities.

Subsection 245.132(a)(4) of the regulations require certified installers and inspectors to report to th Department a release of a regulated substance c confirmed or suspected contamination of soil, surface c groundwater from regulated substances observed whil performing services as a certified installer or inspector.

This form may be used to comply with Subsectio 245.132(a)(4). Subsection 245.132(a)(4) require submission of the form within 48 hours of observin suspected or confirmed contamination. Where there is reportable release, the form may be submitted jointly b the owner, operator, certified installer and certifie inspector. In this instance, the form must be received b the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471 FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5960 FAX: 484-250-5961	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRWM0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 36558

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Girard Point Process Area
Facility I.D. Number: 51-36558
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒) I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☐	Unknown	[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)	☒		[S]	[C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 2 / 2006 (m / d / y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 2 / 2006 (m / d / y) Office S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m / d / y) Municipality Philadelphia
Date: / / (m / d / y) Municipality

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 139A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

FACILITY I.D. NUMBER 51 - 36558

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # GP 1002

PA DEP Registration # 139A

See Attached Letter

FACILITY I.D. NUMBER 51 - 36558

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, hereby certify, under penalty of law as provided in 18 P
(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.

Michael D. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

I, _____, hereby certify, under penalty of law as provided in 18 P
(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

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2
BUREAU OF LAND RECYCLING AND WASTE MANAGEMI

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certificati regulations establish standards of performance f certified installers and inspectors of storage tanks ar storage tank facilities.

Subsection 245.132(a)(4) of the regulations require certified installers and inspectors to report to th Department a release of a regulated substance confirmed or suspected contamination of soil, surface groundwater from regulated substances observed whi performing services as a certified installer or inspector.

This form may be used to comply with Subsectio 245.132(a)(4). Subsection 245.132(a)(4) require submission of the form within 48 hours of observin suspected or confirmed contamination. Where there is reportable release, the form may be submitted jointly b the owner, operator, certified installer and certifie inspector. In this instance, the form must be received b the appropriate regional office within 15 days of th notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471
FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5960 FAX: 484-250-5561	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRWM0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 36558

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Girard Point Process Area
Facility I.D. Number: 51-36558
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☐	Unknown	[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)	☒		[S]	[C]
Unknown	☐		[S]	[C]
			[S]	[C]
			[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 30 / 2006 (m / d / y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 30 / 2006 (m / d / y) Office S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m / d / y) Municipality Philadelphia
Date: ___ / ___ / ___ (m / d / y) Municipality ___

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 140A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # GP 1100

PA DEP Registration # 140A

See Attached Letter

FACILITY I.D. NUMBER 51 - 36558

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, hereby certify, under penalty of law as provided in 18 P
(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.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

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

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/

BUREAU OF LAND RECYCLING AND WASTE MANAGEM

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-U

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certificati regulations establish standards of performance f certified installers and inspectors of storage tanks a storage tank facilities.

Subsection 245.132(a)(4) of the regulations require certified installers and inspectors to report to th Department a release of a regulated substance confirmed or suspected contamination of soil, surface groundwater from regulated substances observed whi performing services as a certified installer or inspector.

This form may be used to comply with Subsectio 245.132(a)(4). Subsection 245.132(a)(4) require submission of the form within 48 hours of observin suspected or confirmed contamination. Where there is reportable release, the form may be submitted jointly b the owner, operator, certified installer and certifie inspector. In this instance, the form must be received b the appropriate regional office within 15 days of th notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471
FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5[illegible]0 FAX: 484-250-5261	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX 570-826-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRWM0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 19781

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Point Breeze Process Area
Facility I.D. Number: 51-19781
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☒	Unknown	[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)	☐		[S]	[C]
Unknown	☐		[S]	[C]
			[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 2 / 2006 (m d y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 2 / 2006 (m d y) Office S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m d y) Municipality Philadelphia
Date: / / (m d y) Municipality

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 024A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

FACILITY I.D. NUMBER 51 - 19781

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # PB 119

PA DEP Registration # 024A

See Attached Letter

FACILITY I.D. NUMBER 51 - 19871

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, hereby certify, under penalty of law as provided in 18
(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 facilit and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

I, _____, hereby certify, under penalty of law as provided in 18
(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 be of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

I, _____, hereby certify, under penalty of law as provided in 18 P
(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 bes of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2
BUREAU OF LAND RECYCLING AND WASTE MANAGEMI

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certificatic regulations establish standards of performance f certified installers and inspectors of storage tanks ar storage tank facilities.

Subsection 245.132(a)(4) of the regulations require certified installers and inspectors to report to th Department a release of a regulated substance c confirmed or suspected contamination of soil, surface c groundwater from regulated substances observed whil performing services as a certified installer or inspector.

This form may be used to comply with Subsectio 245.132(a)(4). Subsection 245.132(a)(4) require submission of the form within 48 hours of observin suspected or confirmed contamination. Where there is reportable release, the form may be submitted jointly b the owner, operator, certified installer and certifie inspector. In this instance, the form must be received b the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(at the appropriate address below,
depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471 FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA [illegible] PHONE: 4[illegible] FAX: 484-2[illegible]	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRW0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 19781

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Point Breeze Process Area
Facility I.D. Number: 51-19781
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☐	Unknown	[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)	☒		[S]	[C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 30 / 2006 (m d y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 30 / 2006 (m d y) Office S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m d y) Municipality Philadelphia
Date: / / (m d y) Municipality

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 048A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser Containing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Vandalism	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Piping	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Dispenser	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # PB 182

PA DEP Registration # 048A

See Attached Letter

FACILITY I.D. NUMBER 51 - 19871

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, 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.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

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

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

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
May 8, 2006

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

RECEIVED
MAY 1 6
By RR

NOTICE OF VIOLATION

Mr. Ron Rosendorn
Sunoco, Inc. R & M
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-36558
Girard Point Processing Facility
City of Philadelphia
Philadelphia County

Dear Mr. Rosendorn:

On April 7, 2006, a reportable release of recovered oil was confirmed at your above-named facility. This release constitutes a violation of Section 1310 of the Pennsylvania Storage Tank and Spill Prevention Act. Our purpose in sending you this notice is to advise you of your regulatory responsibility and to provide guidance and details to help you address this release quickly and effectively under the Department's corrective action regulations (Title 25, Chapter 245, subchapter D).

In order to ensure the release is addressed in a prompt and appropriate manner, you should provide a progress report to this office no later than July 5, 2006. A copy is enclosed for your use. Your site characterization report is due October 3, 2006. No extension of the site characterization report due date will be provided without prior written approval from the Department. All requests for deadline extensions shall include a reasonable alternate due date and be submitted to the Department in writing.

Please note that we intend to initiate a compliance action if you fail to comply with the regulations. We encourage you to proceed without delay to hire a qualified environmental consulting firm that has a Registered Professional Geologist on staff that can assist you in accomplishing the requirements outlined below.

1. INTERIM REMEDIAL ACTIONS

Effective interim actions may resolve a problem or reduce the severity of a problem making site cleanup easier and less expensive. Some typical interim actions are listed on the attached *90 Day Site Characterization Status Report* form.

If your release does affect or diminish a private or public water supply, you must provide a temporary water supply for affected users within 48 hours. Within 90 days, a permanent water supply must be in place. Treatment to remove or prevent contamination of a public water supply may require a permit from the Department. We recommend that you contact the regional Water Supply Management Program (WSM) at 484-250-5980 prior to any planned treatment installations on a public source. If you are unsure if a well is classified as a public water source, WSM can advise you.

The regulations require that within 15 days of the release you provide written notification of the release to the municipality where the release occurred and to each municipality that has been impacted. We recommend that you establish an open dialogue to insure the appropriate municipal officials remain informed of site activities.

2. CORRECTIVE ACTION ACTIVITIES AND REPORTS

After a release has been confirmed, other corrective actions are required in addition to the interim remedial actions listed on the *90 Day Site Characterization Status Report* form. Some of these requirements include fieldwork and report submission under the site characterization (which is required to identify your chosen cleanup standard), remedial action, and the remedial action completion report phases. In addition, the regulations specify time frames for conducting this work that must be followed.

If, in addition to your current release, you have had releases in the past, we request that these historic releases also be addressed in your current reports. If the past releases have been successfully remediated they should still be discussed in the narrative section of your site characterization report.

To discharge any treated groundwater you must have a General Permit (GP-5, Discharges from Petroleum Product Contaminated Groundwater Remediation Systems). Questions concerning General Permit approvals should be directed to our Water Management Program at 484-250-5970.

3. DOCUMENTS

Many of the documents mentioned in this letter can be found on the Department's website (www.depweb.state.pa.us) or by contacting our Regional Office at 484-250-5960.

Please feel free to contact Mr. Walter Payne by calling 484-250-5960 with any questions related to this letter. All reports referenced in this letter are to be submitted to:

Kathy Nagle, Storage Tank Section
PA DEP Southeast Region
2 E. Main Street
Norristown, PA 19401

This Notice of Violation is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Kathy J. Nagle
Chief, Storage Tank Section
Environmental Cleanup

Enclosure

cc: Philadelphia County Health Department
Mr. John Higgins, Philadelphia L & I
Mr. Kevin Gallagher
Mr. Walter Payne
Re 30

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
May 8, 2006

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

NOTICE OF VIOLATION

RECEIVED
MAY 10 2006
By RR

Mr. Ron Rosendorn
Sunoco, Inc. R & M
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-19781
Point Breeze Processing Facility
City of Philadelphia
Philadelphia County

Dear Mr. Rosendorn:

On April 7, 2006, a reportable release of heavy napatha was confirmed at your above-named facility. This release constitutes a violation of Section 1310 of the Pennsylvania Storage Tank and Spill Prevention Act. Our purpose in sending you this notice is to advise you of your regulatory responsibility and to provide guidance and details to help you address this release quickly and effectively under the Department's corrective action regulations (Title 25, Chapter 245, subchapter D).

In order to ensure the release is addressed in a prompt and appropriate manner, you should provide a progress report to this office no later than July 5, 2006. A copy is enclosed for your use. Your site characterization report is due October 3, 2006. No extension of the site characterization report due date will be provided without prior written approval from the Department. All requests for deadline extensions shall include a reasonable alternate due date and be submitted to the Department in writing.

Please note that we intend to initiate a compliance action if you fail to comply with the regulations. We encourage you to proceed without delay to hire a qualified environmental consulting firm that has a Registered Professional Geologist on staff that can assist you in accomplishing the requirements outlined below.

1. INTERIM REMEDIAL ACTIONS

Effective interim actions may resolve a problem or reduce the severity of a problem making site cleanup easier and less expensive. Some typical interim actions are listed on the attached *90 Day Site Characterization Status Report* form.

If your release does affect or diminish a private or public water supply, you must provide a temporary water supply for affected users within 48 hours. Within 90 days, a permanent water supply must be in place. Treatment to remove or prevent contamination of a public water supply may require a permit from the Department. We recommend that you contact the regional Water Supply Management Program (WSM) at 484-250-5980 prior to any planned treatment installations on a public source. If you are unsure if a well is classified as a public water source, WSM can advise you.

The regulations require that within 15 days of the release you provide written notification of the release to the municipality where the release occurred and to each municipality that has been impacted. We recommend that you establish an open dialogue to insure the appropriate municipal officials remain informed of site activities.

2. CORRECTIVE ACTION ACTIVITIES AND REPORTS

After a release has been confirmed, other corrective actions are required in addition to the interim remedial actions listed on the *90 Day Site Characterization Status Report* form. Some of these requirements include fieldwork and report submission under the site characterization (which is required to identify your chosen cleanup standard), remedial action, and the remedial action completion report phases. In addition, the regulations specify time frames for conducting this work that must be followed.

If, in addition to your current release, you have had releases in the past, we request that these historic releases also be addressed in your current reports. If the past releases have been successfully remediated they should still be discussed in the narrative section of your site characterization report.

To discharge any treated groundwater you must have a General Permit (GP-5, Discharges from Petroleum Product Contaminated Groundwater Remediation Systems). Questions concerning General Permit approvals should be directed to our Water Management Program at 484-250-5970.

3. DOCUMENTS

Many of the documents mentioned in this letter can be found on the Department's website (www.depweb.state.pa.us) or by contacting our Regional Office at 484-250-5960.

