



ARM Group LLC

Engineers and Scientists

July 14, 2020

Ms. Barbara Brown
Project Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: Test Pitting Completion Report
Area A: Parcel A10
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown,

ARM Group LLC (ARM), on behalf of EnviroAnalytics Group, LLC (EAG), has prepared this Test Pitting Completion Report for response activities completed inside Parcel A10 (the Site) on the Tradepoint Atlantic (TPA) property located in Sparrows Point, Maryland. The response actions were required due to the presence of non-aqueous phase liquids (NAPLs) in the delineation piezometer network associated with A10-006-PZ.

Test pitting, groundwater sampling, and piezometer abandonment activities were proposed in the Test Pitting Work Plan for Area A: Parcel A10 dated January 17, 2020, which was approved by the Maryland Department of the Environment (MDE) via email on January 21, 2020. This Completion Report documents the completed groundwater sampling and abandonment activities proposed in that Work Plan, as well as the completion of two test pits to further characterize the extent of the identified NAPL. As described herein, an underground storage tank (UST) was discovered in one of the test pits conducted within the NAPL delineation area, and subsequently removed with oversight provided by an MDE Oil Control Program (OCP) inspector.

Project Background

On July 7, 2016, while screening the soil cores associated with boring A10-006-SB, strong odors and an amber colored NAPL were noted in the soil boring from 7 to 8 feet and from 9 to 9.5 feet below ground surface (bgs). Based on the observation of NAPL, and in accordance with the Phase II Investigation Work Plan, a temporary NAPL screening piezometer (A10-006-PZ) was installed with a screen interval from 4 to 14 feet bgs. NAPL was subsequently detected in A10-006-PZ and 11 additional piezometers were installed in the surrounding area to delineate the extent of potentially mobile NAPL.

Four delineation piezometers were initially installed surrounding A10-006-PZ at approximately 25 feet to the north (A10-006A-PZ), east (A10-006B-PZ), south (A10-006C-PZ), and west (A10-006D-PZ), and a fifth piezometer (A10-006E-PZ) was installed approximately 25 feet south of A10-006-PZ directly adjacent to A10-006C-PZ due to the identification of a perched groundwater zone overlying approximately 8.5 feet of clay and subsequently the shallow hydrogeologic zone. Following the identification of NAPL at A10-006C-PZ and A10-006E-PZ, an additional three pairs of shallow/perched delineation piezometers (A10-006F-PZ through A10-006K-PZ) were subsequently installed approximately 25 feet to the south, east, and west. The complete methods and findings of the delineation investigation are provided in the Parcel A10 NAPL Delineation Completion Report (dated January 6, 2020).

Samples of NAPL were later collected from A10-006C-PZ, A10-006E-PZ, and A10-006K-PZ for further characterization. The samples were submitted to Pace Analytical Services, Inc. (PACE) to be analyzed for VOCs, SVOCs, and PCBs, as well as Whole Oil (ASTM D3328) and Full Scan (ASTM D5739) analytical testing to establish the “fingerprint” of the NAPL and to determine the chemical constituents that were present. The sample results were submitted to the agencies in the NAPL Characterization Results Transmittal Letter dated January 23, 2020. A summary table of analytical detections for the three NAPL samples was provided with the referenced letter and is also attached as **Table 1**. The analytical laboratory reports are provided as electronic attachments.

Two of the samples were analyzed as solid matrix samples, while the third sample (pale gray product from A10-006K-PZ) was analyzed as a liquid matrix sample. There were no detections of PCBs among the three samples. Two VOCs and one SVOC exceeded their respective Project Action Limits (PALs). 1,1,2,2-Tetrachloroethane exceeded its solid PAL at A10-006C-PZ while 1,2-dibromoethane (EDB) exceeded its solid PAL at A10-006E-PZ. Naphthalene concentrations at A10-006C-PZ and A10-006E-PZ exceeded the solid PAL. No parameters exceeded the applicable liquid PALs at A10-006K-PZ.

Groundwater Sampling, Piezometer Survey, and Elevation Contour Map

Piezometers installed during the Phase II Investigation (including the delineation piezometers) were screened in one of two sand layers designated as the shallow and perched zones that are separated by a confining or semi-confining clay unit. The United States Environmental Protection Agency (USEPA) provided an email on January 13, 2020, with a request to sample, gauge, and survey piezometers that have a well screen that intersects the sand of the shallow groundwater aquifer. The USEPA identified A10-006A-PZ, A10-006B-PZ, A10-006F-PZ, A10-006H-PZ, A10-006I-PZ, and A10-006J-PZ for this purpose. These piezometers and the others in the delineation network (as well as select piezometers at surrounding locations) were gauged on January 20 and January 21, 2020. The top of casing (TOC) elevations were recorded by ARM personnel using a laser level on January 22, 2020. Depth to water (DTW) measurements are



presented in **Table 2**, along with the computed TOC and groundwater elevations. **Figure 1** and **Figure 2** show groundwater elevation contour maps for the perched and shallow groundwater zones, respectively, in the area surrounding A10-006-PZ. Locations A10-006C-PZ and A10-006E-PZ (those with significant historical detections of NAPL) were not included in the groundwater elevation contour maps.

The selected piezometers were sampled on January 21, 2020 using standard low-flow sampling techniques. The groundwater sampling and purge logs are provided as **Attachment 1**. The samples were submitted to PACE and analyzed for VOCs and SVOCs. The samples were not analyzed for PCBs because no PCBs were detected in the samples of NAPL collected from A10-006C-PZ, A10-006E-PZ, or A10-006K-PZ. **Table 3** provides a summary of parameters detected in groundwater above the laboratory's method detection limits (MDLs). **Figure 3** presents a summary of the groundwater sample results that exceeded the PALs. The analytical laboratory report is provided as an electronic attachment.

In total, four PAL exceedances were observed in the groundwater samples. Tetrachloroethene and pentachlorophenol exceeded their respective PALs in A10-006B-PZ while tetrachloroethene and trichloroethene exceeded their respective PALs in A10-006F-PZ. No parameters exceeded the PALs in both NAPL (discussed above) and groundwater. Overall, the NAPL does not appear to be a significant source of groundwater contamination within the study area.

Piezometer Abandonment Methods

All piezometers in the A10-006-PZ delineation network were properly abandoned on January 22 and January 23, 2020. No NAPL was detected in any piezometer which was not previously determined to be impacted. The piezometers which have not contained physical evidence of NAPL were abandoned using standard methods (i.e., PVC pulled and filled with grout from the bottom up using a tremie pipe).

Four piezometers (A10-006-PZ, A10-006C-PZ, A10-006E-PZ, and A10-006K-PZ) were known to be impacted with NAPL. These select piezometers were abandoned using a modified method to further mitigate the potential for subsequent vertical migration of NAPL. The piezometer casing and screen were removed, the borehole was over-drilled using 4.25-inch (inner diameter) hollow stem augers, and the borehole was filled with grout from the bottom up using a tremie pipe as the augers were withdrawn. Abandonment forms are included as **Attachment 2**.

Test Pitting

Test pits were completed using an excavator at two locations, one centered on piezometers A10-006E-PZ and A10-006C-PZ (Eastern Test Pit) and the second centered on piezometer A10-006K-PZ (Western Test Pit). Subgrade structures (including the UST) were encountered at two locations within the Eastern Test Pit. The removal of these subgrade structures is discussed in



the designated section below. Field activities were conducted in accordance with the Standard Operating Procedures (SOPs) and requirements given in the property-wide Quality Assurance Project Plan (QAPP). The investigation was conducted under the property-wide Health and Safety Plan (HASP). Test pitting was conducted in accordance with the methods specified in QAPP Worksheet 21 – Field SOPs, SOP No. 015 – Test Pitting.

Impacted material was excavated from the test pits beginning January 24, 2020. A photograph log is included as **Attachment 3**. Each test pit was proposed with approximate dimensions of 10 feet by 10 feet, but both were expanded after encountering NAPL. The proposed test pit boundaries are shown on **Figure 4** (reproduced from the original Test Pitting Work Plan) and **Figure 5**. **Figure 5** shows the final boundary of each excavation as recorded in the field using a hand-held GPS unit. The Eastern Test Pit and Western Test Pit were completed with approximate areas of 2,490 square feet and 270 square feet, respectively. The Eastern and Western Test Pits were excavated to depths of approximately 6 feet bgs and 15 to 18 feet bgs, respectively. Neither test pit penetrated the underlying confining clay layer.

Most excavated soil was clayey with some silt and sand. Staining and NAPL-impacted materials were observed, along with pockets of free NAPL product in the vicinity of the UST. Railroad bedding, concrete, and other rubble materials were encountered in some areas of the excavations. The NAPL encountered during excavation activities was predominantly dark brown in color and floated on the surface of the water in the excavation. Groundwater that infiltrated into the excavation was turbid due to excavator disturbance.

The Western Test Pit excavation was completed first, and confirmation samples were collected from the center point of each sidewall and the bottom of the Western Test Pit excavation on January 30, 2020 and submitted to PACE for VOCs, SVOCs, TPH-DRO, TPH-GRO, and Oil & Grease analysis. The confirmation sample locations are indicated on **Figure 5**. The analytical laboratory report is provided as an electronic attachment.

The MDE visited the test pits on February 3, 2020 and requested the removal of additional material from the Eastern Test Pit. Additional material was removed from the Eastern Test Pit until free oil no longer drained into the excavation. The MDE visited the site on February 20, 2020 and gave approval to backfill both excavations. The MDE informed EAG that no sidewall or bottom confirmation samples would be required from the Eastern Test Pit.

Subgrade Structures

During the excavation of the Eastern Test Pit, an approximately 3,000-gallon steel UST was encountered. The location of the UST is shown on **Figure 5**. A vacuum truck was used to remove water and NAPL from the UST. The UST was removed on February 3, 2020 by ACE Environmental Holdings, LLC (ACE), a certified tank removal contractor, with oversight



provided by an MDE OCP inspector. ACE's UST System Closure Report (dated April 15, 2020) is included as **Attachment 4**.

During the removal of additional material from the Eastern Test Pit, a concrete subgrade structure was uncovered near the southern sidewall. The approximate location of this structure is shown on **Figure 5**. The structure had been previously filled with soil and stone. The structure and its fill materials were removed from the excavation.

During excavation activities, concrete, metal, railroad bedding, and other rubble was encountered. Concrete and metal rubble were stockpiled separately from soil to await disposal.

Excavated Material Handling and Disposal

As material was excavated, it was screened using a hand-held photoionization detector (PID) as well as visual and olfactory methods to determine if there was evidence of NAPL contamination. Soil with PID readings greater than 10 ppm or indicators of NAPL contamination was segregated and placed in designated stockpiles (not exceeding 500 cubic yards) adjacent to the excavation. The impacted stockpiles were kept separate from stockpiled soil which appeared to be clean. All impacted soil was placed on polyethylene sheeting. In order to minimize dust and prevent run-on/runoff, all stockpiles were covered at the end of each day, and remained covered by polyethylene when they were not being used. A weighted cover system was used to keep the covers in place.

Composite soil samples were collected from the impacted stockpiles and submitted to Caliber Analytical Services for laboratory testing at a rate of one sample for every 500 cubic yards (i.e., one sample per stockpile) for TCLP parameters (VOCs, SVOCs, and metals) and PCBs. Each composite sample from the impacted stockpiles consisted of 10 randomly selected grab aliquots. The analytical laboratory report is provided as an electronic attachment. All results indicated that the stockpiled materials were non-hazardous. All material from the impacted stockpiles (approximately 350 tons) and the non-impacted stockpiles (approximately 1,400 tons) was disposed of at Greys Landfill.