Please feel free to contact Mr. Walter Payne by calling 484-250-5960 with any questions related to this letter. All reports referenced in this letter are to be submitted to:

Kathy Nagle, Storage Tank Section
PA DEP Southeast Region
2 E. Main Street
Norristown, PA 19401

This Notice of Violation is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Kathy J. Nagle
Chief, Storage Tank Section
Environmental Cleanup

Enclosure

cc: Philadelphia County Health Department
Mr. John Higgins, Philadelphia L & I
Mr. Kevin Gallagher
Mr. Walter Payne
Re 30

SECOR International Incorporated
Philadelphia Office
102 Pickering Way, Suite 200
Exton, Pennsylvania 19341
Phone: (484) 875-3075
FAX: (484) 875-9286

LETTER OF TRANSMITTAL

Attn: **Ron Rosendorn** **Date: 09-22-06**

Company: **Sunoco, Inc.**

Address: **3144 Passyunk Avenue**
Philadelphia, Pennsylvania

Project: **Sunoco Philadelphia Refinery**

Job No:

RE: **AST Closure Reports – ASTs 119, 150, 182, 1002 and 1100**

ENCLOSED:
( ) **Proposal**
( ) **Contract**
(X) **Reports**
( ) **Letter Report**
( ) **Other:**

FOR:
( ) **As Requested**
( ) **Review**
(X) **Your Information**
( ) **Approval**
( ) **Signature**
( ) **Return**
( ) **Other:**

Comments:

Attached are three copies of each AST closure report. Please call with any questions or comments.

Signature: Sergio Morescalchi
Title: Project Geologist

Certified Mail Return Receipt Requested: 7002 0460 0003 1935 5933

September 27, 2006

Kathy Nagle, Storage Tank Section
PA DEP - Southeast Region
2 East Main Street
Norristown, PA 19401

RE: Notices of Violation for ASTs GP 1002 & PB 119
Sunoco, Inc. (R & M), 3144 Passyunk Ave, Philadelphia, PA 19145

Dear Ms Nagle:

In response to your Notice of Violation Letters dated May 8, 2006 (copies enclosed), enclosed are closure reports for aboveground storage tanks GP 1002 (recovered oil) and PB 119 (heavy naphtha). These closure reports describe the circumstances surrounding the reported releases and contain confirmatory sampling data acquired during activities undertaken to close these tanks in place. These tanks were closed in place in accordance with the 2003 Consent Order and Agreement between PADEP and Sunoco per the PADEP technical document "Closure Requirements for Aboveground Storage Tank Systems" effective October 12, 2002.

As described in the closure report for GP 1002, one of the confirmatory soil samples slightly exceeded the Nonresidential Surface Soil and/or Subsurface Soil Direct Contact MSC (Medium Specific Concentration) for benzene and for naphthalene. In light of the fact that neither the PA-certified tank handler nor the professional geologist observed any obvious contamination, Sunoco proposes to carry out activities previously described in the Current Conditions Report and Comprehensive Remedial Plan submitted to your office on June 30, 2004. As described in this plan, Area of Interest 7 (wherein GP 1002 resides) is to undergo an AOI site assessment in 2010.

As described in the closure report for PB 119, six confirmatory soil samples exceeded the Nonresidential Surface Soil and/or Subsurface Soil Direct Contact MSC for benzene and one sample exceeded the standard for naphthalene. Although neither the PA-certified tank handler nor the professional geologist observed any obvious contamination, Sunoco proposes to install a groundwater remediation system downgradient to this tank and others in AOI 1 at the boundary of Sunoco property along 26th street. The remediation system is to be installed and working in 2007.

Should you have any questions or comments in reference to these matters please contact me at 215-339-2074.

September 26, 2006
Ms. Kathy Nagle
PA DEP - Southeast Region
Division of Storage Tanks
2 East Main Street
Norristown, PA 19401

Approvals: Lori Kuserk _____

Ron Rosendorn _____

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
February 26, 2008

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

RECEIVED
FEB 29 2008
By SB

Mr. Scott A. Baker, P.E.
Sunoco, Inc.
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-36558 & 51-19781
Sunoco Girard Point & Point Breeze Facilities
3144 Passyunk Avenue
Philadelphia County

Dear Mr. Baker:

Over the past few years, we have received documents from you that mention how Sunoco considers certain regulated storage tank release incidents to be covered by the 2003 Consent Order & Agreement (CO&A) between the Department and Sunoco, Inc. The purpose of this letter is to clarify for you which release incidents at the two above-mentioned facilities are covered under the 2003 CO&A. Paragraph 8 of the CO&A states that release incidents associated with a closure or change-in-service of an aboveground storage tank (AST) are covered by the CO&A. Thus, incidents not involving a tank closure or change-in-service are not covered.

All incidents occurring at these two facilities in the past few years (since we have been actively tracking regulated storage tank releases) are listed in the two tables below. There are multiple incidents that have occurred at these two facilities prior to our tracking of releases, which are not listed in the tables below and were not adequately addressed. Please be sure to address those releases incidents as well in accordance with either the CO&A or the corrective action process detailed in the storage tank regulations (25 Pa. Code Chapter 245 Subchapter D).

Please note that the CO&A does state that corrective actions required by Chapter 245 Sections 304, 305, 306, and 307 must still be completed for any AST closure and change-in-service.

Release incidents covered by 2003 CO&A

Facility	Sunoco Tank No.	PADEP Tank No.	Confirmed Release Date
Girard Point	1002	139A	4-7-06
Girard Point	1100	140A	5-31-06
Girard Point	277	039A	6-25-07
Girard Point	1208	025A	6-28-07
Point Breeze	119	024A	4-7-06
Point Breeze	182	048A	5-31-06
Point Breeze	181	047A	6-22-07
Point Breeze	848	116A	6-25-07
Point Breeze	252	055A	6-28-07

Release incidents NOT covered by 2003 CO&A

Facility	Sunoco Tank No.	PADEP Tank No.	Confirmed Release Date
Girard Point	250	030A	1-27-07
Girard Point	T-201	175A	12-10-07
Girard Point	1088	089A	12-31-07
Point Breeze	881	120A	9-3-05
Point Breeze	140	031A	9-15-05
Point Breeze	847	115A	9-3-06
Point Breeze	885	124A	10-15-06

The Department realizes that several corrective action reports have been submitted for some of the above-listed incidents which are not covered by the CO&A. We will issue a response for those reports. All incidents covered by the CO&A will be "administratively closed out" on our eFACTS database with a comment stating that the release will be addressed under the CO&A.

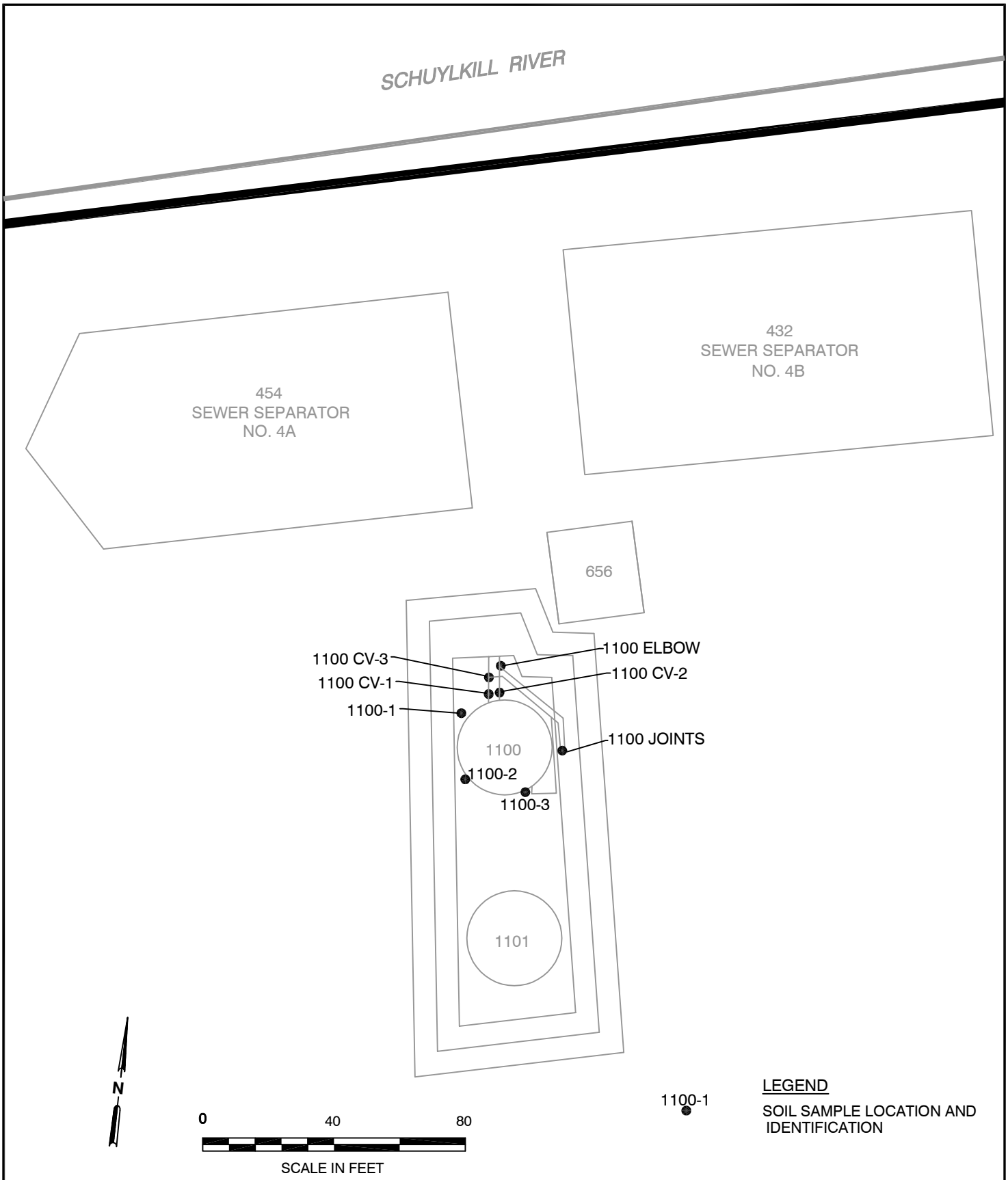
This letter is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Heidi J. Kunsch
Water Quality Specialist
Environmental Cleanup

cc: Philadelphia Health Department
Mr. Higgins, Philadelphia L&I
Mr. Stan Sneath, PADEP
Mr. Steve O'Neil, PADEP
Mr. Ayman Ghobrial, PADEP
Re

GP 1100



SOURCE: HANDEX, PROJECT 110535.002, TITLE: BASE MAP/MAIN REFINERY, FIGURE 2, DRAWING NAME: 110535PRBM-1.DWG, DATE: 01/28/05

SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075/875-9286 (FAX)	FOR: SUNOCO, INC. (R & M) PHILADELPHIA REFINERY GIRARD POINT PROCESSING AREA		**AST 1100** **SOIL SAMPLE LOCATIONS** **MAY 11 & 12, 2006**		FIGURE: **2**
	JOB NUMBER: 62SU.01156.06	DRAWN BY: KEF	CHECKED BY: SM	APPROVED BY:	DATE: 06/05/2006

Philadelphia Refinery

FILE COPY

Sunoco Inc.
3144 Passyunk Avenue
Philadelphia PA 19145-5299
215 339 2000

Certified Mail Return Receipt Requested - # 7002 0460 0003 1935 5421

June 7, 2006

Mr. Stephan Sinding
PADEP – S. E. Regional Office
Environmental Cleanup Program
Storage Tank Section
2 East Main Street
Norristown, PA 19401

RE: Release Reports PA Tank Regulation 245.305(d)
Point Breeze Process Area: Facility ID# 51-19781
Storage Tanks PB 119 (PA Seq # 024A) and PB 182 (PA Seq # 048A)

Girard Point Process Area: Facility ID# 51-36558
Storage Tanks GP 1002 (PA Seq # 139A) and GP 1100 (PA Seq #140A)

Dear Mr. Sinding:

This letter complies with PA Tank Regulation 245.305 (Reporting Releases). On May 2, 2006, PADEP was notified of reportable releases at two aboveground storage tanks (PB 119 and GP 1002). Also on May 31, 2006, PADEP was notified of reportable releases at two other aboveground storage tanks (PB 182 and GP 1100). Attached are completed Notification of Reportable Release Forms for these releases. Additional details are provided below:

All four aboveground storage tanks are being closed in place in accordance with 245.561, PADEP Technical Document "Closure Requirements for Aboveground Storage Tank Systems", and Sunoco-PaDEP Consent Order and Agreement entered on December 17, 2003.

As required for tank closure, Sunoco has conducted site assessments at these four storage tanks. SECOR International was contracted to perform site assessment soil sampling as part of required tank closure activities. On May 2, 2006, laboratory results were received from confirmatory soil samples taken at PB 119 and GP 1002.