Backfilling

The test pits were approved to be backfilled by the MDE during their site visit on February 20, 2020. All standing water was removed from the excavation with a vacuum truck prior to placing fill. An open graded aggregate (#57 stone) was placed in 12 inch lifts up to the maximum height of groundwater and tamped into place with the excavator bucket. Marker fabric was placed above the aggregate layer. The remainder of the excavation was backfilled with sandy gravel fill material selected by TPA. Two samples of the material were submitted to Geo-Science Engineering & Testing, LLC (GSET) for testing (ASTM D1557 Modified Proctor). The laboratory report is provided as an electronic attachment.



During placement of material for compaction, ARM verified that appropriate loose lift thicknesses of 6 to 8 inches were placed. Each lift was observed to be compacted under the weight of a 10-ton vibratory roller after a minimum of four passes. Both static and vibratory compaction were performed to facilitate proper compaction. ARM conducted compaction testing using a Troxler Nuclear Density Gauge at a rate of three density tests per lift. ARM field personnel observed that the density and moisture parameters obtained during laboratory testing (ASTM D1557 Modified Proctor) yielded inconsistent density gauge results in the field. The laboratory notified ARM that the results of the modified Proctor testing were suspect, and it is likely that the samples collected for laboratory testing were not representative of the stockpiled material as a whole. A field Proctor test was performed to determine more appropriate parameters for maximum dry unit weight (111 pounds per cubic foot) and optimum moisture content (11%).

ARM approved the soil that had been placed and compacted that met or exceeded 95% compaction of the maximum dry unit weight based on the field Proctor values. Furthermore, ARM only approved the soil that had a moisture content within 3% of the optimum moisture content. If any soil did not meet the compaction or moisture requirements, the contractor amended the soil by means of uniform drying or wetting. In addition, compaction was performed until no visual deflection was observed beneath the roller.

If you have questions regarding any information covered in this document, please feel free to contact ARM Group LLC at (410) 290-7775.

Respectfully Submitted,
ARM Group LLC



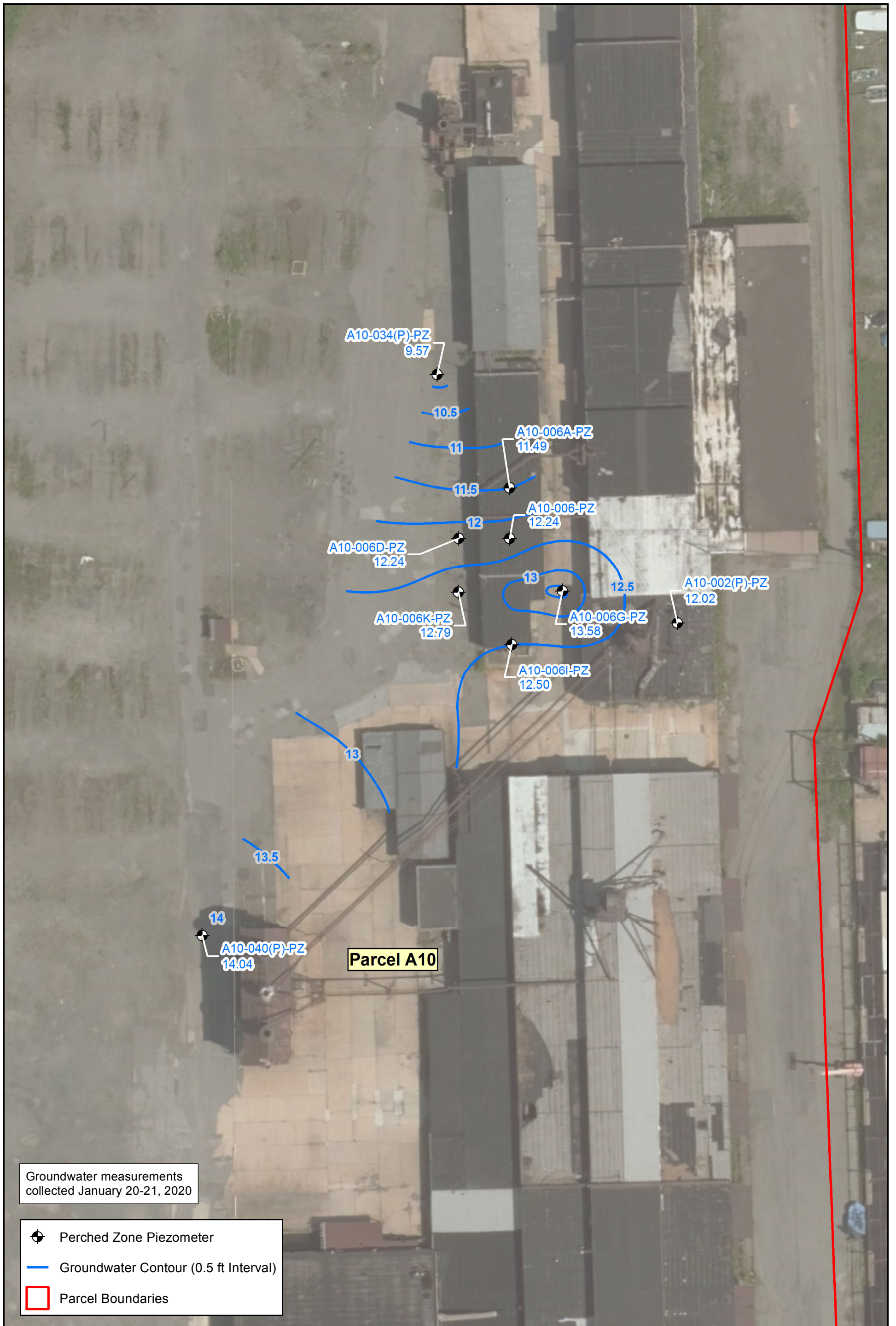
Melissa Replogle, E.I.T.
Project Engineer






Eric S. Magdar, P.G.
Vice President



FIGURES



Groundwater measurements collected January 20-21, 2020

-  Perched Zone Piezometer
-  Groundwater Contour (0.5 ft Interval)
-  Parcel Boundaries



ARM Group LLC
Engineers and Scientists



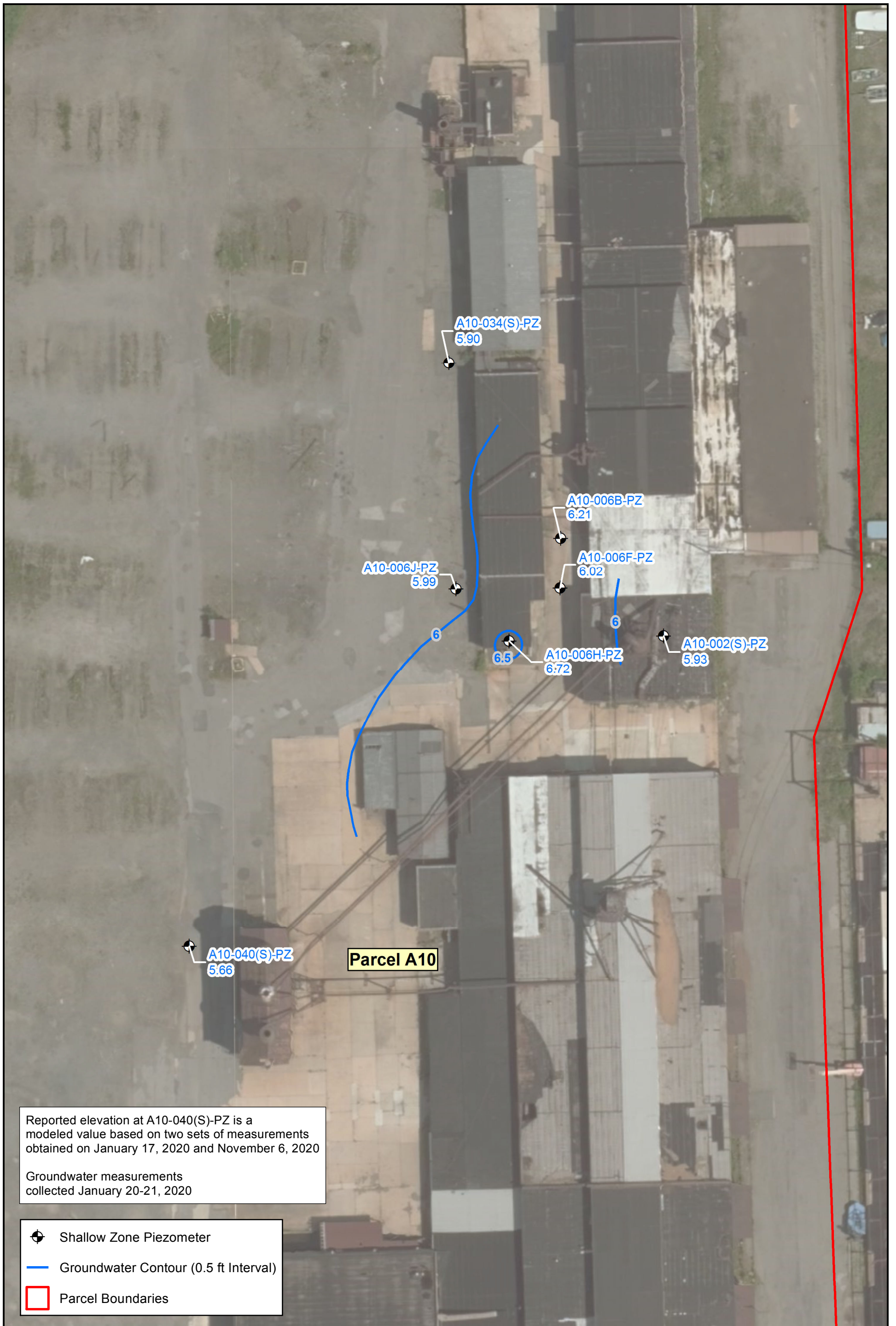

**Parcel A10 NAPL Delineation Area
Perched Zone Groundwater Contours**

March 11, 2020

EnviroAnalytics Group
ARM Project 200101110-1




Tradepoint Atlantic
Baltimore County, MD

Figure
1



Reported elevation at A10-040(S)-PZ is a modeled value based on two sets of measurements obtained on January 17, 2020 and November 6, 2020

Groundwater measurements collected January 20-21, 2020

-  Shallow Zone Piezometer
-  Groundwater Contour (0.5 ft Interval)
-  Parcel Boundaries



ARM Group LLC
Engineers and Scientists



0 25 50 100 Feet





**Parcel A10 NAPL Delineation Area
Shallow Zone Groundwater Contours**

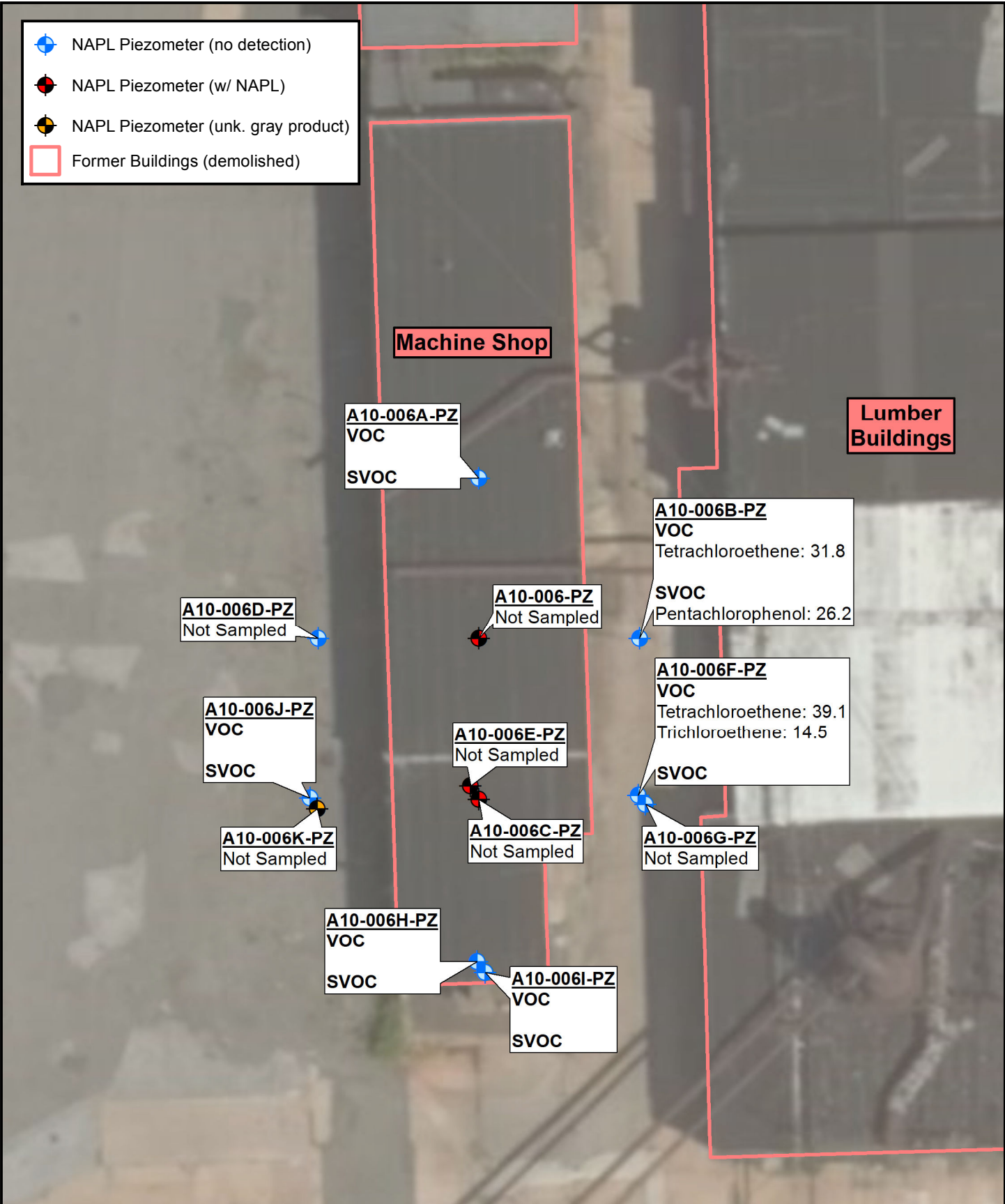


March 11, 2020

EnviroAnalytics Group
ARM Project 200101110-1

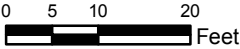
TradePoint Atlantic
Baltimore County, MD

**Figure
2**

-  NAPL Piezometer (no detection)
-  NAPL Piezometer (w/ NAPL)
-  NAPL Piezometer (unk. gray product)
-  Former Buildings (demolished)







ARM Group LLC
Engineers and Scientists

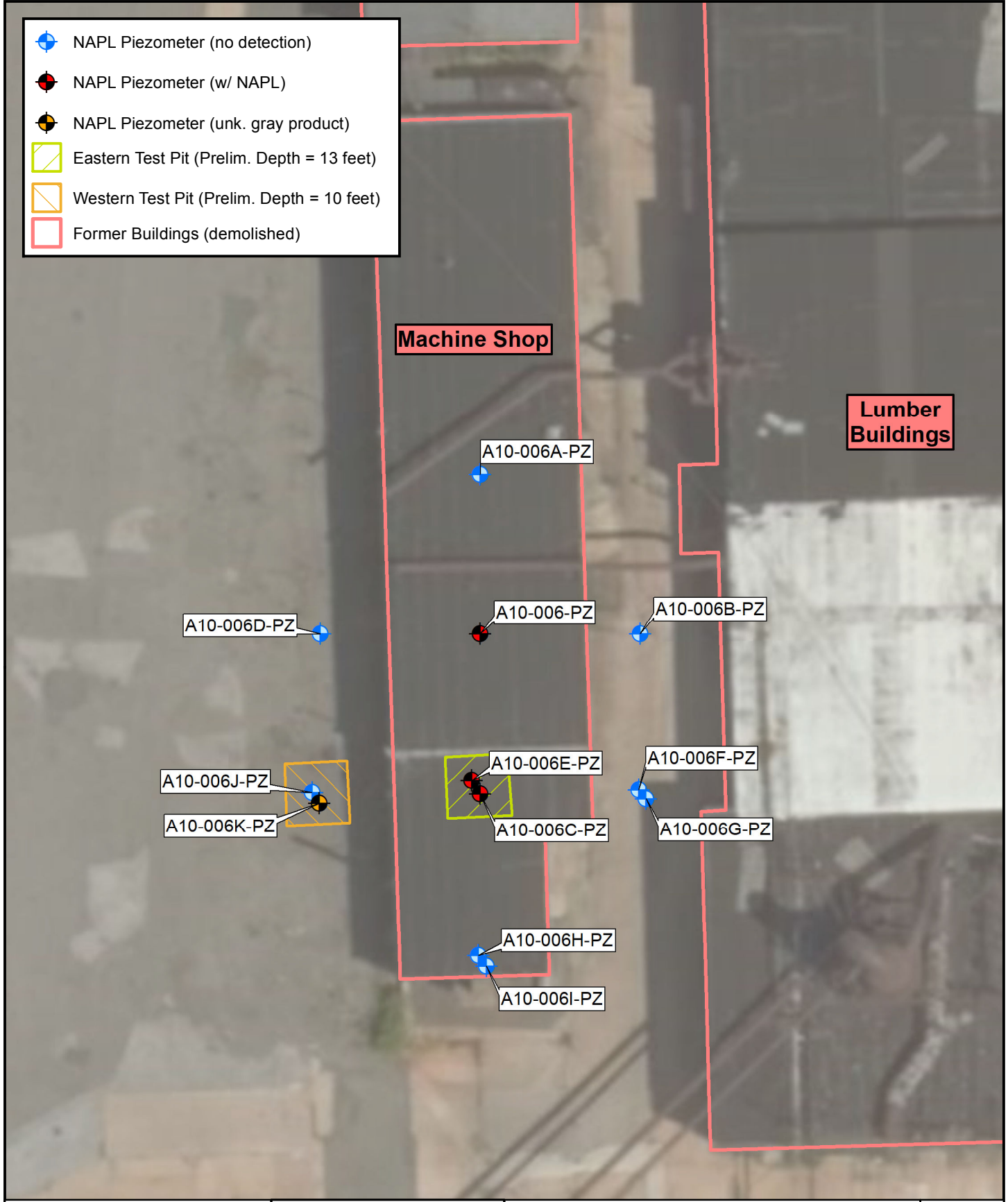



EnviroAnalytics Group
 ARM Project 20010110-1
 Tradepoint Atlantic
 Baltimore County, MD

Parcel A10
 NAPL Delineation
 Groundwater PAL Exceedances (ug/L)
 May 4, 2020

Figure
3

-  NAPL Piezometer (no detection)
-  NAPL Piezometer (w/ NAPL)
-  NAPL Piezometer (unk. gray product)
-  Eastern Test Pit (Prelim. Depth = 13 feet)
-  Western Test Pit (Prelim. Depth = 10 feet)
-  Former Buildings (demolished)

ARM Group LLC
Engineers and Scientists

0 5 10 20
Feet

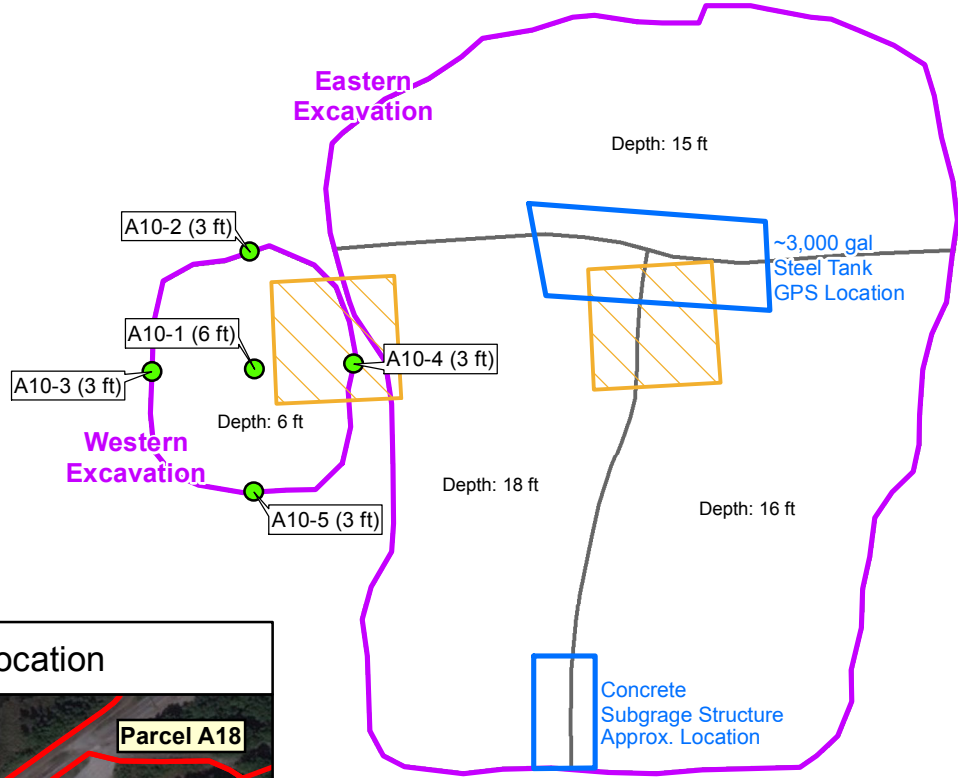
EnviroAnalytics Group
ARM Project 20010110-1
Tradepoint Atlantic
Baltimore County, MD

**A10-006-PZ NAPL Delineation Area
Proposed Test Pitting Activities**

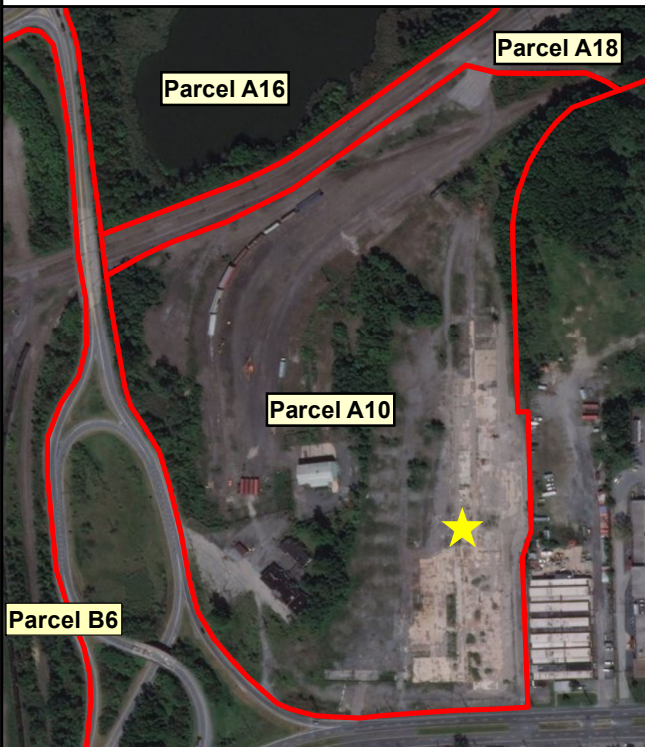
May 4, 2020

**Figure
4**

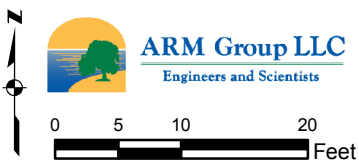
	Western Excavation	Eastern Excavation		
Depth (ft)	6	15	16	18
Area (ft ²)	270	800	925	765
Volume (yd ³)	60	445	550	510
Total Volume (yd ³)	60	1,505		