At PB 119, four confirmatory soil samples were taken from underneath underground fill lines. Three of the four sample locations had results that were above the PA standard/action level for the following parameters:

Parameter	Result 1(action level)	Result 2(action level)	Result 3(action level)
Benzene	1.8 ppm (0.5 ppm)	1.7 ppm (0.5 ppm)	71 ppm (0.5 ppm)
Naphthalene	-	-	90 ppm (25 ppm)

At GP 1002, five confirmatory soil samples were taken. Two were under pipe samples and three were tank perimeter samples. One of the perimeter samples had results that were above the PA standard/action levels for the following parameters:

Parameter	Result (action level)
Benzene	1.4 ppm (0.5 ppm)
Naphthalene	30 ppm (25 ppm)

On May 31, laboratory results were received from confirmatory soil samples taken at PB 182 and GP 1100. At PB 182, there were ten confirmatory soil samples taken. Two of the sample results (taken from around the tank perimeter) were above the PA standard/action level for the following parameter:

Parameter	Result 1(action level)	Result 2(action level)
Benzene	2.9 ppm (0.5 ppm)	2.0 ppm (0.5 ppm)

At GP 1100, there were eight confirmatory soil samples taken. One of the sample results (taken from around the tank perimeter) was above the PA standard/action level for the following parameter:

Parameter	Result (action level)
Benzene	1.0 ppm (0.5 ppm)

Also for your information, on May 31, 2006, additional lab results from other confirmatory samples taken at PB 119 were received. These results were from six other sample locations. Three of the six sample results (taken from around the tank perimeter) were above the PA standard/action level for the following parameter:

Parameter	Result 1(action level)	Result 2(action level)	Result 3(action level)
Benzene	8.1 ppm (0.5 ppm)	76 ppm (0.5 ppm)	2.7 ppm (0.5 ppm)

Please be aware that there was no free hydrocarbon product observed during soil sampling activities at any of the sample locations. Therefore, the amount of released material cannot be determined or estimated. SECOR is in the process of preparing site assessment reports for each of these tanks. Based on these reports, existing site characterization data and work that will be conducted under the 2003 CO&A between PaDEP and Sunoco, the need for additional corrective action will be determined.

Should you have any questions or comments in reference to this matter please contact me at 215-339-2074.

Sincerely,

Scott A. Baker

Scott A. Baker
Supervisor, Environmental Department.

SAB/rmr

Attachment: Notification of Reportable Release Form

Cc: Philadelphia Local Emergency Planning Committee
240 Spring Garden Street
Philadelphia, PA 19123

PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P. O. Box 8471
Harrisburg, PA 17105-8471

Approval List:

R. Rosendorn RR

File: AST Releases 2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2001
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certification regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with Subsection 245.132(a)(4). Subsection 245.132(a)(4) requires submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below,
depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471 FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5960 FAX: 484-250-5961	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRWM0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 36558

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Girard Point Process Area
Facility I.D. Number: 51-36558
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☐	Unknown	[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)	☒		[S]	[C]
Unknown	☐		[S]	+ [C]
			[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 2 / 2006 (m / d / y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 2 / 2006 (m / d / y) Office S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m / d / y) Municipality Philadelphia
Date: ___ / ___ / ___ (m / d / y) Municipality ___

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 139A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / _____
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # GP 1002

PA DEP Registration # 139A

See Attached Letter

FACILITY I.D. NUMBER 51 - 36558

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, 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.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

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

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2001
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certification regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with Subsection 245.132(a)(4). Subsection 245.132(a)(4) requires submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below,
depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471 FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5960 FAX: 484-250-5961	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRWM0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 36558

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Girard Point Process Area
Facility I.D. Number: 51-36558
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☐	Unknown	[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)	☒		[S]	[C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 30 / 2006 (m / d / y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 30 / 2006 (m / d / y) Office: S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m / d / y) Municipality: Philadelphia
Date: / / (m / d / y) Municipality:

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 140A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # GP 1100

PA DEP Registration # 140A

See Attached Letter

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, 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.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

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

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2001
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certification regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with Subsection 245.132(a)(4). Subsection 245.132(a)(4) requires submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below,
depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471 FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5[illegible]0 FAX: 484-250-5901	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Phil[illegible]a	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

2530-FM-LRWM0082 Rev. 11/2001

FACILITY I.D. NUMBER 51 - 19781

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Point Breeze Process Area
Facility I.D. Number: 51-19781
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☒	Unknown	[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)	☐		[S]	[C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 2 / 2006 (m d y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 2 / 2006 (m d y) Office S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m d y) Municipality Philadelphia
Date: ___ / ___ / ___ (m d y) Municipality ___

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 024A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Gas Tank Overfill	☐	Unknown	☐		
Product Delivery Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # PB 119

PA DEP Registration # 024A

See Attached Letter

FACILITY I.D. NUMBER 51 - 19871

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, 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.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

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

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

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

2530-FM-LRWM0082 Rev. 11/2001
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by Subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with Subsection 245.305(d) and (e).

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 FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certification regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with Subsection 245.132(a)(4). Subsection 245.132(a)(4) requires submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER/OPERATOR INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I. Also, record the name and phone number of the operator of the facility.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. **INTERIM REMEDIALACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. **ATTACHMENT** - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup Program
Storage Tank Section
(To the appropriate address below,
depending on where the FACILITY is located)

IF A REPORTABLE RELEASE, ALSO SEND A COPY OF THE FORM TO:
PA Department of Environmental Protection
Land Recycling and Cleanup Program
Attn: Storage Tank Corrective Action
P.O. Box 8471
Harrisburg, PA 17105-8471 FAX: 717-787-0884

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 1[illegible] PHONE: 4[illegible]0 FAX: 484-[illegible]	2 Public Square Wilkes-Barre, PA 18711-0790 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 877-333-1904 FAX 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3696 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Sunoco, Inc. - Point Breeze Process Area
Facility I.D. Number: 51-19781
Street Address (P.O. Box not acceptable): 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145-5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Ron Rosendorn
Phone Number: (215) 339 - 2217

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Sunoco, Inc.
Address: 3144 Passyunk Ave
City: Philadelphia
State: PA
Zip Code: 19145 - 5299
Phone Number: (215) 339 - 2217
Operator Name: Ron Rosendorn
Phone Number: (215) 339 - 2217

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 ☒): I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☐	Unknown	[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)	☒		[S]	+ [C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 5 / 30 / 2006 (m d y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: 5 / 30 / 2006 (m d y) Office: S. E. Region - Norristown

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 6 / 8 / 2006 (m d y) Municipality: Philadelphia
Date: ___ / ___ / ___ (m d y) Municipality: ___

Source/Cause (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 048A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☒	Water Supplies	☐
Accident/Act of God	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Faulty Installation	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Corrosion	☐	Supply Well Sample Results	☐		
Mechanical Failure	☐	Monitoring Well Sample Results	☐		
Spill During Delivery	☐	Property Transfer	☐		
Overfill at Delivery	☐	Other (Specify)	☐		
Vehicle Garage Overfill	☐	Unknown	☐		
Product Dispenser Hose Rupture	☐				
Other (Specify)	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(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)	☐	☐	☐	☒

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: ___ / ___ / ___
m d y

Indication of Suspected 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 ☐
- Other (Specify) _____ ☐

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) _____ ☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP assigned and owner/operator assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Sunoco Tank # PB 182

PA DEP Registration # 048A

See Attached Letter

VIII. CERTIFICATION (Both O/O and I/I)

I, Michael G. McKee, 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.

Michael G. McKee
Signature of Owner or Operator

6 / 8 / 2006
Date

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

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

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
June 9, 2006

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

NOTICE OF VIOLATION

RECEIVED
JUN 12 2006
By RR

Mr. Ron Rosendorn
Sunoco Inc., R & M
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-36558 (140A)
Girard Point Processing Area
City of Philadelphia
Philadelphia County

Dear Mr. Rosendorn:

On May 31, 2006, a reportable release of recovered oil/fuel oil was confirmed at your above-named facility. This release constitutes a violation of Section 1310 of the Pennsylvania Storage Tank and Spill Prevention Act. Our purpose in sending you this notice is to advise you of your regulatory responsibility and to provide guidance and details to help you address this release quickly and effectively under the Department's corrective action regulations (Title 25, Chapter 245, subchapter D).

In order to ensure the release is addressed in a prompt and appropriate manner, you should provide a progress report to this office no later than August 29, 2006. A copy is enclosed for your use. Your site characterization report is due November 27, 2006. No extension of the site characterization report due date will be provided without prior written approval from the Department. All requests for deadline extensions shall include a reasonable alternate due date and be submitted to the Department in writing.

Please note that we intend to initiate a compliance action if you fail to comply with the regulations. We encourage you to proceed without delay to hire a qualified environmental consulting firm that has a Registered Professional Geologist on staff that can assist you in accomplishing the requirements outlined below.

1. INTERIM REMEDIAL ACTIONS

Effective interim actions may resolve a problem or reduce the severity of a problem making site cleanup easier and less expensive. Some typical interim actions are listed on the attached *90 Day Site Characterization Status Report* form.

If your release does affect or diminish a private or public water supply, you must provide a temporary water supply for affected users within 48 hours. Within 90 days, a permanent water supply must be in place. Treatment to remove or prevent contamination of a public water supply may require a permit from the Department. We recommend that you contact the regional Water Supply Management Program (WSM) at 484-250-5980 prior to any planned treatment installations on a public source. If you are unsure if a well is classified as a public water source, WSM can advise you.

The regulations require that within 15 days of the release you provide written notification of the release to the municipality where the release occurred and to each municipality that has been impacted. We recommend that you establish an open dialogue to insure the appropriate municipal officials remain informed of site activities.

2. CORRECTIVE ACTION ACTIVITIES AND REPORTS

After a release has been confirmed, other corrective actions are required in addition to the interim remedial actions listed on the *90 Day Site Characterization Status Report* form. Some of these requirements include fieldwork and report submission under the site characterization (which is required to identify your chosen cleanup standard), remedial action, and the remedial action completion report phases. In addition, the regulations specify time frames for conducting this work that must be followed.

If, in addition to your current release, you have had releases in the past, we request that these historic releases also be addressed in your current reports. If the past releases have been successfully remediated they should still be discussed in the narrative section of your site characterization report.

To discharge any treated groundwater you must have a General Permit (GP-5, Discharges from Petroleum Product Contaminated Groundwater Remediation Systems). Questions concerning General Permit approvals should be directed to our Water Management Program at 484-250-5970.

3. DOCUMENTS

Many of the documents mentioned in this letter can be found on the Department's website (www.depweb.state.pa.us) or by contacting our Regional Office at 484-250-5960.

Please feel free to contact Mr. Walter Payne by calling 484-250-5960 with any questions related to this letter. All reports referenced in this letter are to be submitted to:

Kathy Nagle, Storage Tank Section
PA DEP Southeast Region
2 E. Main Street
Norristown, PA 19401

This Notice of Violation is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Kathy J. Nagle
Chief, Storage Tank Section
Environmental Cleanup

Enclosure

cc: Philadelphia County Health Department
Mr. John Higgins, Philadelphia L & I
Mr. Kevin Gallagher
Mr. Walter Payne
Re 30

****PLEASE DO NOT FAX THIS REPORT****

90 DAY SITE CHARACTERIZATION STATUS REPORT

Facility ID Number: Report Date:

Facility Name:

Facility Address:

Facility Contact Name: Phone #:

Municipality: County:

Release Date:

Date Municipality Notified: _____ (if a written communication, please attach a copy)

ACTIVITIES (Check the appropriate box: 1 = finished; 2 = on-going; 3 = planned; N/A = not applicable):

1	2	3	N/A	
☐	☐	☐	☐	Identify & mitigate fire, explosion & safety hazards posed by vapor & free product
☐	☐	☐	☐	Identify & sample affected or potentially impacted public and private water supplies & water
☐	☐	☐	☐	Supply sample results to water supply owner(s) and DEP
☐	☐	☐	☐	Provide temporary water supply to replace affected or diminished supplies
☐	☐	☐	☐	Identify sensitive receptors including, but not limited to, basements and utility conduits
☐	☐	☐	☐	Determine or confirm source(s) of contamination
☐	☐	☐	☐	Remove regulated substance from tank system
☐	☐	☐	☐	Recover free product
☐	☐	☐	☐	Remove impacted soil as appropriate
☐	☐	☐	☐	Other (specify: _____

Describe any additional activities (accomplished and planned) performed towards completion of your site characterization report, including potential problems and significant findings:

NOTE: If you are actively working on your characterization and an extension of time beyond the 180 day report due date is needed, please contact the DEP project officer assigned to the case to discuss the situation.

Submitted by: Date Submitted:

Company Name: Phone Number:

Address:

SECOR International Incorporated
Philadelphia Office
102 Pickering Way, Suite 200
Exton, Pennsylvania 19341
Phone: (484) 875-3075
FAX: (484) 875-9286

LETTER OF TRANSMITTAL

Attn: **Ron Rosendorn** **Date: 09-22-06**

Company: **Sunoco, Inc.**

Address: **3144 Passyunk Avenue**
Philadelphia, Pennsylvania

Project: **Sunoco Philadelphia Refinery**

Job No:

RE: **AST Closure Reports – ASTs 119, 150, 182, 1002 and 1100**

ENCLOSED:
( ) **Proposal**
( ) **Contract**
(X) **Reports**
( ) **Letter Report**
( ) **Other:**

FOR:
( ) **As Requested**
( ) **Review**
(X) **Your Information**
( ) **Approval**
( ) **Signature**
( ) **Return**
( ) **Other:**

Comments:

Attached are three copies of each AST closure report. Please call with any questions or comments.

Signature: Sergio Morescalchi
Title: Project Geologist

Certified Mail Return Receipt Requested: 7002 0460 0003 1935 6756

October 9, 2006

Kathy Nagle, Storage Tank Section
PA DEP - Southeast Region
2 East Main Street
Norristown, PA 19401

RE: Notices of Violation for ASTs Releases at GP 1100 & PB 182
Sunoco, Inc. (R & M), 3144 Passyunk Ave, Philadelphia, PA 19145

Dear Ms Nagle:

In response to your Notice of Violation Letters dated June 9, 2006 (copies enclosed), enclosed are closure reports for aboveground storage tanks GP 1100 (recovered oil) and PB 182 (heavy naphtha/recovered oil). These closure reports describe the circumstances surrounding the reported releases and contain confirmatory sampling data acquired during activities undertaken to close these tanks in place. These tanks were closed in place in accordance with the 2003 Consent Order and Agreement between PADEP and Sunoco per the PADEP technical document "Closure Requirements for Aboveground Storage Tank Systems" effective October 12, 2002.

As described in the closure report for PB 181, seven of the fourteen confirmatory soil samples exceeded the Used Aquifer Nonresidential Soil-to-Groundwater MSC's for benzene and once for toluene. In light of the fact that neither the PA-certified tank handler nor the professional geologist observed any obvious contamination, Sunoco proposes to carry out activities previously described in the Current Conditions Report and Comprehensive Remedial Plan submitted to your office on June 30, 2004. As described in this plan, Area of Interest 7 (wherein GP 1100 resides) is to undergo an AOI site assessment in 2010.

As described in the closure report for PB 182, two confirmatory soil samples exceeded the Nonresidential Surface Soil and/or Subsurface Soil Direct Contact MSC for benzene. Although neither the PA-certified tank handler nor the professional geologist observed any obvious contamination, Sunoco proposes to install a groundwater remediation system downgradient to this tank and others in AOI 1 at the boundary of Sunoco property along 26th street. The remediation system is to be installed and working in 2007.

Should you have any questions or comments in reference to these matters please contact me at 215-339-2074.

October 9, 2006
Ms. Kathy Nagle
PA DEP - Southeast Region
Division of Storage Tanks
2 East Main Street
Norristown, PA 19401

Approvals: Lori Kuserk _____

Ron Rosendorn _____

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
February 26, 2008

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

RECEIVED
FEB 29 2008
By SB

Mr. Scott A. Baker, P.E.
Sunoco, Inc.
3144 Passyunk Avenue
Philadelphia, PA 19145

Re: Storage Tank Program
Facility ID No. 51-36558 & 51-19781
Sunoco Girard Point & Point Breeze Facilities
3144 Passyunk Avenue
Philadelphia County

Dear Mr. Baker:

Over the past few years, we have received documents from you that mention how Sunoco considers certain regulated storage tank release incidents to be covered by the 2003 Consent Order & Agreement (CO&A) between the Department and Sunoco, Inc. The purpose of this letter is to clarify for you which release incidents at the two above-mentioned facilities are covered under the 2003 CO&A. Paragraph 8 of the CO&A states that release incidents associated with a closure or change-in-service of an aboveground storage tank (AST) are covered by the CO&A. Thus, incidents not involving a tank closure or change-in-service are not covered.

All incidents occurring at these two facilities in the past few years (since we have been actively tracking regulated storage tank releases) are listed in the two tables below. There are multiple incidents that have occurred at these two facilities prior to our tracking of releases, which are not listed in the tables below and were not adequately addressed. Please be sure to address those releases incidents as well in accordance with either the CO&A or the corrective action process detailed in the storage tank regulations (25 Pa. Code Chapter 245 Subchapter D).

Please note that the CO&A does state that corrective actions required by Chapter 245 Sections 304, 305, 306, and 307 must still be completed for any AST closure and change-in-service.

Release incidents covered by 2003 CO&A

Facility	Sunoco Tank No.	PADEP Tank No.	Confirmed Release Date
Girard Point	1002	139A	4-7-06
Girard Point	1100	140A	5-31-06
Girard Point	277	039A	6-25-07
Girard Point	1208	025A	6-28-07
Point Breeze	119	024A	4-7-06
Point Breeze	182	048A	5-31-06
Point Breeze	181	047A	6-22-07
Point Breeze	848	116A	6-25-07
Point Breeze	252	055A	6-28-07

Release incidents NOT covered by 2003 CO&A

Facility	Sunoco Tank No.	PADEP Tank No.	Confirmed Release Date
Girard Point	250	030A	1-27-07
Girard Point	T-201	175A	12-10-07
Girard Point	1088	089A	12-31-07
Point Breeze	881	120A	9-3-05
Point Breeze	140	031A	9-15-05
Point Breeze	847	115A	9-3-06
Point Breeze	885	124A	10-15-06

The Department realizes that several corrective action reports have been submitted for some of the above-listed incidents which are not covered by the CO&A. We will issue a response for those reports. All incidents covered by the CO&A will be "administratively closed out" on our eFACTS database with a comment stating that the release will be addressed under the CO&A.

This letter is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that an enforcement action is appropriate, you will be notified of the action.

Sincerely,

Heidi J. Kunsch
Water Quality Specialist
Environmental Cleanup

cc: Philadelphia Health Department
Mr. Higgins, Philadelphia L&I
Mr. Stan Sneath, PADEP
Mr. Steve O'Neil, PADEP
Mr. Ayman Ghobrial, PADEP
Re

APPENDIX F
Development of Site Specific Standard and Risk Assessment

APPENDIX F
DEVELOPMENT OF SITE-SPECIFIC STANDARDS
AOI 7: PES FACILITY
PHILADELPHIA, PENNSYLVANIA

Based on the current and future intended non-residential site use, an exposure assessment was conducted for any compounds in shallow soils (0-2 feet bgs) or deep soils (2-15 feet bgs) that exceeded the non-residential statewide health soil medium specific standard (MSC). Potential human health exposures for the Facility are for an industrial worker scenario.

Direct contact exposure pathways to shallow soil, groundwater, and LNAPL is being evaluated under the industrial use scenario because Sunoco has well documented standards for personal protective equipment (PPE) and procedures for soil excavation and handling. However, because direct contact to soils could occur outside of excavation activities, soil samples were collected to further evaluate the potential for unacceptable risk of exposure.

Based on the data collected between 2002 and 2013, concentrations of benzene, benzo(a)pyrene, lead, naphthalene, ethylene dibromide, 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB were detected in shallow soils above the non-residential soil MSC and concentrations of benzene, lead, ethylene dibromide and 1,3,5-TMB were detected in deep soils above the non-residential soil MSC. To refine the list of compounds carried forward in the risk assessment, the compounds listed above were further screened against the EPA Region III Risk-Based Concentrations (aka, EPA Regional Screening Levels [RSLs]) in accordance with Section IV of the PADEP's Technical Guidance Manual (TGM) (dated June 8, 2002). Based on this screening, concentrations of 1,3,5-TMB and ethylene dibromide were below the EPA RSLs for industrial soil and were, therefore, eliminated from the risk assessment. Concentrations of benzene, lead naphthalene, benzo(a)pyrene, and 1,2,4-TMB were above the EPA RSLs and were, therefore, further evaluated as outlined in the January 2013 Soil Screening Procedure for Philadelphia Energy Solutions memorandum (Sunoco 2013).

As described in the January 2013 memorandum, the compounds that exceeded both the non-residential statewide health standards and EPA RSLs were compared to the PADEP's Non-Residential Direct Contact MSC. To maintain conservatism, all soil samples (surface and subsurface) were screened against the more stringent 0-2 feet below grade direct contact criteria regardless of sample depth in the event that soils are re-used elsewhere on the Facility. Based on this screening, concentrations of naphthalene, benzene, and 1,2,4-TMB were eliminated from the risk assessment. The compounds identified for further risk assessment are benzo(a)pyrene and lead. Benzo(a)pyrene is a carcinogenic compound and risk will be evaluated through the probability of an individual developing cancer as a result of lifetime exposure. Since most lead-based human health effects data are based on blood-lead concentrations instead of external dose, the traditional approach for risk assessment is not applied to characterize exposure to lead. Consequently, exposure to lead is evaluated based on the predicted concentration of lead in the blood and is evaluated separately.

The total cumulative excess cancer risk is the combined risk of exposure to the exposure point concentrations (EPCs) of any carcinogenic compounds that fail the initial screening: for AOI-7, benzo(a)pyrene is the only compound of concern carried forward for quantitative assessment and will represent total cumulative risk. The EPC is the representative concentration that is expected to be contacted by a receptor and is assumed to be universally present throughout the exposure area. Because soil at the Facility may be moved, the exposure area is understood to extend from the surface to 15 feet bgs. As described in the January 2013 memorandum, the 95UCL was used as the EPC except in cases where the 95UCL is higher than the maximum concentrations (USEPA 1989). If the maximum concentration is lower than the calculated 95UCL then the maximum concentration is used as the EPC. The 95UCL for benzo(a)pyrene in soil samples collected from 0 to 15 feet bgs was derived using USEPA's ProUCL Version 4.1 software. The ProUCL output is provided as Attachment A.

Using the 95UCL, incremental cancer risk attributable to benzo(a)pyrene and representing the total cumulative excess carcinogenic risk was calculated to be 2E-06 (Table F-1). The total cumulative cancer risk, in accordance with the TGM, should not exceed 10^{-4}; therefore, carcinogenic risk is below the PADEP's acceptable level and no remedies are required.

Lead

A site-specific screening level for lead was calculated based on ingestion as presented in 25 Pa. Code § 250.306(e), Appendix A, Table 7. As described in 25 Pa. Code § 250.306(e), the non-residential soil screening value for lead is based on the method presented in the report 'The Society for Environmental Geochemistry and Health (SEGH) Task Force Approach to the Assessment of Lead in Soil' (Wixson, 1991). The model used by the PADEP and developed by SEGH was also used to calculate the site specific criterion for the Facility. Based on the SEGH model and PADEP's default parameters, PADEP's non-residential direct contact MSC default value for lead in shallow soil is 1,000 mg/kg. To develop a site-specific criteria for lead, the values used by PADEP for the target blood lead concentration (T) and geometric mean background blood lead concentration (B) were revised in consideration of site-specific conditions and updated lead data collected by the US Center for Disease Control and Prevention (CDC). Revised values for these parameters have been approved by PADEP in previous Site Characterization Reports for the Sunoco Philadelphia Refinery and are discussed below:

Target blood lead concentration (T) – The default target blood lead concentration used by the PADEP to develop the non-residential MSC is 20 ug/dL; however, the Center for Disease Control (CDC) recommends that worker blood lead levels be maintained below 25 ug/dL (NIOSH, 2008) to prevent adverse health effects for most workers from exposure to lead throughout a working lifetime. Based on conversations between representatives of Sunoco and EPA, the target lead blood level identified by the CDC is the level used in the site-specific calculations in Table F-2.

Geometric mean background blood lead concentration (B) – B is the background blood lead concentration in the target population from sources other than soil and dust. The PADEP's default value for B is 4 ug/dL and, as summarized in PADEPs reference document (Wixson, 1991), is based on data gathered in the United Kingdom from young children. The CDC has monitored blood lead levels in US children and adults since 1976 and, based on the most recent results published by the National Center for Environmental Health of the CDC (NCEH, Page I-3 2005), the mean blood lead concentration for an adult 20 years of age or older is 1.56 ug/dL. Based on the more recent study by the US CDC, the value used for B in the site specific calculation has been revised to 1.56 ug/dL.