Excavation Location



- Confirmation Samples
- Subgrade Structure/Tank
- Final Excavation Boundary
- Proposed Test Pitting Location
- Parcel Boundary



EnviroAnalytics Group
 ARM Project 20010110-1
 Tradepoint Atlantic
 Baltimore County, MD

Parcel A10
 NAPL Excavation Boundaries
 Approximate Depths
 May 4, 2020

Figure
5

TABLES

Table 1 - Parcel A10 NAPL Samples
Summary of Organics Detected in Solid/Liquid Samples

Parameter	PAL Solid	PAL Aqueous	A10-006C-PZ	A10-006E-PZ	A10-006K-PZ
			Black DNAPL	Black LNAPL	Gray DNAPL
			1/3/2020	1/3/2020	1/3/2020
			ug/kg	ug/L	ug/kg
Volatile Organic Compounds					
1,1,2,2-Tetrachloroethane	2,700	0.076	10,300	598 U	0.01 U
1,2,3-Trichlorobenzene	930,000	7	6,010 U	363 J	0.0105 J
1,2-Dibromoethane (EDB)	160	0.0075	6,010 U	307 J	0.01 U
2-Butanone (MEK)	190,000,000	5,600	12,000 U	1,430	0.10 U
2-Hexanone	1,300,000	38	3,240 J	1200 U	0.10 U
4-Methyl-2-pentanone (MIBK)	56,000,000	1,200	12,000 U	2,540	0.10 U
Benzene	5,100	5	1,090 J	215 J	0.01 U
Cyclohexane	27,000,000	13,000	8,970 J	3,630	0.10 U
Ethylbenzene	25,000	700	1,680 J	620	0.01 U
Isopropylbenzene (Cumene)	9,900,000	450	8,190	3,090	0.01 U
Methylene Chloride	1,000,000	5	6,010 U	598 U	0.0329
Toluene	47,000,000	1,000	6,010 U	135 J	0.01 U
Xylene (Total)	2,800,000	10,000	21,100	3,030	0.03 U
Semi-Volatile Organic Compounds					
2-Methylnaphthalene	3,000,000	36	620,000	708,000	0.20 U
bis(2-Ethylhexyl)phthalate	160,000	6	192,000 U	198000 U	0.0887 J
Naphthalene	17,000	0.17	249,000	296,000	0.20 U
Phenanthrene			260,000	364,000	0.20 U

Detections in bold

Values in red indicate an exceedance of the appropriate Project Action Limit (PAL)

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

**Table 2 - Parcel A10
NAPL Area Groundwater Elevation Data**

Piezometer ID	Laser Elevation (ft AMSL)	Laser Difference	TOC Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	NAPL Thickness
A10-006-PZ	23.19	-0.56	22.63	10.39	12.24	trace LNAPL
A10-006A-PZ	23.19	-0.88	22.31	10.82	11.49	none
A10-006B-PZ	23.19	-1.69	21.5	15.29	6.21	none
A10-006C-PZ	23.19	-0.9	22.29	14.82	7.47	trace LNAPL & 18.0 ft DNAPL
A10-006D-PZ	23.19	-2.94	20.25	8.01	12.24	none
A10-006E-PZ	23.19	-1.32	21.87	10.02	11.85	0.77 ft LNAPL
A10-006F-PZ	23.19	-1.32	21.87	15.85	6.02	none
A10-006G-PZ	23.19	-2.45	20.74	7.16	13.58	none
A10-006H-PZ	23.19	-1.11	22.08	15.36	6.72	none
A10-006I-PZ	23.19	-1.38	21.81	9.31	12.50	none
A10-006J-PZ	23.19	-2.38	20.81	14.82	5.99	none
A10-006K-PZ	23.19	-2.58	20.61	7.82	12.79	7.4 ft DNAPL
A10-002(P)-PZ	NA	NA	22.13	10.11	12.02	none
A10-002(S)-PZ	NA	NA	22.06	16.13	5.93	none
A10-034(P)-PZ	NA	NA	19.74	10.17	9.57	none
A10-034(S)-PZ	NA	NA	20.10	14.20	5.90	none
A10-040(P)-PZ	NA	NA	19.71	5.67	14.04	none
A10-040(S)-PZ	NA	NA	21.16	NA	5.66*	none

TOC: top of casing

AMSL: above mean sea level

Measured 1/20/20

Measured 1/21/20

*Reported elevation is a modeled value based on two sets of measurements obtained on January 17, 2020 and November 6, 2020

**Table 3 - Parcel A10
Summary of Organics Detected in Groundwater**

Parameter	Units	PAL	A10-006A-PZ 1/21/2020	A10-006B-PZ 1/21/2020	A10-006F-PZ 1/21/2020	A10-006H-PZ 1/21/2020	A10-006I-PZ 1/21/2020	A10-006J-PZ 1/21/2020
Volatile Organic Compounds								
1,1-Dichloroethene	µg/L	7	1 U	1 U	0.88 J	1 U	1 U	1 U
1,2-Dichlorobenzene	µg/L	600	1 U	2.1	1 U	1 U	1 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	2 U	1.9 J	2.6	2 U	2 U	2 U
Acetone	µg/L	14,000	10 U	7.3 J	10 U	10 U	11.7	10 U
cis-1,2-Dichloroethene	µg/L	70	1 U	1.9	2.6	1 U	1 U	1 U
Isopropylbenzene	µg/L	450	0.87 J	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether (MTBE)	µg/L	14	1 U	0.95 J	2.7	1.3	1 U	1.6
Tetrachloroethene	µg/L	5	1 U	31.8	39.1	1 U	1 U	2.3
Trichloroethene	µg/L	5	1 U	4	14.5	1 U	1 U	0.8 J
Vinyl chloride	µg/L	2	1 U	1 U	0.36 J	1 U	1 U	1 U
Semi-Volatile Organic Compounds								
2,3,4,6-Tetrachlorophenol	µg/L	240	1 U	3.3	0.99 U	1 U	2.6 U	0.99 U
4-Chloroaniline	µg/L	0.36	0.23 J	0.99 U	0.99 U	1 U	2.6 U	0.99 U
bis(2-Ethylhexyl)phthalate	µg/L	6	2.8	1.9	2.5	2.4	4.8	2
Caprolactam	µg/L	9,900	2.5 U	2.5 U	2.5 U	2.5 U	6.6 U	0.5 J
Pentachlorophenol	µg/L	1	2.5 U	26.2	2.5 U	2.5 U	6.6 U	2.5 U

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

All results are non-validated

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

ATTACHMENT 1

Low Flow Sampling Permanent Wells



Project Name: A10 CVOG G-w Delin.
Well Number: A10-006A-P2
Well Diameter (in): 1
Depth to Product (ft):
Depth to Water (ft): 2.63
Product Thickness (ft):
Depth to Bottom (ft): 15.19

Project Number: 180716-1-3
Date: 1-21-20
One Well Volume (gal):
QED Controller Settings:
Flow Rate (mL/min) 200
Length of time Purged (min):
Condition of Pad/Cover: /

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1122	0.2		12.0	6.07	0.642	7.81	-58.1		
1127	0.4		12.4	7.11	0.536	5.80	-31.3		
1132	0.6		12.6	6.60	0.480	4.81	16.5		
1137	0.8		12.0	6.42	0.456	4.27	37.0		
1142	1.0		12.8	6.36	0.462	3.81	39.0		
1147	1.2		12.7	6.34	0.462	3.55	39.2		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
A10-006A-P2	1152	TCL-VOCs	3 - 40 mL VOA	HCl	
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2 - 1 L Amber	none	
		Oil & Grease	2 - 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	
PCB	2 - 1 L Amber	None			
Matrix Spike					
Duplicate					

Sampled By: TCV

Comments:

Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 gal/ft
ft x gal/ft = (gal)

Low Flow Sampling Permanent Wells



AKM Group Inc.
Earth Resource Engineers and Consultants

Project Name: A10 Test Pit
 Well Number: A10-006F-P2
 Well Diameter (in): 1
 Depth to Product (ft): -
 Depth to Water (ft): 15.93
 Product Thickness (ft): -
 Depth to Bottom (ft): 30.49

Project Number: 180716 M-1-3
 Date: 1/21/20
 One Well Volume (gal):
 QED Controller Settings:
 Flow Rate (mL/min) 400
 Length of time Purged (min):
 Condition of Pad/Cover: 1

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1123	0	15.93	11.54	5.94	0.225		96		
1128	0.4		11.13	5.97	0.225		46		
1133	0.8		10.75	5.97	0.233		46		
1138	1.2		10.27	5.97	0.245		55		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1143	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2 - 1 L Amber	none	Y
		Oil & Grease	2 - 1 L Amber	HCl	Y
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	

Matrix Spike

Duplicate

Sampled By: LMG

Comments:

DO + turb. inoperable (Horita)

Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 gal/ft
 ft x gal/ft = (gal)

Low Flow Sampling Permanent Wells



AKM Group Inc.
Earth Resource Engineers and Consultants

Project Name: A10 test pit
 Well Number: A10-006 I-PZ
 Well Diameter (in): 1
 Depth to Product (ft): -
 Depth to Water (ft): 9.35
 Product Thickness (ft): -
 Depth to Bottom (ft): 15.01

Project Number: 1807/6M-1-3
 Date: 1/21/20
 One Well Volume (gal):
 QED Controller Settings:
 Flow Rate (mL/min) 375
 Length of time Purged (min):
 Condition of Pad/Cover: 1

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1204	0	9.35	7.84	6.63	0.196		47		
1209	.4		7.49	6.71	0.183		51		
1214	.8								
1219	1.2								

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Preservative	Collected?
	1300	TCL-VOCs	3 - 40 mL VOA	HCl	y
		TPH-GRO	3 - 40 mL VOA	HCl	n
		TPH-DRO	2 - 1 L Amber	none	n
		TCL-SVOCs	2 - 1 L Amber	none	y
		Oil & Grease	2 - 1 L Amber	HCl	n
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
Matrix Spike Duplicate					↓

Sampled By: LMG

Comments: purge dry @ 1212
no turb inoperable (Horiba)

Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 gal/ft
 ft x _____ gal/ft = _____ (gal)

Low Flow Sampling Permanent Wells



AKM Group Inc.
Earth Resource Engineers and Consultants

Project Name: AO Test Pit
 Well Number: A10-00161-P2
 Well Diameter (in): 1
 Depth to Product (ft): —
 Depth to Water (ft): 14.91
 Product Thickness (ft): —
 Depth to Bottom (ft): 28.63

Project Number: _____
 Date: 1/21/20
 One Well Volume (gal): _____
 QED Controller Settings: _____
 Flow Rate (mL/min) 400
 Length of time Purged (min) _____
 Condition of Pad/Cover: 1

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1052	0	14.91	12.71	4.52	0.391	0	285	0.0	
1057	0.4		12.45	4.61	0.397	}	286	}	
1102	0.8		12.33	4.63	0.410		290		
1107	1.2		12.82	4.62	0.415		289		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?	
1112	1112	TCL-VOCs	3 - 40 mL VOA	HCl	y	
		TPH-GRO	3 - 40 mL VOA	HCl	n	
		TPH-DRO	2 - 1 L Amber	none	n	
		TCL-SVOCs	2 - 1 L Amber	none	y	
		Oil & Grease	2 - 1 L Amber	HCl	n	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	↓	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none		
		Total Cyanide	1 - 250 mL Plastic	NaOH		
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3		
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none		
PCB	2 - 1 L Amber	None				
Matrix Spike						
Duplicate						