As presented in Table F-2, based on the revised parameters, the derived site-specific standard for lead in soil is 1,708 mg/kg for a Facility worker. Two shallow soil samples (BH-10-26_1.5-2.0 and AOI 7 BH-12-47_1.5) have concentrations of lead above the site specific criteria and will be delineated and remediated as described in the Clean-up Plan.

Conclusions

Concentrations of benzo(a)pyrene and lead detected in shallow and subsurface soil samples collected in AOI-7 were above their respective non-residential soil MSCs, EPA RSLs and non-residential direct contact MSCs, and therefore, required additional review. Following completion of a risk evaluation, the following conclusions are supported:

- No unacceptable cancer risks from exposure to soil are posted to the non-residential worker at AOI-7.
- Only two shallow soil sample locations had concentrations above the site-specific screening level for lead. Concentrations in the remaining soil samples were detected below the calculated site-specific screening level. Soil sample locations with concentrations above the site-specific screening levels will be delineated and remediated as described in the Clean-up Plan.

References

NCEH. (2005). Third National Report on Human Exposure to Environmental Chemicals. Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Laboratory Sciences. Atlanta, Georgia. NCEH. Pub. No. 05-0570.

NIOSH (2008). Adult Blood Lead Epidemiology and Surveillance (ABLES). http://www.cdc.gov/niosh/topics/ABLES

Sunoco (2013). Soil Screening Procedure for Philadelphia Energy Solutions, Philadelphia Refinery.

USEPA (United States Environmental Protection Agency). 1989. Risk Assessment Guidance for Superfund. Volume I, Human Health Evaluation Manual (Part A). Interim Final. EPA/540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

USEPA. 2010. ProUCL Version 4.1 User Guide. EPA/600/R-07/041. Office of Research and Development.

Wixson, B.G., (1991). The Society of Environmental Geochemistry and Health (SEGH) Task Force Approach to the Assessment of Lead in Soil. Trace Substances in Environmental Health. 11-20.

Table F-1:
Risk / Exposure Evaluation

					Lead		Benzo(a)pyrene	
					7439-92-1		50-32-8	
Location ID	Sample ID	Sample Top (ft)	Sample Bottom (ft)	Sample Date	Reported Result (mg/kg)	Target Blood Lead Level	Reported Result (mg/kg)	Calculated Risk
AOI7 BH-12-100	BH-12-100_3.0'	2.5	3	11/27/2012	135	4.5	0.796	4E-10
AOI7 BH-12-43	BH-12-43_2.5'	2	2.5	11/28/2012	119	4.3	2	1E-09
AOI7 BH-12-45	BH-12-45_3.5'	3	3.5	11/29/2012	758	12.6	2.89	2E-09
AOI7 BH-12-46	BH-12-46_0.5'	0	0.5	11/29/2012	121	4.3	0.129	1E-07
AOI7 BH-12-47	BH-12-47_1.5'	1	1.5	11/29/2012	2060	**29.6**	0.731	7E-07
AOI7 BH-12-48	BH-12-48_3'	2.5	3	11/30/2012	1530	22.7	1.02	5E-10
AOI7 BH-12-49	BH-12-49_2.5'	2	2.5	11/30/2012	107	4.1	0.278	1E-10
AOI7 BH-12-53	BH-12-53_2.5'	2	2.5	11/30/2012	510	9.4	0.921	5E-10
AOI7 BH-12-54	BH-12-54_3'	2.5	3	11/30/2012	190	5.2	1.04	5E-10
AOI7 BH-12-55	BH-12-55_1.5'	1	1.5	11/30/2012	112	4.2	0.12	1E-07
AOI7 BH-12-55	BH-12-55_2.5'	2	2.5	11/30/2012	313	6.8	0.599	3E-10
AOI7 BH-12-56	BH-12-56_2'	1.5	2	11/28/2012	743	12.4	1	9E-07
AOI7 BH-12-58	BH-12-58_3'	2.5	3	11/28/2012	350	7.3	0.3	2E-10
AOI7 BH-12-58	BH-12-58_4'	3.5	4	11/28/2012	467	8.8	5.3	3E-09
AOI7 BH-12-62	BH-12-62_3'	2.5	3	11/29/2012	26.1	3.1	0.329	2E-10
AOI7 BH-12-64	BH-12-64_2.5'	2	2.5	11/29/2012	594	10.5	2.26	1E-09
AOI7 BH-12-64	BH-12-64_3'	2.5	3	11/29/2012	360	7.4	0.916	5E-10
AOI7 BH-12-67	BH-12-67_2'	1.5	2	11/29/2012	583	10.3	1.06	1E-06
AOI7 BH-12-67	BH-12-67_3'	2.5	3	11/29/2012	672	11.5	1.57	8E-10
AOI7 BH-12-68	BH-12-68_1.5'	1	1.5	11/29/2012	240	5.8	0.203	2E-07
AOI7 BH-12-68	BH-12-68_3'	2.5	3	11/29/2012	210	5.5	0.392	2E-10
AOI7 BH-12-69	BH-12-69_2'	1.5	2	11/29/2012	14.7	2.9	4.06	4E-06
AOI7 BH-12-69	BH-12-69_2.5'	2	2.5	11/29/2012	43.5	3.3	2.38	1E-09
AOI7 BH-12-70	BH-12-70_2'	1.5	2	11/28/2012	13.8	2.9	0.039	4E-08
AOI7 BH-12-70	BH-12-70_4'	3.5	4	11/28/2012	7.46	2.8	ND	--
AOI7 BH-12-72	BH-12-72_3.5'	3	3.5	11/28/2012	185	5.1	0.93	5E-10
AOI7 BH-12-73	BH-12-73_5'	4.5	5	11/28/2012	27.3	3.1	0.22	1E-10
AOI7 BH-12-74	BH-12-74_1'	0.5	1	11/28/2012	254	6.0	0.36	3E-07
AOI7 BH-12-74	BH-12-74_4'	3.5	4	11/28/2012	538	9.7	1.6	8E-10
AOI7 BH-12-75	BH-12-75_1'	0.5	1	11/28/2012	335	7.1	0.32	3E-07
AOI7 BH-12-75	BH-12-75_2'	1.5	2	11/28/2012	551	9.9	2.8	3E-06
AOI7 BH-12-76	BH-12-76_1'	0.5	1	11/28/2012	143	4.6	0.099	9E-08
AOI7 BH-12-76	BH-12-76_3'	2.5	3	11/28/2012	380	7.7	0.66	3E-10
AOI7 BH-12-77	BH-12-77_3'	2.5	3	11/28/2012	4.4	2.8	0.028	1E-11
AOI7 BH-12-78	BH-12-78_1.0'	0.5	1	11/27/2012	237	5.8	0.15	1E-07
AOI7 BH-12-78	BH-12-78_2.0'	1.5	2	11/27/2012	128	4.4	0.207	2E-07
AOI7 BH-12-79	BH-12-79_1.0'	0.5	1	11/27/2012	498	9.2	0.244	2E-07
AOI7 BH-12-80	BH-12-80_3.0'	2.5	3	11/27/2012	104	4.1	0.161	8E-11
AOI7 BH-12-82	BH-12-82_1.0'	0.5	1	11/27/2012	116	4.2	ND	--
AOI7 BH-12-83	BH-12-83_1.0'	0.5	1	11/27/2012	16.2	2.9	ND	--
AOI7 BH-12-83	BH-12-83_3.0'	2.5	3	11/27/2012	264	6.2	0.87	5E-10
AOI7 BH-12-84	BH-12-84_3.0'	2.5	3	11/27/2012	58	3.5	0.043	2E-11
AOI7 BH-12-85	BH-12-85_1.5'	1	1.5	11/27/2012	145	4.6	0.183	2E-07
AOI7 BH-12-85	BH-12-85_3.0'	2.5	3	11/27/2012	344	7.2	0.524	3E-10
AOI7 BH-12-87	BH-12-87_1.0'	0.5	1	11/27/2012	870	14.1	0.775	7E-07
AOI7 BH-12-87	BH-12-87_3.0'	2.5	3	11/27/2012	1110	17.2	0.695	4E-10
AOI7 BH-12-88	BH-12-88_2.5'	2	2.5	11/27/2012	198	5.3	0.0748	4E-11
AOI7 BH-12-91	BH-12-91_0.5'	0	0.5	11/27/2012	291	6.5	0.403	4E-07
AOI7 BH-12-92	BH-12-92_0.5'	0	0.5	11/27/2012	30.2	3.1	ND	--
AOI7 BH-12-94	BH-12-94_1.0'	0.5	1	11/27/2012	1340	20.2	0.782	7E-07
AOI7 BH-12-98	BH-12-98_1'	0.5	1	11/28/2012	955	15.2	0.32	3E-07
AOI7 BH-12-99	BH-12-99_0.5'	0	0.5	11/28/2012	341	7.2	ND	--
AOI7-BH-13-45	AOI7-BH-13-45_1.5-2_031313	1.5	2	3/13/2013	498	9.2	0.395	4E-07
AOI7-BH-13-45	AOI7-BH-13-45_2-2.5_031313	2	2.5	3/13/2013	753	12.5	0.6	3E-10
AOI7-BH-13-46	AOI7-BH-13-46_1.5-2_031313	1.5	2	3/13/2013	237	5.8	0.347	3E-07
AOI7-BH-13-47	AOI7-BH-13-47_1.5-2_031313	1.5	2	3/13/2013	866	14.0	1.25	1E-06
AOI7-BH-13-47	AOI7-BH-13-47_2.5-3_031313	2.5	3	3/13/2013	567	10.1	2.5	1E-09
AOI7-BH-13-48	AOI7-BH-13-48_1.5-2_031313	1.5	2	3/13/2013	275	6.3	0.934	8E-07
AOI7-BH-13-48	AOI7-BH-13-48_2.5-3_031313	2.5	3	3/13/2013	348	7.3	1.5	8E-10
AOI7-BH-13-50	AOI7-BH-13-50_0-0.5_031913	0	0.5	3/19/2013	281	6.4	0.197	2E-07
AST 283-CV-1	CV-1_06/28/2005	0	0.5	6/28/2005	121	4.3	ND	--
AST 283-SB-1	SB-1_06/28/2005	1	1.5	6/28/2005	317	6.8	ND	--
AST 283-SB-3	SB-3_06/28/2005	1	1.5	6/28/2005	97.9	4.0	0.26	2E-07
AST 283-SB-4	SB-4_06/28/2005	1	1.5	6/28/2005	113	4.2	0.9	8E-07
AST 283-SB-5	SB-5_06/28/2005	1	1.5	6/28/2005	81.1	3.8	ND	--
BH-10-05	BH-10-05_1.5-2.0	1.5	2	6/9/2010	411	8.1	1	9E-07
BH-10-06	BH-10-06_1.2-1.7	1.2	1.7	6/9/2010	266	6.2	1.9	2E-06
BH-10-07	BH-10-07_1.0-1.5	1	1.5	6/10/2010	305	6.7	ND	--
BH-10-08	BH-10-08_1.5-2.0	1.5	2	6/10/2010	444	8.5	2.2	2E-06
BH-10-09	BH-10-09	0	2	4/6/2009	441	8.5		--
BH-10-09	BH-10-09_1.2-1.7	1.2	1.7	6/10/2010	1230	18.8	2.7	2E-06
BH-10-10	BH-10-10_1.5-2.0	1.5	2	6/10/2010	725	12.2	1.4	1E-06
BH-10-11	BH-10-11_1.5-2.0	1.5	2	6/10/2010	184	5.1	2.7	2E-06
BH-10-12	BH-10-12_1.5-2.0	1.5	2	6/10/2010	414	8.1	2.1	2E-06
BH-10-13	BH-10-13_1.5-2.0	1.5	2	6/9/2010	320	6.9	4.2	4E-06
BH-10-14	BH-10-14_1.5-2.0	1.5	2	6/9/2010	531	9.6	1.2	1E-06
BH-10-15	BH-10-15_1.4-1.9	1.4	1.9	6/9/2010	280	6.4	1.4	1E-06
BH-10-16	BH-10-16_1.5-2.0	1.5	2	6/9/2010	616	10.7	2.8	3E-06
BH-10-17	BH-10-17_1.5-2.0	1.5	2	6/9/2010	47.8	3.3	0.51	5E-07
BH-10-18	BH-10-18_1.5-2.0	1.5	2	6/9/2010	478	8.9	1.5	1E-06
BH-10-19	BH-10-19_0.5-1.0	0.5	1	6/9/2010	365	7.5	2.3	2E-06
BH-10-20	BH-10-20_1.3-1.8	1.3	1.7	6/8/2010	179	5.0	1.7	2E-06
BH-10-21	BH-10-21_1.0-1.5	1	1.5	6/8/2010	869	14.0	3.8	3E-06
BH-10-22	BH-10-22_1.5-2.0	1.5	2	6/8/2010	304	6.7	1.1	1E-06
BH-10-23	BH-10-23_1.0-1.5	1	1.5	6/7/2010	623	10.8	0.24	2E-07
BH-10-24	BH-10-24_1.0-1.5	1	1.5	6/7/2010	411	8.1	0.31	3E-07
BH-10-25	BH-10-25_1.2-1.7	1.2	1.7	6/7/2010	79.4	3.7	0.38	3E-07
BH-10-26	BH-10-26_1.5-2.0	1.5	2	6/7/2010	2040	**29.3**	4.3	4E-06
BH-10-27	BH-10-27_1.5-2.0	1.5	2	6/8/2010	393	7.8	3.8	3E-06
BH-10-28	BH-10-28_1.5-2.0	1.5	2	6/7/2010	155	4.7	0.6	5E-07
BH-10-29	BH-10-29_0.7-1.2	0.7	1.2	6/7/2010	395	7.9	0.23	2E-07
BH-10-30	BH-10-30_1.5-2.0	1.5	2	6/7/2010	250	6.0	1.5	1E-06
BH-10-31	BH-10-31_1.5-2.0	1.5	2	6/8/2010	610	10.7	0.61	6E-07

Table F-1:
Risk / Exposure Evaluation

					Lead		Benzo(a)pyrene	
					7439-92-1		50-32-8	
Location ID	Sample ID	Sample Top (ft)	Sample Bottom (ft)	Sample Date	Reported Result (mg/kg)	Target Blood Lead Level	Reported Result (mg/kg)	Calculated Risk
BH-10-32	BH-10-32_0.5-1.0	0.5	1	6/8/2010	298	6.6	0.21	2E-07
BH-10-33	BH-10-33_1.5-2.0	1.5	2	6/8/2010	43.1	3.3	ND	--
BH-10-34	BH-10-34_1.0-1.5	1	1.5	6/8/2010	84.2	3.8	ND	--
BH-10-35	BH-10-35_1.3-1.7	1.3	1.7	6/8/2010	92.5	3.9	0.82	7E-07
C-129	C-129_1-2	1	2	6/2/2010	252	6.0	2.3	2E-06
C-130	C-130_1-2	1	2	6/2/2010	814	13.3	8.4	8E-06
C-131	C-131_1-2	1	2	6/3/2010	396	7.9	1.5	1E-06
C-136	C-136_1-2	1	2	5/28/2010	218	5.6	0.38	3E-07
C-137	C-137_1-2	1	2	5/27/2010	251	6.0	1.9	2E-06
C-138	C-138_1-2	1	2	5/27/2010	103	4.1	0.2	2E-07
C-139	C-139_1-2	1	2	6/2/2010	98.7	4.0	ND	--
C-140	C-140_1-2	1	2	5/26/2010	98.6	4.0	1.2	1E-06
C-142	C-142_1-2	1	2	6/3/2010	1370	20.6	3.4	3E-06
C-143	C-143_1-2	1	2	6/3/2010	164	4.9	0.52	5E-07
GP 1002-1002 PIPE-1	1002 PIPE-1	--	--	4/7/2006	--	--	1.2	6E-10
GP 1002-1002 PIPE-2	1002 PIPE-2	--	--	4/7/2006	--	--	1.2	6E-10
GP 1002-1002-1	1002-1	--	--	4/7/2006	--	--	5.8	3E-09
GP 1002-1002-2	1002-2	--	--	4/7/2006	--	--	2.8	1E-09
GP 1002-1002-3	1002-3	--	--	4/7/2006	--	--	4.9	3E-09
GP 1100-1100-1	1100-1	--	--	5/11/2006	--	--	9.7	5E-09
GP 1100-1100-2	1100-2	--	--	5/11/2006	--	--	2.6	1E-09
GP 1100-1100-3	1100-3	--	--	5/11/2006	--	--	3.8	2E-09
GP 1100-1100CV-1	1100CV-1	--	--	6/19/2006	--	--	6.8	4E-09
GP 1100-1100-CV-2	1100-CV-2	--	--	5/11/2006	--	--	13	7E-09
GP 1100-1100-CV-3	1100-CV-3	--	--	5/11/2006	--	--	0.79	4E-10
GP 1100-1100-ELBOW	1100-ELBOW	--	--	5/11/2006	--	--	1.2	6E-10
GP 1100-1100-JOINTS	1100-JOINTS	--	--	5/11/2006	--	--	2.3	1E-09
GP-1002-1002	1002	--	--	5/11/2006	--	--	2.3	1E-09
GP-270-S-1	S-1_09/21/2009	4	4.5	9/21/2009	73.1	3.7	1.7	9E-10
GP-270-S-10	S-10_10/06/2009	2	2.5	10/6/2009	447	8.5	3.6	2E-09
GP-270-S-11	S-11_10/06/2009	1.5	2	10/6/2009	99.9	4.0	1.6	1E-06
GP-270-S-12	S-12_10/06/2009	2	2.5	10/6/2009	235	5.8	1	5E-10
GP-270-S-13	S-13_10/06/2009	1	1.5	10/6/2009	330	7.0	2.4	2E-06
GP-270-S-14	S-14_10/06/2009	1	1.5	10/6/2009	366	7.5	2.5	2E-06
GP-270-S-15	S-15_10/06/2009	1.5	2	10/6/2009	386	7.7	6.5	6E-06
GP-270-S-2	S-2_09/21/2009	4	4.5	9/21/2009	47.1	3.3	0.36	2E-10
GP-270-S-3	S-3_09/21/2009	3	3.5	9/21/2009	264	6.2	5.1	3E-09
GP-270-S-4	S-4_09/22/2009	4	4.5	9/22/2009	20.7	3.0	0.59	3E-10
GP-270-S-5	S-5_09/22/2009	4	4.5	9/22/2009	28.9	3.1	0.26	1E-10
GP-270-S-6	S-6_09/29/2009	1.5	2	9/29/2009	450	8.6	7.1	6E-06
GP-270-S-7	S-7_09/29/2009	2.5	3	9/29/2009	387	7.8	3.5	2E-09
GP-270-S-8	S-8_09/29/2009	2	2.5	9/29/2009	443	8.5	2.2	1E-09
GP-270-S-9	S-9_10/06/2009	2.5	3	10/6/2009	328	7.0	2.9	2E-09
GP-271-GP-1	GP-1(0-0.5)	0	0.5	6/4/2002		--	ND	--
GP-271-GP-2	GP-2 (0.5-1.0)	0.5	1	6/4/2002		--	ND	--
GP-271-GP-2	GP-2 (8.5-9.0)	8.5	9	6/4/2002		--	ND	--
GP-271-GP-3	GP-3 (1.5-2.0)	1.5	2	6/4/2002		--	ND	--
GP-271-GP-4	GP-4 (1.5-2.0)	1.5	2	6/4/2002		--	ND	--
GP-271-GP-4	GP-4 (3.5-4.0)	3.5	4	6/4/2002		--	0.41	2E-10
GP-271-GP-5	GP-5 (1.5-2.0)	1.5	2	6/4/2002		--	ND	--
GP-271-GP-6	GP-6 (0-0.5)	0	0.5	6/4/2002		--	0.33	3E-07
GP-275-LINE1	GP-275-LINE1	0	0.5	5/25/2007		--	ND	--
GP-275-LINE2	GP-275-LINE2	0	0.5	5/25/2007		--	ND	--
GP-275-LINE3	GP-275-LINE3	0	0.5	5/25/2007		--	ND	--
GP-275-LINE4	GP-275-LINE4	0	0.5	5/25/2007		--	ND	--
GP-275-PER1	GP-275-PER1	3	3.5	5/24/2007		--	2	1E-09
GP-275-PER2	GP-275-PER2	3	3.5	5/24/2007		--	0.4	2E-10
GP-275-PER3	GP-275-PER3	3	3.5	5/24/2007		--	0.99	5E-10
GP-275-PER4	GP-275-PER4	3	3.5	5/24/2007		--	1.7	9E-10
GP-275-PER5	GP-275-PER5	3	3.5	5/24/2007		--	1.4	7E-10
GP-275-PER6	GP-275-PER6	3	3.5	5/24/2007		--	0.59	3E-10
GP-275-SUB-1	GP-275-SUB-1	5	5.5	9/4/2007		--	ND	--
GP-275-SUB-2	GP-275-SUB-2	5	5.5	9/4/2007		--	ND	--
GP-275-SUB-3	GP-275-SUB-3	5	5.5	9/4/2007		--	ND	--
GP-277-LINE1	GP-277-LINE1	0	0.5	5/25/2007		--	0.76	7E-07
GP-277-LINE2	GP-277-LINE2	0	0.5	5/25/2007		--	ND	--
GP-277-LINE3	GP-277-LINE3	0	0.5	5/25/2007		--	ND	--
GP-277-PER1	GP-277-PER1	3	3.5	5/24/2007		--	0.31	2E-10
GP-277-PER2	GP-277-PER2	3	3.5	5/24/2007		--	ND	--
GP-277-PER3	GP-277-PER3	3	3.5	5/24/2007		--	0.35	2E-10
GP-277-PER4	GP-277-PER4	3	3.5	5/24/2007		--	ND	--
GP-277-PER5	GP-277-PER5	3	3.5	5/24/2007		--	ND	--
GP-277-PER6	GP-277-PER6	3	3.5	5/24/2007		--	3.9	2E-09
GP-277-SUB1	GP-277-SUB1	5	5.5	5/24/2007		--	ND	--
GP-277-SUB2	GP-277-SUB2	5	5.6	5/24/2007		--	ND	--
GP-277-SUB3	GP-277-SUB3	5	5.5	5/24/2007		--	ND	--
S-135	S-135_0-2	0	2	6/10/2010	4.31	2.8	ND	--
				95% UCL	NA	NA	2.078	2E-06

Total Cumulative Risk for Carcinogens Using EPC: **2E-06** *< 1 in 10,000*
Total Hazard Index for Non-Carcinogens Using EPC: **NA** *< 1*

Notes:
ND - Not Detected Above Lab Reporting Limit
(1) All soil samples collected and analyzed were unsaturated.
(2) Total Cumulative Risk is the combined risk of exposure to the Exposure Point Concentration of carcinogenic compound, and should be less than or equal to 1 in 10,000.
(3) 95% UCL = 95% Kaplan-Meier Chebyshev Upper Confidence Limit of the mean sample concentration for B(a)P.
(4) Calculated based on site specific parameters provided in Table F-4. The CDC (NIOSH, 2008) recommends that blood lead levels be maintained below 25 ug/dL. EPC - Exposure Point Concentration

Table F-2
Derivation of Site-Specific Soil Value
for Lead[1]

Parameter	Abbreviation	Assumption	Units	Source[2]
Blood lead target concentration	T	25	ug/dL	CDC - ABLES (NIOSH, 2008)
Geometric standard deviation of the blood lead distribution	G	1.4	unitless	25 Pa. Code § 250, Appendix A Table 7
Background blood lead concentration in the population from sources other than soil or dust	B	1.56	ug/dL	NCEH Pub. No. 05-0570 (NCEH, 2005)
Number of standard deviations corresponding to the degree of protection required for the population at risk	n	1.645	unitless	25 Pa. Code § 250, Appendix A Table 7
Response of the blood lead versus soil lead relationship	δ	7.5	ug/dL blood / ug/g soil	25 Pa. Code § 250, Appendix A Table 7

Site-Specific, Non-Residential (Onsite Worker) Screening Value **1,708** **ug/g (mg/kg)**

Notes:

1. The site specific screening value for lead was calculated for ingestion based on the SEGH model as specified by 25 Pa. Code 250.306(e)

$$\text{MSC (mg/kg)} = \frac{[(T/G^n) - B] \times 1000}{\delta}$$

2. Sources for blood lead target level (T) based on conversation between James Oppenheim of Sunoco and Hon Lee of EPA in November 2010.

NIOSH (2008). Adult Blood Lead Epidemiology and Surveillance (ABLES). http://www.cdc.gov/niosh/topics/ABLES

NCEH (2005). Third National Report on Human Exposure to Environmental Chemicals. Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Laboratory Sciences. Atlanta, Georgia. NCEH. Pub. No. 05-0570.