Sampled By: LMG

Comments: DO 1 turb inoperable (Horiba)

Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 gal/ft
 _____ ft x _____ gal/ft = _____ (gal)

ATTACHMENT 2

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/23/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

- 1. PVC → Pulled Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
- 2. Abandoned → Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 16.88'	Depth to Water (TOC): 10.36'
Measured: 15.29'	Depth to NAPL (TOC): 10.05'

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): NAPL visible on screen



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006A-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/23/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 21.5'	Depth to Water (TOC): 8.94' (probe malfunction)
Measured: 15.25'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006B-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/23/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 30.37'	Depth to Water (TOC): 15.31'
Measured: 27.92'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006C-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 32.92'	Depth to Water (TOC): 22.17'
Measured: 29.60'	Depth to NAPL (TOC): 12.35' - 22.17' (LNAPL, possible probe malfunction)

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): NAPL visible on screen



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006D-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 17.45'	Depth to Water (TOC): 8.33'
Measured: 16.74'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006E-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 17.58'	Depth to Water (TOC): 9.55'
Measured: 15.91'	Depth to NAPL (TOC): 9.28'

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): NAPL visible on screen
Oil sheen at surface after filling with grout



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006F-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 32.95'	Depth to Water (TOC): 16.15'
Measured: 30.93'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006G-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 16.74'	Depth to Water (TOC): 8.34' (possible probe malfunction)
Measured: 16.25'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006H-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/23/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 33.02'	Depth to Water (TOC): 15.74'
Measured: 31.11'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): Hydraulically connected to A10-006I-PZ during grout pumping



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006I-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/23/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 17.82'	Depth to Water (TOC): 9.55'
Measured: 15.04'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): Hydraulically connected to A10-006H-PZ during grout pumping



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006J-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place
2. Abandoned ← Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 32.81'	Depth to Water (TOC): 15.04'
Measured: 31.84'	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: A10-006K-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: A10

Abandonment Date: 1/22/20

Abandonment Contractor: Connelly

Abandonment Method (circle appropriate):

1. PVC → Pulled Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → Grout / Bentonite Chips

Field Equipment: Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): R. Clancy

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 17.51	Depth to Water (TOC): 8.17'
Measured: 10.83'	Depth to NAPL (TOC): Probe Malfunction

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): A10-006 NAPL

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): DNAPL (grey) reported in well



ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

ATTACHMENT 3

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



0120-1: Presence of NAPL during initial excavation in eastern test pit.

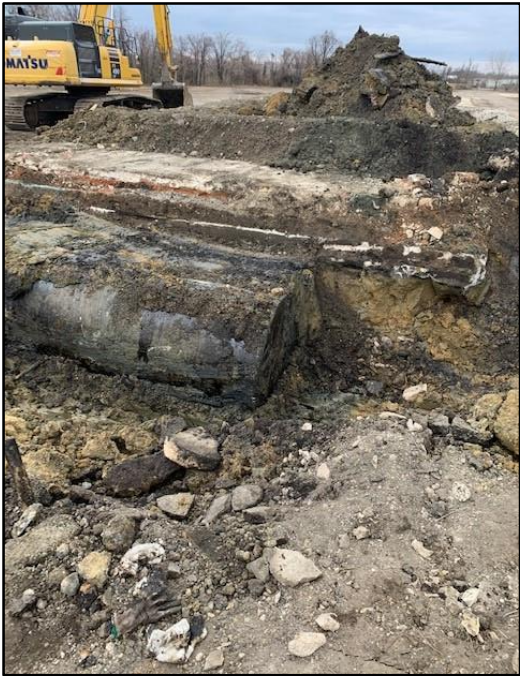


0120-2: Presence of NAPL during initial excavation in eastern test pit.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



0120-3: Removal of material from buried underground storage tank (UST) during excavation using a vacuum truck.



0120-4 : UST exposed during excavation.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



0120-5: Dark NAPL product at the surface of water in the excavated area.



020320-1: ACE Environmental personnel removing remaining UST contents using a vacuum truck.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



020320-2: Removal of the uncovered empty UST using the excavator.



020320-3: ACE Environmental personnel removing NAPL product uncovered following UST removal using a vacuum truck.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



020320-4: An unknown pipe uncovered during the UST removal.



020320-5: Removal of pipes revealed during excavation and UST removal.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



020520-1: Western test pit and standing surface water. MDE gave approval to backfill during their 2/20/2020 visit to the site.



020520-2: Panorama view of eastern test pit excavation.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



021720-1: An exposed rail and an additional subgrade structure encountered while expanding the eastern test pit excavation. The structure had been backfilled with soil and stone.



021720-2: Presence and removal of NAPL on the surface of water which infiltrated the eastern test pit excavation.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



021820-1: Presence of NAPL on the western portion of the eastern test pit excavation area.



021820-2: A small volume of groundwater on the surface of the western test pit. The pit did not show signs of NAPL infiltration after two weeks of remaining open.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



022020-1: Removal of surface water and NAPL from eastern test pit by ACE Environmental personnel.



022020-2: Eastern test pit excavation

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



022020-3: View of the final eastern test pit excavation area from the southern sidewall.



022020-4: View of the final eastern test pit excavation area from the northern sidewall.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



022120-1: Initial backfilling with #57 stone. The aggregate was used to partially backfill the excavation to above the groundwater level.

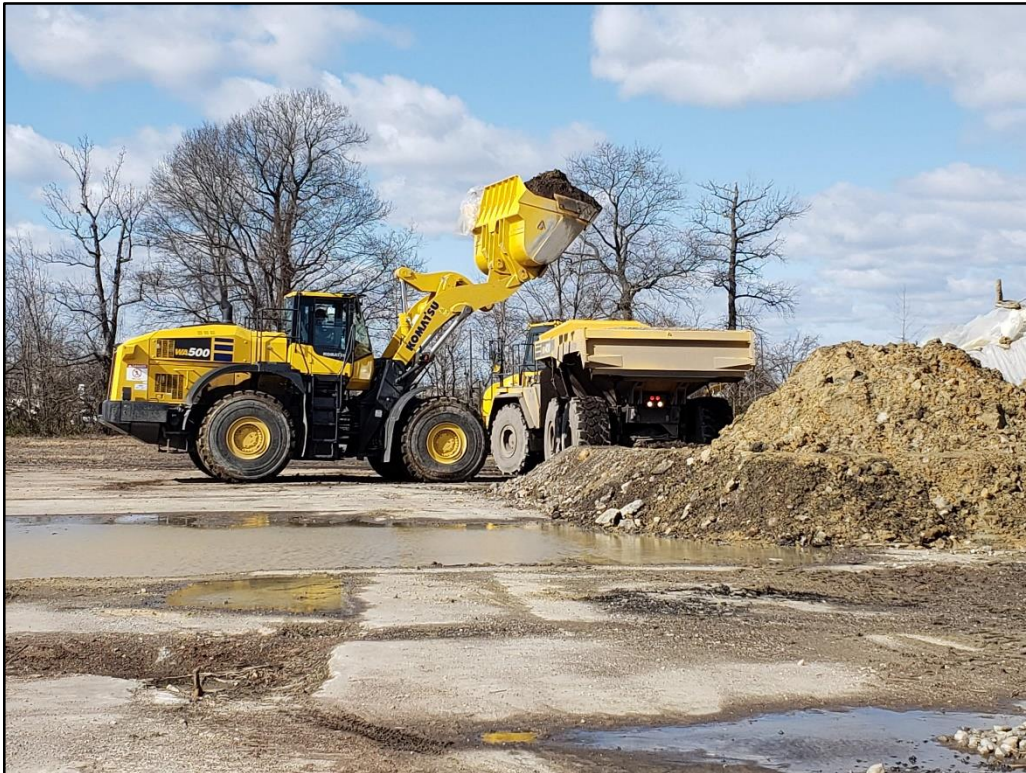


022420-1: Backfilling and rolling a lift of the excavation.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



022620-1: Backfilling.



022720-1: Loading excavated soil for disposal at Greys Landfill. All waste material was deemed non-hazardous and was disposed of at Greys Landfill.

**Excavation of NAPL-Contaminated Media
Area A: Parcel A10 Excavation Area
Sparrows Point, Maryland**



022720-2: Backfilling a few feet below the existing ground surface. Water was applied to some lifts as needed for material compaction.



022820-1: Surface of the backfilled excavation. The rail lines were left exposed to be cut and removed in the future.

ATTACHMENT 4



LEADERS IN CLIENT SATISFACTION
Serving the Baltimore-Washington Metro Area

4420 East Eager Street • Baltimore, MD 21205 • (410) 354-8030 • Fax: (410) 354-8031
info@aceenvironmental.net • www.aceenvironmental.net

UST System Closure Report

April 15, 2020

Mr. Matt Mueller
Maryland Department of the Environment
Suite 620
1800 Washington Boulevard
Baltimore, MD 21230

RE: Underground Storage Tank System Closure Report
 Former Nelson Company
 1600 Sparrows Point Boulevard
 Baltimore, MD 21219
 MDE Case No. 20-0406BA
 Facility I.D. 10584

Dear Mr. Mueller:

Ace Environmental Holdings, LLC is pleased to submit the enclosed underground storage tank system closure report for the above referenced property.

Should you have any questions or comments regarding this report, please contact the undersigned at 410-354-8030.

Sincerely,

Michael Edillon, Project Manager
Ace Environmental Holdings, LLC

24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services

Table of Contents

1. Underground Storage Tank System Closure Report
 - A. Narrative
 - B. Sampling
 - C. Analytical Results
 - D. Conclusions and Recommendations

2. Supporting Documents
 - I. Site Diagrams
 - II. Site Photographs
 - III. MDE 30-day Notification Form
 - IV. Baltimore County Permit
 - V. MDE-OCP Tank Closure Form dated February 3, 2020
 - VI. Receipts
 1. Liquid/Sludge Disposal Manifests
 2. Tank Disposal
 3. Soil Disposal
 - VII. Laboratory Analytical Report including Chain of Custody Documentation
 - VIII. UST Registration Form

1. Underground Storage Tank System Closure Report

A. Narrative

On February 3, 2020, Ace Environmental Holdings, LLC (Ace) mobilized to the site with the assistance of the general contractor to uncover, pump, and clean a historic out-of-use 3,000-gallon underground storage tank (UST) for removal. Note, this tank is UST #4 at this facility (former Nelson Company, Facility ID No. 10584). The tank was located at the center portion of the property and was discovered during site excavation work. The product inside the tank appeared to have been waste oil or heavily weathered/ degraded #2 fuel due to its blackened nature and associated odors. A large amount of sludge was observed in the UST during pump out and cleaning. The site and vicinity are served by public water.

The collected liquids/sludge and proper PPE/cleaning supplies were hauled off-site as non-hazardous waste to Ace's facility in Baltimore, Maryland for proper disposal—the liquid disposal manifests are attached. The tank cleaning, removal, soil assessment, and soil excavation was conducted under the supervision of Maryland Department of the Environment (MDE) certified remover, Michael Edillon (MDIC # 2019-2005R). MDE-Oil Control Program (OCP) Regional Geologist Mr. Matt Mueller and Mrs. Barbara Brown of the MDE-Environmental Restoration and Redevelopment Program were also on-site to observe work. The MDE-OCP field Tank Closure Form is included in this report.

UST Dimensions and Depths Table:

Tank ID	Product Type	Volume	Diameter	Length	Depth to UST Top	Depth to UST Bottom
UST 4	Waste Oil	3,000 gal	64 inches	18 feet	2 feet	7 - 7.5 feet

Prior to removal of the UST, liquid phase hydrocarbons (LPHs) were observed on groundwater in the excavation. Groundwater was observed at approximately 7.5 feet below grade surface (bgs) in the excavation. Upon removal of the UST, numerous perforations were observed in the tank and petroleum impacted soil was detected in the excavation. Soil in the tank excavation consisted of dense orange and white silty clay.

The LPHs and groundwater were removed by vac truck prior to excavation and during excavation work. Petroleum impacted soil within the excavation was removed to a depth of approximately 13-feet bgs where staining and petroleum odors were greatly reduced. In addition to the tank removal, the two steel pipes associated with the tank were chased and removed. No petroleum impacts were observed along the piping run. Ace screened soils from the bottom of the tank excavation and the piping run using a calibrated photo-ionization detector (PID) and readings were as follows:

Soil Sample T-1 (West End): PID = 0.0 - 0.1 units at 13' bgs
Soil Sample T-2 (Center): PID = 0.0 units at 13' bgs
Soil Sample T-3 (East End): PID = 0.0 units at 13' bgs
Soil Sample L-1 (Piping Run): PID = 0.0 units at 3' bgs

The removed petroleum impacted soil was stockpiled on plastic and covered pending disposal by the ARM Group, Inc. Additional petroleum impacts around the vicinity of the tank excavation were chased and removed by the ARM Group and the site contractor after the tank was removed. Ace Environmental assisted with additional groundwater removal during excavation activities. Approximately 10,754 gallons of fluids and sludge were removed for proper disposal at Ace's facility in Baltimore, MD. Approximately 1,738 tons of impacted soil was removed for proper disposal at the Grey's Landfill Facility in Sparrows Point, MD. The soil and liquid disposal manifests are included in this report.

B. Sampling

A total of three post excavation soil samples were collected from the UST excavation below the tank and one soil sample was collected from the piping run at the direction of MDE-OCP personnel on-site. Please see attached diagram for the soil sampling locations. The soil samples were collected utilizing sterile gloves, placed in laboratory-supplied bottle-ware, and immediately placed on ice in a clean cooler. The soil samples were analyzed for the following:

- Full suite volatile organic compounds (VOCs) including fuel oxygenates and naphthalene by EPA Method 8260,
- Total petroleum hydrocarbons-diesel range organics (TPH-DRO) and oil-range organics (TPH-ORO) using EPA Method 8015,
- Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270,
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082, and
- Toxicity characteristic leaching procedure (TCLP) Metals using EPA Method 1311

C. Analytical Results

The following is a summary of the laboratory analysis for soil (typical petroleum compounds only). All compounds analyzed in the soil samples were below detection limits (i.e. non-detect). Please see attached Certificate of Analysis for the full laboratory analytical report including chain-of-custody documentation.

Soil Sample Location	Sample Depth	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naphthalene	MTBE	TPH-DRO	TPH-ORO
MDE GNCS-Non Res-Soil		5.1	4,700	25	250	17	210	620	620
T-1	13'	< 0.0012	< 0.0012	< 0.0012	< 0.0024	< 0.0012	< 0.0012	< 20	< 4.0
T-2	13'	< 0.0011	< 0.0011	< 0.0011	< 0.0022	< 0.0011	< 0.0011	< 19	< 3.8
T-3	13'	< 0.0013	< 0.0013	< 0.0013	< 0.0026	< 0.0013	< 0.0013	< 20	< 4.1
L-1	3'	< 0.0013	< 0.0013	< 0.0013	< 0.0025	< 0.0013	< 0.0013	< 21	< 4.2

- Soil results are reported in mg/kg or ppm
- MDE GNCS-Non Res-Soil = MDE Generic Numeric Cleanup Standards for Non Residential Soils, October 2018.
- < 0.0012 = less than the laboratory detection limit of 0.0012 parts per million

D. Conclusions and Recommendations

Perforations were observed in UST #4 after removal and soil was over excavated from the tank pit for removal. Petroleum impacted groundwater was also removed. Approximately 10,754 gallons of fluids/sludge and approximately 1,738 tons of impacted soil were removed from the site for proper disposal. Petroleum impacted soil appeared to be limited in depth to approximately six feet below UST bottom where soil conditions showed no impact. Post-excavation soil analytical results were non-detect for all petroleum compounds and potential waste oil constituents. The site and vicinity are served by public water. Based on the removal of the source, the post excavation analytical results, and the presence of public water, Ace recommends case closure. If the MDE agrees, please send a Site Status letter with case closure to the owner's point of contact at the following addresses:

Mr. Matthew Newman
Tradeport Atlantic, LLC
1600 Sparrows Point Boulevard
Baltimore, MD 21219

2. Supporting Documents

24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services

Supporting Documents – Site Diagrams



UST Location Site Map
Former Nelson Company
2116 Sparrows Point Road
Baltimore, MD 21209

3,000-gallon UST

Tank Excavation Area

Miller Island
Propeller Inc. Facility

Exelon

Property Boundary

Point Rd

Sparrows Point Rd





Ace Environmental Holdings, LLC • 4420 East Eager Street, Baltimore MD 21205
(410) 354-8030 • Fax: (410) 354-8031 • info@aceenvironmental.net • www.aceenvironmental.net

Supporting Documents – Site Photographs



24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services



24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services



24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services



24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services



24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services



24-hour Emergency Spill Response, Complete Tank Management, Vacuum Truck Services
Hazardous and Non-hazardous Waste Transportation and Disposal, Tank and Industrial Cleaning
Environmental Consulting, Sampling and Remediation Services

Supporting Documents – MDE 30-day Notification Form

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Land Management Administration • Oil Control Program

1800 Washington Boulevard • Suite 620 • Baltimore Maryland 21230-1719

410-537-3442 • 800-633-6101 x3442 • 410-537-3092 (fax) • www.mde.maryland.gov

Underground Storage System Removal/Abandonment

30-Day Written Notification

Case No: [REDACTED]

Facility No: _____
(check box if facility was not previously registered)

This form shall be used to notify the Department at least 30 days before beginning underground storage tank removal and/or abandonment-in-place. When fully completed, this form may be accepted as an amendment to the Notification for Underground Storage Tanks currently on file with the Department, for the removals and/or abandonments listed. New tank installations must be reported on the five-page notification (Form Number MDE/WAS/PER.012). The Department reserves the right to require Form Number MDE/WAS/PER.012, if determined necessary to properly update Department records.

- (1) **Type of facility:** ___ Government Commercial ___ Farm/Nursery ___ Residential (non-rental) ___ Other (please specify) _____
- (2) **Type of work being performed:** Removal ___ Abandonment in Place ___ Temporary Closure ___ Installation ___ Upgrade of Existing Tank/Piping
(check all that apply)
- (3) **Date work is to be performed:** 2/24/2020 (4) **Estimated time that work will be ready for inspection:** 10:00 AM
- (5) **Insurance Information:** ___ Self Insurance ___ Insurance Pool ___ Risk Retention Group ___ Guarantee ___ Letter of Credit ___ Surety Bond
(check one) ___ Commercial Insurance: Policy No.: _____ Insurer: _____ Agent/Broker: _____ Phone: _____
___ Other Method allowed: (specify) _____

<p>(6) Contractor Information:</p> <p>ACE Environmental Holdings, LLC</p> <p>Company Name 4420 E Eager Street</p> <p>Mailing Address Baltimore, MD 21205</p> <p>City/State/Zip Yvonne McMahon</p> <p>Name of Contact Person 410-354-8030 410-354-8031</p> <p>Telephone No. Fax No. Richard Anstine</p> <p>Name of Person certified to do work</p> <p>MDIC- 2019-1912 R exp. date 10/01/2020</p>	<p>(7) Facility Information:</p> <p>Tradepoint Atlantic, LLC</p> <p>Facility Name 1600 Sparrows Point Blvd</p> <p>Street Address Baltimore, MD 21219</p> <p>City/State/Zip Seventh Street</p> <p>Nearest Cross Street Gerald Walsh</p> <p>Name of Contact Person at Site 570-903-7540</p> <p>Telephone No. of Contact Person</p>	<p>(8) Owner Information:</p> <p>Tradepoint Atlantic, LLC</p> <p>Owner Name 1600 Sparrows Point Blvd.</p> <p>Mailing Address Baltimore, MD 21219</p> <p>City/State/Zip James Calenda</p> <p>Contact Person at owner location (not contractor) 314-620-3056</p> <p>Telephone No. Fax No. James Calenda Senior Project Manager</p> <p>Name/Title of person authorized to represent owner</p>
--	---	--

30-DAY WRITTEN NOTIFICATION

MDE Oil Control Program

(9) **Underground Storage Tank Information:**

Facility No.: _____

Tank Number	Tank Capacity	Type of Product	Material of Construction Tank	Material of Construction		Date Tank Last Used	Date Tank Last Tested	Pass or Failed?	Type of Test
					Piping				
1	4,000	diesel	steel	N/A		UNK	UNK		

(10) **Are there additional underground storage tanks at this facility not listed above?** Yes No

(11) **Certification:**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this and all attached documents. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information submitted is true, accurate and complete. I understand this form may not be accepted by the Oil Control Program if the information is incomplete. (Complete items 1 through 11)

Signature of UST Owner/ Authorized Owner Representative: _____
(as listed in section 8 of this form)

Title: _____ **Date:** _____

Notice: Collection of Personal Records – State Government Article § 10-624

This Notice is provided pursuant to § 10-624 of the State Government Article of the Maryland Code. The personal information requested on this form is intended to be used in processing your application. Failure to provide the information requested may result in your application not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment (“MDE”) is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE’s website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

Supporting Documents – Baltimore County Permit

BALTIMORE COUNTY, MARYLAND
DEPARTMENT OF PERMITS, APPROVALS, AND INSPECTIONS

Michael D. Mallinoff

Michael D. Mallinoff, Director



E. John Bryan

E. John Bryan, Building Engineer

BUILDING PERMIT

PERMIT #: B967272 CONTROL #: TAC- DIST: 15 PREC: 01
DATE ISSUED: 01/28/2020 TAX ACCOUNT #: 1502024000 CLASS: 07

PLANS: CONST 00 PLOT 0 R PLAT 0 DATA 0 ELEC NO PLUM NO
LOCATION: 1600 SPARROWS POINT BLVD
SUBDIVISION:

OWNERS INFORMATION

NAME: TRADEPOINT ATLANTIC LLC
ADDR: 1600 SPARROWS POINT BLVD, BALTIMORE MD 21219

TENANT:

CONTR: ACE ENVIRONMENTAL HOLDINGS LLC

ENGR:

SELLR:

WORK: REMOVE ONE (1) 4000 GALLON UNDERGROUND OIL TANK
MUST COMPLY WITH NFPA 30 COMAR 26.10.01. GROUND
WATER MGMT LETTER IN FILE.