	A	B	C	D	E	F	G	H	I	J	K	L
1				General UCL Statistics for Data Sets with Non-Detects								
2			User Selected Options									
3			From File	WorkSheet.wst								
4			Full Precision	OFF								
5			Confidence Coefficient	95%								
6			Number of Bootstrap Operations	2000								
7												
8												
9	Benzo(a)pyrene											
10												
11						General Statistics						
12						Number of Valid Data	169			Number of Detected Data		135
13						Number of Distinct Detected Data	102			Number of Non-Detect Data		34
14										Percent Non-Detects		20.12%
15												
16				Raw Statistics						Log-transformed Statistics		
17						Minimum Detected	0.028			Minimum Detected		-3.576
18						Maximum Detected	13			Maximum Detected		2.565
19						Mean of Detected	1.717			Mean of Detected		-0.0628
20						SD of Detected	2.007			SD of Detected		1.193
21						Minimum Non-Detect	0.019			Minimum Non-Detect		-3.963
22						Maximum Non-Detect	16			Maximum Non-Detect		2.773
23												
24	Note: Data have multiple DLs - Use of KM Method is recommended									Number treated as Non-Detect		169
25	For all methods (except KM, DL/2, and ROS Methods),									Number treated as Detected		0
26	Observations < Largest ND are treated as NDs									Single DL Non-Detect Percentage		100.00%
27												
28						UCL Statistics						
29				Normal Distribution Test with Detected Values Only						Lognormal Distribution Test with Detected Values Only		
30						Lilliefors Test Statistic	0.2			Lilliefors Test Statistic		0.0533
31						5% Lilliefors Critical Value	0.0763			5% Lilliefors Critical Value		0.0763
32				Data not Normal at 5% Significance Level						Data appear Lognormal at 5% Significance Level		
33												
34				Assuming Normal Distribution						Assuming Lognormal Distribution		
35						DL/2 Substitution Method				DL/2 Substitution Method		
36						Mean	1.533			Mean		-0.361
37						SD	2.009			SD		1.393
38						95% DL/2 (t) UCL	1.788			95% H-Stat (DL/2) UCL		2.416
39												
40						Maximum Likelihood Estimate(MLE) Method	N/A			Log ROS Method		
41				MLE method failed to converge properly						Mean in Log Scale		-0.402
42										SD in Log Scale		1.31
43										Mean in Original Scale		1.418
44										SD in Original Scale		1.891
45										95% t UCL		1.659
46										95% Percentile Bootstrap UCL		1.67
47										95% BCA Bootstrap UCL		1.687
48										95% H-UCL		2.021
49												

	A	B	C	D	E	F	G	H	I	J	K	L
50	**Gamma Distribution Test with Detected Values Only**						**Data Distribution Test with Detected Values Only**					
51					k star (bias corrected)	0.945	**Data appear Gamma Distributed at 5% Significance Level**					
52					Theta Star	1.818						
53					nu star	255						
54												
55					A-D Test Statistic	0.776	**Nonparametric Statistics**					
56					5% A-D Critical Value	0.785					Kaplan-Meier (KM) Method	
57					K-S Test Statistic	0.785					Mean	1.433
58					5% K-S Critical Value	0.0829					SD	1.899
59	**Data appear Gamma Distributed at 5% Significance Level**										SE of Mean	0.148
60											95% KM (t) UCL	1.678
61	**Assuming Gamma Distribution**										95% KM (z) UCL	1.677
62				Gamma ROS Statistics using Extrapolated Data							95% KM (jackknife) UCL	1.677
63					Minimum	0.000001					95% KM (bootstrap t) UCL	1.717
64					Maximum	13					95% KM (BCA) UCL	1.704
65					Mean	1.403					95% KM (Percentile Bootstrap) UCL	1.698
66					Median	0.782					95% KM (Chebyshev) UCL	2.078
67					SD	1.907					97.5% KM (Chebyshev) UCL	2.357
68					k star	0.261					99% KM (Chebyshev) UCL	2.905
69					Theta star	5.366						
70					Nu star	88.38	**Potential UCLs to Use**					
71					AppChi2	67.7					95% KM (Chebyshev) UCL	2.078
72				95% Gamma Approximate UCL (Use when n >= 40)		1.832						
73				95% Adjusted Gamma UCL (Use when n < 40)		1.836						
74	**Note: DL/2 is not a recommended method.**											
75												
76	**Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.**											
77	**These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).**											
78	**For additional insight, the user may want to consult a statistician.**											
79												

APPENDIX G
Data Usability Assessment

Appendix G: Data Usability Assessment

The purpose and objective of the data usability assessment is to determine if the specific goals of the project were achieved by evaluating the sensitivity, validity, reliability, representativeness, comparability, and completeness of the collected data. The process documents that analytical results used for decision-making are accurate, precise, and representative of environmental conditions. The Data Usability Assessment includes an examination of the reported laboratory analytical data, the supporting data, and field notes, when necessary. A review of the deficiencies identified in the data, appended data qualifiers, identification of biases and unreliable data, and assessments of field and laboratory performance are completed and reconciled with project data quality objectives. Reported results may be considered be sufficiently valid when the sampling and method performance criteria were achieved or, alternatively, the results may be considered estimates and qualified by the laboratory or a data validator. In the case of organic analyses, these laboratory flags include "J" qualifiers to indicate a reported result is estimated below the laboratory reporting limit; and "B" qualifiers to indicate a reported result may be affected by blank contamination. For inorganic analyses, laboratory-applied "J" and "B" qualifiers are frequently defined inversely.

For the purposes of this investigation, groundwater and soil results summarized in eighteen laboratory reports provided by The Washington Group, Lancaster Laboratories, Pace Analytical, and Accutest Laboratories are evaluated in the sections below for usability. These samples were collected from June 2002 through April 2013 by Aquaterra Technologies, Inc., Langan, Stantec and Secor, on behalf of Sunoco, Inc. Samples were analyzed for volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), ethylene dibromide (EDB), metals and wet chemistry parameters. Copies of the laboratory reports are provided in this appendix for reference. Any analytical data, data qualifiers, and QA/QC results provided in these reports were evaluated to determine the reliability and validity of the data and its appropriateness for use in the decision-making process. The criteria used in the data usability summary are presented in the following sections.

A complete list of SDGs included in the AOI 7 evaluation is as follows:

Laboratory	***Year***	***SDGs***
The Washington Group	2002	68717
Lancaster Laboratories	2002	823333
	2005	950598
	2009	1163143, 1163948, 1165331

Laboratory	*Year*	*SDGs*
Lancaster Laboratories	2012	1352569, 1285228
Pace Analytical	2007	07-4145, 07-4097, 07-4100, 07-6856
Accutest Laboratories	2012	JB22267, JB22561, JB22549
	2013	JB31265, JB31794, JB33644

Data Quality Indicators

Data quality indicators (DQIs) are qualitative and quantitative measures of data quality "attributes," which are descriptors used to express various properties of analytical data. Thus, DQIs are the various measures of the individual data characteristics that collectively comprise the general, all-encompassing term "data quality." Quality attributes used to assess the data usability include:

- Method selectivity/specificity
- Method sensitivity
- Accuracy (bias, validity)
- Precision (reliability)
- Representativeness
- Comparability
- Completeness

These indicators, as they relate to the data collected during the site characterization, are described in more detail below.

Method Selectivity/Specificity

Method selectivity/specificity is defined as the compound type or class that can be detected by the instrument or detector. Instruments that are used to detect a compound class (i.e., hydrocarbons) are said to be selective. Instruments that are used to detect a specific element group (e.g., halogens) are said to be specific. Groundwater, and soil samples, as well as trip blanks, were analyzed for the following parameters using the listed specific methods:

- GC/MS Volatile via SW-846 Method 8260B, 8260C, SPLP via 1312/8260B,
- GC/MS Semi-volatiles in water via SW-846 Methods 8270C, 8270D, 8270D with SIM and 8310,
- Ethylene Dibromide via SW-846 Method 8011,
- Metals via SW-846 Methods 6010B, 6010C, and 6020, and
- Wet Chemistry via SW-846 Method 9045, EPA Method 160.3, and Standard Method SM20 2540G.

Method Sensitivity

Method sensitivity is the degree to which an analyte can be detected above a statistically derived method detection limit and the associated laboratory reporting limit. Method sensitivity permits decision-making when data are reported at or near state and federal benchmarks.

The following non-detect soil sample results should not be used for the purpose of delineation because detection limits initially exceeded screening criteria (i.e., the PADEP Soil MSCs), or samples required dilution factors that raised laboratory reporting limits above the corresponding screening criteria. Specifically, EDB associated with the SW-846 8260B volatile analysis for samples BH-12-47_1.5', BH-12-85_3.0', BH-12-64_2.5', BH-12-54_3', BH-12-53_2.5', AOI7_BH-13-45_1.5-2_031313, AOI7_BH-13-47_1.5-2, AOI7_BH-13-48_1.5-2_031313AOI7_BH-13-45_2-2.5_031313, AOI7_BH-13-47_2.5-3_031313, AOI7_BH-13-48_2.5-3_031313; benzo(a)pyrene associated with sample GP-5 (1.5-2.0); benzene associated with samples GP-5 (1.5-2.0), 1002 PIPE-1, and 1002-1; VOCs ethylbenzene, 1,2-dichloroethane, toluene, total xylenes, MTBE, benzene, isopropylbenzene, and naphthalene by 8260B for sample SB-2_06/28/2005, and EDB by 8011 for sample SB-2_06/28/2005.

Accuracy (Bias)

Accuracy is the degree of the bias in a measurement system, and can be defined as the agreement between a measurement and an accepted reference or true value. Bias can be positive or negative, which means that the "true" concentration is likely higher or lower (respectively) than the reported laboratory result. While bias direction can be estimated for data quality impacts, the degree to which bias affects the laboratory result cannot be quantified.

Indicators of accuracy include, but are not limited to, sample hold times and preservation, surrogate spike recoveries, laboratory control sample (LCS) and LCS duplicate recoveries, and matrix spike sample (MS) and spike duplicate (SD) recoveries. The acceptable ranges of accuracy for each of the above listed indicators are method and matrix specific, and are defined within the published analytical test methods specified in the section above. Laboratory recovery limits may differ from those identified in the methods. For the purposes of this assessment, accuracy [or bias] was evaluated by reviewing the following indicators, and deficiencies are identified in the Summary of Findings:

- *Sample hold times* to determine if samples were extracted and analyzed within method-specific timeframes. *Sample preservation* to determine that samples were properly stored on ice at 4°C ± 2°, and method-specific adjustment in pH occurred. If

hold times are exceeded or preservation requirements were not met, reported concentrations may be biased low.

- *Laboratory method, equipment, and trip blank samples* to determine if sample results are potentially affected by contamination resulting from laboratory procedures, sampling equipment decontamination, or sample transport.

- *Percent recovery of surrogate spikes* (system monitoring compounds injected into each sample prior to sample extraction or preparation to determine that these compounds were recovered within the laboratory acceptance limits. Because surrogate compounds are added to each sample at known concentrations, a measure of accuracy can be established based upon a comparison of the measured concentration to the actual amount spiked into a sample. If surrogates are recovered below this range then concentrations reported for the target analytes may be biased low: similarly, if surrogates are recovered above this range then concentrations reported for the target analytes may be biased high.

- *Percent recovery of each compound analyzed in the laboratory QA/QC samples [Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (LCSD)] and field QC samples [Matrix Spike (MS) and Matrix Spike Duplicate (SD)].*

  LCS and LCSD samples are samples of reagent water or suitable reference matrix spiked with known concentrations of the target analytes. LCS and LCSD samples are run at a rate of one per sample batch (approximately 20 samples) and are indicators of method performance. If compounds within the LCS or LCSD are recovered above or below the acceptable ranges than concentrations of those compounds may be biased in each of the normal environmental samples within the corresponding batch.

  MS and SD samples are normal environmental samples collected at the project site and spiked with known concentrations of the target analytes. MS and SD samples are typically run at the same frequency as LCS and LCSD samples, and are indicators of potential bias based on the sampling matrix. If analytes in the MS or SD are recovered above or below the acceptable ranges, then reported results may be biased in each of the normal environmental samples within the corresponding batch.

  Internal and external instrument calibration and verification are a central part of the analytical process, and are reviewed to determine that the procedures stipulated within a particular analytical method are followed. For the purpose of this Data Usability Assessment, calibration information was not provided and not specifically reviewed unless a nonconformance was noted in the laboratory data package.

<u>Precision</u>

Precision is defined as the ability to reproduce analytical results, and is the measure of variability between individual sample measurements under prescribed conditions. Precision is assessed by the analysis of duplicate samples and expressed in terms of relative percent

difference (RPD). For this project, analytical variability was measured as the relative percent difference (RPD) between 1) analytical laboratory duplicates (LCS and LCSD), and 2) the matrix spike (MS) and matrix spike duplicate (SD). Field duplicate samples are not required under the sampling guidelines and were not collected.

Each laboratory sample delivery group listed in the section above was evaluated for precision. Generally, the LCS/LCSD and MS/SD in each of these laboratory SDGs for each parameter group [VOCs, SVOCs, metals, EDB and wet chemistry] are below the maximum allowable RPD and meet the criteria for precision. Exceptions are listed by method in the Summary of Findings.