BLDG. CODE:

RESIDENTIAL CATEGORY: DETACHED

OWNERSHIP:

PROPOSED USE: VACANT PROPERTY

EXISTING USE: INDUSTRIAL STEEL PLANT

TYPE OF IMPRV: NEW BUILDING CONSTRUCTION

USE: OTHER - RESIDENTIAL

FOUNDATION:

BASEMENT:

SEWAGE: PUBLIC EXIST

WATER: PUBLIC EXIST

LOT SIZE AND SETBACKS

SIZE: 2432SF

FRONT STREET:

SIDE STREET:

FRONT SETB: NC

SIDE SETB: NC

SIDE STR SETB:

REAR SETB: NC

THIS PERMIT EXPIRES ONE
YEAR FROM DATE OF ISSUE

PLEASE REFER TO PERMIT NUMBER WHEN MAKING INQUIRIES

Supporting Documents – MDE Tank Closure From 2/3/20

MARYLAND DEPARTMENT OF THE ENVIRONMENT
 1800 Washington Boulevard, Suite 620 • Baltimore Maryland 21230-1719
 (410) 537-3442 • 1-800-633-6101 • <http://www.mde.maryland.gov>
 LAND AND MATERIALS ADMINISTRATION

OIL CONTROL PROGRAM

Tank Closure Form

Initial / Follow-Up

Site / Facility Name: Former Nelson Box Company
Address: 1600 Sparrows Point Blvd
City / County: Baltimore / Baltimore County

Date(s): February 3, 2020
Facility ID #: TBD
Case #: 20-0406BA

1. a) Number of USTs removed: 1
 b) Number of USTs closed-in-place: 0
 c) Number of registered USTs remaining on-site: 0

Tank	Product	Age (years)	Size (gallons)	Tank Construction	Piping Construction	Perforations		Disposal Site
						Tank	Piping	
UST#1	Unknown	Unk	3,000	Bare Steel	Bare Steel	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Smith Brothers
						Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
						Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
						Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
						Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	

2. Has piping been properly abandoned? Yes No Unknown
3. Has vent riser(s) been removed? Yes No
4. Has all liquid been removed from the UST(s)? Yes No
5. Certified contractor has functioning explosion meter on site? Yes No
6. Has UST(s) been purged of explosive or combustible vapors? Yes No
 (Must confirm less than 10% LEL with explosion meter)
7. Is groundwater contaminated? (If yes, type of product: Unknown) Yes No Can't determine at this time
8. Is soil contaminated? (If yes, type of product: Unknown) Yes No Can't determine at this time
9. Was contaminated soil removed? Yes No
 If Yes: Contaminated soil stockpiled onsite must be placed on **and** covered with plastic sheeting.
 Other: Must be covered with plastic sheeting.
10. Was soil field screened with PID? Yes No
 Tank – Max units: See UST Closure Report at - feet
 Piping – Max units: See UST Closure Report at - feet
11. Are domestic well(s) on site? Yes No Well Tag Number(s): _____
 Is sampling required? Yes No
 If Yes, sample for: EPA Method 524.2 – Full Suite VOCs, including fuel oxygenates and naphthalene
 Other: _____
12. Has inspector completed a site sketch? Yes No
13. Has inspector taken site photographs? Yes No
14. Was tank(s) labeled? Yes No
 If Yes, describe: Case Number, Tank Capacity, Date of Removal

**MDE/LMA/OCP
Tank Closure Form**

15. Within 45 Days, the following actions must be completed by the OWNER:

- Submit a Tank Closure Report that includes all of the following documentation:
 - Narrative of work conducted;
 - Soil and groundwater sampling data table(s);
 - Analytical laboratory results and chain of custody;
 - Conclusions and recommendations;
 - Site map showing the locations of all components of the UST system(s) and sample locations;
 - Photographs;
 - Disposal receipts (tank, soil, and liquid); and
 - Solid inert material receipt for closure-in-place.
- Properly Abandon All Piping in Compliance with COMAR 26.10.10.02B(2) (remove unless otherwise directed)
- Remove Vent Pipe Riser(s)
- All Contaminated Soils Must be Removed from the Site in Accordance with COMAR 26.10.09.03A(5)
- Submit Soil Analytical Results for the following EPA Methods:
 - 8260 – Full Suite VOCs, including fuel oxygenates and naphthalene
 - 8015B – TPH GRO/DRO 8015 – TPH ORO 8015 – TPH DRO/ORO
 - 8270 – SVOCs 8310 – PAHs 8082 – PCBs
 - 1311 – TCLP Metals 6020 – RCRA (8) Metals
 - Other: _____
- Submit Groundwater Analytical Results for the following EPA Methods:
 - 8260 – Full Suite VOCs, including fuel oxygenates and naphthalene
 - 8015B – TPH GRO/DRO 8015 – TPH ORO 8015 – TPH DRO/ORO
 - 8270 – SVOCs 8310 – PAHs
 - Other: _____
- Submit Tank Disposal Receipt
- Submit Soil Disposal Receipt(s)
- Submit Liquid / Sludge Disposal Receipt(s)
- Amend Registration:
 - Notification form provided to contact person
 - Owner/Representative informed case file may remain open until notification form is received by MDE
 - Completed onsite
- Other – See Further Requirements as Listed in Number 16, Comments (below).

16. Comments:

This writer arrived onsite met Mike Edillon (Ace Environmental Holdings, LLC, 443-452-0415), Matthew Newman (Tradepoint Atlantic, 443-791-9046) and Barbara Brown (MDE, 410-537-3493) for the removal of an orphan 3,000-gallon bare steel underground storage tank (UST). The site is a former machine-shop located on the former Sparrows Point Terminal property and is a part of the Voluntary Clean-up Program (VCP). VCP has been overseeing an investigation of non-aqueous phase liquids (NAPL) detected in the area of the former machine shop, which lead to the discovery of the improperly abandon UST system. The site and vicinity are served by a public water supply system. The site plans call for a large industrial building, with a vapor barrier to be built at this location.

Prior to arrival onsite, the fuel within the tank had been removed by a vactruck and the top of the tank had been unearthed. Upon arrival, the UST had been cut open, and cleaned. According to Mr. Edillon, excess sludge was encountered within the bottom of the tank. The bare steel UST was positioned in a general east to west direction, and bare steel product piping ran approximately 60 feet towards the east. The top of the UST was approximately 2 feet below ground surface (bgs), the diameter of the UST was approximately 5 feet (64 inches), therefore the bottom of the tank was at an approximately depth of 7 feet bgs. Upon removal, many perforations were observed within the tank and product piping. Petroleum staining was observed within soils in the tank field excavation, and liquid phase hydrocarbons were observed on groundwater, which was observed at an approximate depth of 8 feet bgs. The vactruck was utilized to recover LPH within the tank field excavation. As groundwater recharged into the excavation, a sheen/some LPH was observed. Petroleum impacted soils were excavated to an approximate depth of 13 feet bgs, from the depth of the bottom of the UST (~7feet bgs) to approximately 12 feet bgs, isolated pockets of LPH were encountered within the soil. At a depth of approximately 13 feet bgs, soils had a slight petroleum odor, but petroleum staining and LPH were not observed. At the referenced depth, 3 soil samples were collected. Within the northern side wall, at an approximate depth of 8 feet bgs, petroleum staining and LPH were observed. According to Mr. Newman, the tank field excavation will be left open for the next couple of days and the petroleum

**MDE/LMA/OCP
Tank Closure Form**



impacted soils within the northern wall will be removed. A total of 4 soil samples were collected, 3 from the tank field at approximate depths of 13 feet bgs, a 1 soil sample was collected beneath the product piping trench at an approximate depth of 3 feet bgs.

Note: On Feb. 4, 2020, a site representative reported that groundwater had recharged into the open excavation, an isolated pockets of LPH were observed on groundwater.

REQUIREMENTS:

- 1) Over-excavate petroleum impacted soils within the northern wall of the tank field excavation & recover all LPH encountered/observed within the tank field exaction.
- 2) The UST System Closure Report is due no later than Mar. 24, 2020. Within the Report, include a completed UST registration form, the LNAPL Delineation Report (previously completed), site map with pertinent information. SEE PAGE TWO, ITEM #15, FOR ADDITIONAL REPORTING
- 3) The 4 soil samples must be analyzed for:
 - Full suite volatile organic compounds (VOCs) including fuel oxygenates and naphthalene by EPA Method 8260.
 - Total petroleum hydrocarbon - diesel and oil range organics (TPH-DRO and TPH- ORO) by EPA Method 8015.
 - Semi volatile organic compounds (SVOCs) by EPA Method 8270
 - Polychlorinated biphenyls (PCB) by EPA Method 8082.
 - 1311 TCLP Metals.

Please call this writer if you have any questions at 410-365-0216 (cell).

	Name (Printed)	Signature	Date	Telephone Number
MDE Inspector	<u>Matt Mueller</u>		2/4/20	410-365-0216
UST Owner Contact	_____		_____	_____
Contractor	_____		_____	_____
Technician / Remover	Mike Edillon		_____	443-571-5347
Certification Number	MDIC 19-2005(R)	Expiration Date: 04/01/21		

Supporting Documents – Disposal Receipts

COMMERCIAL TICKET

TICKET #: 5285065 VENDOR: 165350
 STATUS: SCALE COMPLETE TRUCK#:
 TME IN: 02/26/20 10:26 AM DESCRIP: GRANITE
 TME OUT: 02/26/20 10:33 AM DRIVER:
 WEIGHER: AWRIGHT



UIM East
 P.O. Box 4452
 Baltimore, MD 21223
 P 410 522-1774 F 410 522-1555

ACE ENVIRONMENTAL
 3512 FAIRLFEILD RD
 CURTIS BAY, MD

Code	Commodity	Gross	Tare Contaminator	Tare2	Net U	Price	Total
602	SHEET IRON	37,860	34,100		3,760 C	0.0000	.00
		37,860	34,100		3,760		0.00

Seller certifies that all materials are refrigerant free in accordance with section 608 cf of the Clean Air Act, and has not leaked previously or prior to delivery. These weights setforth herein are manually entered.

TOTAL \$: \$0.00
 TOTAL LBS: 3,760

Customer Signature _____

FALSE STATEMENTS MADE IN THIS INSTRUMENT ARE PUNISHABLE AS A CLASS A MISDEMEANOR PURSUANT TO SECTION 210.45 OF THE PENAL LAW. ACCORDINGLY AND WITH NOTICE OF THE FOREGOING, I HEREBY AFFIRM THAT THE FOREGOING STATEMENTS ARE TRUE, UNDER PENALTY OF PERJURY, THIS _____ DAY OF _____, 20____

tank receipt

Greys Landfill Waste Disposal Manifest

Date: 2/15/2020 Time: 1200

Generator Name: EnviroAnalytics Group

Site Area of Waste Generation: Tradepoint Atlantic - Parcel A10

Generator Contact: James Calenda, jcalenda@enviroanalyticsgroup.com Telephone 314-620-3056

DETAILED WASTE DESCRIPTION

Waste Name: Parcel A10 - Petroleum Contaminated Soil

Approximate Amount of Waste to be Disposed: 581.6

<input type="checkbox"/> Pounds	<input type="checkbox"/> Weekly
<input checked="" type="checkbox"/> Tons	<input type="checkbox"/> Monthly
<input type="checkbox"/> Cubic Yards	<input checked="" type="checkbox"/> One Time

Physical Characterisitcs: Solid
 Sludge

Method Used to Determine Waste is Non-Hazardous: Laboratory Analysis* Both
 Generator Knowledge

*Attach laboratory analysis results to manifest

Manifest Completed by: Ryan Clancy, ARM Group

Greys Landfill Waste Disposal Manifest

Date: 2/19/2020 Time: 1200

Generator Name: EnviroAnalytics Group

Site Area of Waste Generation: Tradepoint Atlantic - Parcel A10

Generator Contact: James Calenda, jcalenda@enviroanalyticsgroup.com Telephone 314-620-3056

DETAILED WASTE DESCRIPTION

Waste Name: Parcel A10 - Petroleum Contaminated Soil

Approximate Amount of Waste to be Disposed: 529.7

<input type="checkbox"/> Pounds	<input type="checkbox"/> Weekly
<input checked="" type="checkbox"/> Tons	<input type="checkbox"/> Monthly
<input type="checkbox"/> Cubic Yards	<input checked="" type="checkbox"/> One Time