Representativeness

Representativeness is the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter most concerned with the proper design of the sampling program. The representativeness criteria may be satisfied by making certain the sampling locations are selected properly and that a sufficient number of samples are collected to fulfill program objectives.

Groundwater and soil samples were collected from locations biased to potential source areas and/or sensitive receptors (surface water bodies, occupied buildings, and residential properties). The analytes analyzed in groundwater and soil samples include those currently identified in the Pennsylvania Corrective Action Process (CAP) Regulation Amendments effective December 1, 2001; provided in Chapter VI, Section E of PADEP's Closure Requirements for Underground Storage Tank Systems (with exception for the waste oil parameters since waste oil is only stored in small tanks within the facility maintenance garages).

The data collected during this investigation is considered representative of groundwater and soil in AOI-7 based on the distribution of the monitoring wells and soil boring sampling locations within the sampling program, the frequency of sample collection, and the suite of parameters analyzed.

Comparability

Comparability is the degree to which data from one study can be compared with data from other similar studies, reference values (such as background), reference materials, and screening values. This goal was achieved by using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. The sample

collection methods used were based on the PADEP's guidelines summarized in the Groundwater Monitoring Guidance Manual dated December 1, 2001 and the Groundwater Sampling and Analysis Plan, dated January 17, 2008. The analytical methods used are EPA solid waste methods or Standard Methods.

Based on this data quality analysis, the data are considered comparable to other groundwater and soil data collected as part of other sampling programs.

Completeness

Completeness is defined as the percentage of usable data in the total data population generated. Completeness was calculated for each analyte where data were qualified as rejected. Completeness is determined as the difference between the total number of data points and the number of rejected data points divided by the total number of results. For soil and groundwater results associated with AOC-7, 100% percent of the data is considered complete.

Summary of Findings (by Method)

VOCs by SW-846 Method 8260B and 8260C:

Samples submitted to the laboratory on June 4, 2002 were received at a cooler temperature of 15°C. The laboratory noted that ice was not present in the cooler. The reported results for benzene may be biased low.

Samples S-1(4.0-4.5), S-2(4.0-4.5), S-4(4.0-4.5), and S-5(4.0-4.5) displayed surrogate recoveries less than the lower control limit for all four system monitoring compounds. The samples were affected by sample dilution of greater than 10X; bias is not assessed on this basis because surrogates are added prior to dilution.

Samples S-6(1.5-2.0) and S-8(2.0-2.5) displayed surrogate recoveries less than the lower control limit for all four system monitoring compounds. In addition, sample S-7(2.5-3.0) displayed surrogate recoveries less than the lower control limits for three of four system monitoring compounds. The samples were affected by sample dilution of greater than 10X; bias is not assessed on this basis because surrogates are added prior to dilution.

Samples S-9(2.5-3.0), S-10(2.0-2.5), S-13(1.0-1.5), S-14(1.0-1.5), and S-15(1.5-2.0) displayed surrogate recoveries less than the lower control limit due to laboratory dilution factors greater than 10X; bias is not assessed on this basis.

Samples submitted to the laboratory on September 7, 2007 were received at a cooler temperature of 15°C. The laboratory noted that ice present in the cooler, but partially melted. The reported results for VOCs may be biased low.
Sample BH-12-46_0.5' displayed a surrogate recovery less than the lower control limit for dibromofluoromethane at 61%. The sample was reanalyzed and the low recovery was confirmed at 62%. The remaining three system monitoring compounds recovered within control limits; on the basis of professional judgment, the reported results are not considered biased.

Sample BH12-54_3' displayed a surrogate recovery greater than the upper control limit for toluene-d8 at 159%. The sample was reanalyzed and the recovery was within control limits. In addition, the three additional system monitoring compounds recovered within control limits; the reported results are not considered biased.

MS/SD sample JB22507-18 displayed multiple recoveries and RPDs outside of control limits for ethylbenzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and total xylenes. The spiked sample did not originate from AOI-7; bias and precision are not assessed on this basis.

MS/SD sample P874273 displayed recoveries and RPDs outside of control limits for ethylbenzene, isopropylbenzene, and 1,2,4-trimethylbenzene. The spiked sample did not originate from AOI-7; bias and precision are not assessed on this basis.

SVOCs by SW-846 Method 8310:

Sample SB-2 (grab water sample) did not recover (i.e., 0%) for surrogate spike triphenylene due to matrix interference. The reported results for SB-2 may be biased low.

The LCS/LCSD recoveries of indeno(1,2,3-cd) pyrene were less than the lower control limit (i.e., 67%) at 60% and 62%, respectively. Sample results for SB-2 are potentially biased low for this compound.

SVOCs by SW-846 Method 8270C, 8270D and 8270 with SIM:

The recovery of surrogate nitrobenzene-d5 associated with the analysis of sample S-6(1.5-2.0) was greater than the upper control limit (i.e., 12%) at 214%. More than one base-neutral extractable surrogate must be outside of control limits before impacts to data quality are assessed.

The MS recovery of phenanthrene associated with spiked sample S-9(2.5-3.0) was less than the lower control limit (i.e., 33%) at 11%. Bias is not assessed on the basis of MS recoveries alone.

MS/SD sample JB22543-1 associated with SDG JB22561 displayed recoveries greater than the upper control limit for benzo(b)fluoranthene at 152% and 149%, respectively. The spiked sample did not originate from AOI-7; bias is not assessed on this basis.

Sample B-12-62_3' displayed recoveries less than the lower control limit for nitrobenzene-d5, 2-fluorobiphenyl, and terphenyl-d14 at 49%, 58%, and 85%, respectively. The laboratory inadvertently double-spiked the system monitoring compounds and recalculated the percent recoveries based on the amount added; bias is not assessed on this basis.

Method blank sample OP64494-MB1 analyzed in conjunction with sample batch EZ4030 displayed positive detections for system artifacts in the semi-volatile TIC scan ranging from approximately 400 µg/kg to 1,100 µg/kg. TIC reporting was not requested for the investigative sample results; there is no impact on data usability.

Method blank sample OP64494-MB1 analyzed in conjunction with sample batch E3E2113 displayed positive detections for unknowns and system artifacts in the semi-volatile TIC scan ranging from approximately 120 µg/kg to 780 µg/kg. TIC reporting was not requested for the investigative sample results; there is no impact on data usability.

Method blank sample OP64900-MB1 analyzed in conjunction with sample batch E2M2182 displayed positive detections for an unknown and a system artifact in the semi-volatile TIC scan at approximately 190 µg/kg to 510 µg/kg, respectively. TIC reporting was not requested for the investigative sample results; there is no impact on data usability.

MS/SD sample JB31347-1 displayed RPDs greater than the control limits for anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, and chrysene at 40%, 44%, 47%, 42%, 51%, and 41%, respectively. The spiked sample did not originate from the Sunoco site; precision is not assessed on this basis.

Method blank sample OP64470-MB1 analyzed in conjunction with sample batch E2P948 displayed positive detections for unknowns and system artifacts in the semi-volatile TIC scan

ranging from approximately 130 μg/kg to 53,000 μg/kg, respectively. In addition, benzophenone was detected at an approximate concentration of 130 μg/kc. TIC reporting was not requested for the investigative sample results; there is no impact on data usability.

Method blank sample OP64470-MB1 analyzed in conjunction with sample batch EZ4029 displayed positive detections for unknowns and system artifacts in the semi-volatile TIC scan ranging from approximately 130 μg/kg to 61,000 μg/kg, respectively. In addition, benzophenone and n-hexadecanoic acid was detected at approximate concentrations of 120 μg/kg and 130 μg/kg, respectively. TIC reporting was not requested for the investigative sample results; there is no impact on data usability.

MS/SD sample JB33644-1 displayed recoveries less than the control limits all spiked analytes. The spiked sample volume did not originate from AOI-7; bias is not assessed on this basis.

MS/SD sample JB35436-2 displayed recoveries greater than the upper control limit for anthracene, benzo(a)anthracene, fluorene, phenanthrene, and pyrene. The spiked volume did not originate from AOI-7 and bias is not assessed on matrix collected from other sites.

EDB by SW-846 Method 8011:

The aqueous samples submitted in conjunction with SDG 950598 were extracted outside of the 14-day holdtime by one day. Samples were otherwise properly preserved and received and stored in good condition; based on professional judgment, negative bias in the results is not probable.

Lead by SW-846 Method 6010B and 6010C:

Laboratory sample batch 092675708002 associated with SDG 1163143 displayed MS/SD recoveries less than the lower control limit at 74% and 64%, respectively, in spiked sample S-1(4.0-4.5). These recoveries may indicate a negative bias in the reported results.

SD sample JB31767-3 displayed a recovery greater than the upper control limit for lead at 146.5%. In addition, the MS/SD RPD was greater than the control limit (i.e., 20%) at 26.9%. The spiked sample did not originate from the Philadelphia Refinery; bias and precision are not assessed on this basis.

The ICP serial dilution (JB31794) displayed a %D greater than the control limit (i.e., 10%) at 16.3%. The original sample result was less than 50X the IDL; bias and precision are not assessed on this basis.

Continuing calibration blank CCB8 analyzed on 3/26/2013 at 01:00 displayed a positive detection greater than the IDL for lead at 1.9 g/L. The associated sample results were multiple orders of magnitude greater than the blank concentration; no positive bias is indicated.

Calibration check standards CRID2 analyzed on 3/26/2013 at 17:55 and CRID3 analyzed on 3/26/2013 at 01:06 displayed percent recoveries greater than the control limit at 132% and 136%, respectively. No project samples were bracketed by the check standards.

ICP serial dilution MP71329 displayed a %D greater than the control limit (i.e., 10%) at 100%. The original sample result was less than 50X the IDL; bias and precision are not assessed on this basis.

Lead by SW-846 Method 6020:

MS/SD sample BH-12-76_1' displayed recoveries outside of control limits. In addition, the MS/SD RPD was greater than the upper control limit at 46%. The original sample concentration was greater than 4X the spiked amount; bias is not assessed on this basis.

Laboratory duplicate sample BH-12-76_1' displayed a RPD greater than the control limit (i.e., 20%) at 51%. There may be imprecision in the laboratory measurement system associated with samples analyzed in sample batch 123395708003A. The affected samples include: BH-12-76_1', BH-12-76_3', BH-12-74_4', BH-12-74_1', BH-12-75_2', BH-12-73_5', BH-12-72_3.5', BH-12-56_2', BH-12-58_3', BH-12-58_4', BH-12-77_3', BH-12-43_2.5', BH-12-98_1', BH-12-99_0.5', BH-12-70_2', BH-12-70_4', and BH-12-75_1'. The usability of the sample results is not impacted.

Percent Moisture by SM20 2540G:

The laboratory duplicate RPD associated with sample P784979 was greater than the control limit (i.e., 15%) at 32%. Percent moisture is used to calculate dry weight concentrations for the associated analyses; however, the duplicated sample did not originate from the Sunoco site and may represent a matrix with wider variability in moisture content.

Summary and Conclusions

For the purposes of this investigation, sample results were summarized in eighteen sample delivery groups provided by Lancaster Laboratories, Pace Analytical, Accutest Laboratories and The Washington Group. Results were evaluated in the sections above for usability. Copies of the laboratory reports are provided in this appendix for reference.

The laboratory performed quality assurance and quality control (QA/QC) analyses, including analysis of LCS/LCSDs, MS/SDs, surrogate spikes, and method blanks. Laboratory QA/QC summaries are provided in each data package, where available. The analytical data, data qualifiers, and QA/QC results provided in these reports were evaluated to determine whether AOC-7 groundwater and soil data met data quality objectives and could be used in the decision-making process.

Multiple trip blank samples were collected during the soil and groundwater sampling events, and were non-detect for target analytes. All samples were properly preserved and were extracted/prepared, and analyzed within sample hold times, with the exceptions noted above. Target compounds were not detected above the reporting limit in the laboratory method blanks, and recoveries in LCS/LCSDs were within acceptable recovery control limits, except for indeno(1,2,3-cd)pyrene recoveries in SDG 950598. Multiple surrogates and MS/SDs recovered outside of the acceptable range as described in detail above.

On the basis of this evaluation, the analytical laboratories appear to have followed the specified analytical methods according to the provisions of the methods, with the exception of the errors discussed above. If a given fraction or SDG is not mentioned above, that indicates that all specified criteria were met. All data are usable for characterizing the site and identifying compounds of concern. As described above, non-detect sample results with reporting limits in exceedance of the associated screening level are not usable for delineating potential impacts.