Physical Characterisitcs: Solid
 Sludge

Method Used to Determine Waste is Non-Hazardous: Laboratory Analysis* Both
 Generator Knowledge

*Attach laboratory analysis results to manifest

Manifest Completed by: Ryan Clancy, ARM Group

Greys Landfill Waste Disposal Manifest

Date: 2/27/2020 Time: 1200

Generator Name: EnviroAnalytics Group

Site Area of Waste Generation: Tradepoint Atlantic - Parcel A10

Generator Contact: James Calenda, jcalenda@enviroanalyticsgroup.com Telephone 314-620-3056

DETAILED WASTE DESCRIPTION

Waste Name: Parcel A10 - Petroleum Contaminated Soil

Approximate Amount of Waste to be Disposed: 252.6

<input type="checkbox"/> Pounds	<input type="checkbox"/> Weekly
<input checked="" type="checkbox"/> Tons	<input type="checkbox"/> Monthly
<input type="checkbox"/> Cubic Yards	<input checked="" type="checkbox"/> One Time

Physical Characterisitcs: Solid
 Sludge

Method Used to Determine Waste is Non-Hazardous: Laboratory Analysis* Both
 Generator Knowledge

*Attach laboratory analysis results to manifest

Manifest Completed by: Ryan Clancy, ARM Group

Greys Landfill Waste Disposal Manifest

Date: 2/27/2020 Time: 1200

Generator Name: EnviroAnalytics Group

Site Area of Waste Generation: Tradepoint Atlantic - Parcel A10

Generator Contact: James Calenda, jcalenda@enviroanalyticsgroup.com Telephone 314-620-3056

DETAILED WASTE DESCRIPTION

Waste Name: Parcel A10 - Petroleum Contaminated Soil

Approximate Amount of Waste to be Disposed: 374.5

<input type="checkbox"/> Pounds	<input type="checkbox"/> Weekly
<input checked="" type="checkbox"/> Tons	<input type="checkbox"/> Monthly
<input type="checkbox"/> Cubic Yards	<input checked="" type="checkbox"/> One Time

Physical Characterisitcs: Solid
 Sludge

Method Used to Determine Waste is Non-Hazardous: Laboratory Analysis* Both
 Generator Knowledge

*Attach laboratory analysis results to manifest

Manifest Completed by: Ryan Clancy, ARM Group

Supporting Documents – Lab Analytical Reporting and Chain of Custody

Project Name: Enviro Analytics
PSS Project No.: 20020417

February 11, 2020

Yvonne McMahon
ACE Environmental Holdings, LLC
4420 East Eager St.
Baltimore, MD 21205



Reference: PSS Project No: **20020417**
Project Name: Enviro Analytics
Project Location: Sparrows Point Blvd.

Dear Yvonne McMahon:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20020417**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 10, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Enviro Analytics

PSS Project No.: 20020417

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/04/2020 at 04:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20020417-001	T-1	SOIL	02/03/20 14:40
20020417-002	T-2	SOIL	02/03/20 14:24
20020417-003	T-3	SOIL	02/03/20 14:30
20020417-004	L-1	SOIL	02/03/20 13:41

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Enviro Analytics
PSS Project No.: 20020417

Sample ID: T-1	Date/Time Sampled: 02/03/2020 14:40	PSS Sample ID: 20020417-001
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 83.5
TPH-ORO	Analytical Method: SW-846 8015 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-ORO (Oil Range Organics)	ND	mg/kg	20		1	02/05/20	02/05/20 20:52	1070
Surrogate(s)	Recovery		Limits					
<i>o-Terphenyl</i>	91	%	32-148		1	02/05/20	02/05/20 20:52	1070

Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	4.0		1	02/05/20	02/06/20 12:16	1070
Surrogate(s)	Recovery		Limits					
<i>o-Terphenyl</i>	104	%	37-120		1	02/05/20	02/06/20 12:16	1070

Polychlorinated Biphenyls Analytical Method: SW-846 8082 A Preparation Method: SW3550C
Qualifier(s): See Batch 171718 on Case Narrative. Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
PCB-1221	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
PCB-1232	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
PCB-1242	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
PCB-1248	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
PCB-1254	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
PCB-1260	ND	mg/kg	0.060		1	02/05/20	02/05/20 17:20	1029
Surrogate(s)	Recovery		Limits					
<i>Tetrachloro-m-xylene</i>	92	%	42-142		1	02/05/20	02/05/20 17:20	1029
<i>Decachlorobiphenyl</i>	117	%	61-150		1	02/05/20	02/05/20 17:20	1029

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: T-1	Date/Time Sampled: 02/03/2020 14:40	PSS Sample ID: 20020417-001
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 83.5
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Acenaphthylene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Acetophenone	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Anthracene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Atrazine	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
Benzo(a)anthracene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Benzo(a)pyrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Benzo(b)fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Benzo(g,h,i)perylene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Benzo(k)fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Biphenyl (Diphenyl)	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Butyl benzyl phthalate	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
bis(2-chloroethoxy) methane	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
bis(2-chloroethyl) ether	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
bis(2-chloroisopropyl) ether	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
4-Bromophenylphenyl ether	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Di-n-butyl phthalate	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Carbazole	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Caprolactam	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
4-Chloro-3-methyl phenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
4-Chloroaniline	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2-Chloronaphthalene	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2-Chlorophenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Chrysene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Dibenz(a,h)Anthracene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Dibenzofuran	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
3,3-Dichlorobenzidine	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2,4-Dichlorophenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Diethyl phthalate	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Dimethyl phthalate	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2,4-Dimethylphenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.20		1	02/05/20	02/05/20 16:40	1059
2,4-Dinitrophenol	ND	mg/kg	0.20		1	02/05/20	02/05/20 16:40	1059

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: T-1	Date/Time Sampled: 02/03/2020 14:40	PSS Sample ID: 20020417-001
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 83.5
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
2,6-Dinitrotoluene	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
Fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Fluorene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Hexachlorobenzene	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Hexachlorobutadiene	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Hexachlorocyclopentadiene	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
Hexachloroethane	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Isophorone	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2-Methylnaphthalene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
2-Methyl phenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
3&4-Methylphenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Naphthalene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
2-Nitroaniline	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
3-Nitroaniline	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
4-Nitroaniline	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
Nitrobenzene	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2-Nitrophenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
4-Nitrophenol	ND	mg/kg	0.20		1	02/05/20	02/05/20 16:40	1059
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
N-Nitrosodiphenylamine	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Di-n-octyl phthalate	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
Pentachlorophenol	ND	mg/kg	0.080		1	02/05/20	02/05/20 16:40	1059
Phenanthrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Phenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
Pyrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 16:40	1059
Pyridine	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2,4,5-Trichlorophenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059
2,4,6-Trichlorophenol	ND	mg/kg	0.020		1	02/05/20	02/05/20 16:40	1059

Certificate of Analysis

Project Name: Enviro Analytics
PSS Project No.: 20020417

Sample ID: T-2 **Date/Time Sampled: 02/03/2020 14:24** **PSS Sample ID: 20020417-002**
Matrix: SOIL **Date/Time Received: 02/04/2020 16:00** **% Solids SM2540G-11: 86.9**
TPH-ORO Analytical Method: SW-846 8015 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-ORO (Oil Range Organics)	ND	mg/kg	19		1	02/05/20	02/05/20 21:27	1070
Surrogate(s)	Recovery		Limits					
<i>o-Terphenyl</i>	89	%	32-148		1	02/05/20	02/05/20 21:27	1070

Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	3.8		1	02/05/20	02/06/20 14:22	1070
Surrogate(s)	Recovery		Limits					
<i>o-Terphenyl</i>	90	%	37-120		1	02/05/20	02/06/20 14:22	1070

Polychlorinated Biphenyls Analytical Method: SW-846 8082 A Preparation Method: SW3550C
Qualifier(s): See Batch 171718 on Case Narrative. Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
PCB-1221	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
PCB-1232	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
PCB-1242	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
PCB-1248	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
PCB-1254	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
PCB-1260	ND	mg/kg	0.056		1	02/05/20	02/05/20 17:47	1029
Surrogate(s)	Recovery		Limits					
<i>Decachlorobiphenyl</i>	118	%	61-150		1	02/05/20	02/05/20 17:47	1029
<i>Tetrachloro-m-xylene</i>	90	%	42-142		1	02/05/20	02/05/20 17:47	1029

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: T-2 **Date/Time Sampled: 02/03/2020 14:24** **PSS Sample ID: 20020417-002**
Matrix: SOIL **Date/Time Received: 02/04/2020 16:00** **% Solids SM2540G-11: 86.9**

TCL Volatiles plus Oxygenates

Analytical Method: SW-846 8260 B

Preparation Method: 5030

Qualifier(s): See Batch 171807 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.022		1	02/10/20	02/10/20 18:46	1045
tert-Amyl alcohol	ND	mg/kg	0.0056		1	02/10/20	02/10/20 18:46	1045
tert-Amyl ethyl ether	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
tert-Amyl methyl ether	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Benzene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Bromochloromethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Bromodichloromethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Bromoform	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Bromomethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
2-Butanone (MEK)	ND	mg/kg	0.0056		1	02/10/20	02/10/20 18:46	1045
tert-Butyl alcohol	ND	mg/kg	0.0056		1	02/10/20	02/10/20 18:46	1045
tert-Butyl ethyl ether	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Carbon Disulfide	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Carbon tetrachloride	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Chlorobenzene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Chloroethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Chloroform	ND	mg/kg	0.0056		1	02/10/20	02/10/20 18:46	1045
Chloromethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Cyclohexane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Dibromochloromethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,2-Dibromoethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Dichlorodifluoromethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,1-Dichloroethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,2-Dichloroethane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,1-Dichloroethene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
1,2-Dichloropropane	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
trans-1,2-Dichloroethene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045
Diisopropyl ether	ND	mg/kg	0.0011		1	02/10/20	02/10/20 18:46	1045

Certificate of Analysis

Project Name: Enviro Analytics
PSS Project No.: 20020417

Sample ID: T-2 **Date/Time Sampled: 02/03/2020 14:24** **PSS Sample ID: 20020417-002**
Matrix: SOIL **Date/Time Received: 02/04/2020 16:00** **% Solids SM2540G-11: 86.9**
TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Acenaphthylene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Acetophenone	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Anthracene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Atrazine	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
Benzo(a)anthracene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Benzo(a)pyrene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Benzo(b)fluoranthene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Benzo(g,h,i)perylene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Benzo(k)fluoranthene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Biphenyl (Diphenyl)	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Butyl benzyl phthalate	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
bis(2-chloroethoxy) methane	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
bis(2-chloroethyl) ether	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
bis(2-chloroisopropyl) ether	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
4-Bromophenylphenyl ether	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Di-n-butyl phthalate	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Carbazole	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Caprolactam	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
4-Chloro-3-methyl phenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
4-Chloroaniline	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2-Chloronaphthalene	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2-Chlorophenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Chrysene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Dibenz(a,h)Anthracene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Dibenzofuran	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
3,3-Dichlorobenzidine	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2,4-Dichlorophenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Diethyl phthalate	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Dimethyl phthalate	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2,4-Dimethylphenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.19		1	02/05/20	02/05/20 17:08	1059
2,4-Dinitrophenol	ND	mg/kg	0.19		1	02/05/20	02/05/20 17:08	1059

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: T-2	Date/Time Sampled: 02/03/2020 14:24	PSS Sample ID: 20020417-002
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 86.9
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
2,6-Dinitrotoluene	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
Fluoranthene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Fluorene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Hexachlorobenzene	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Hexachlorobutadiene	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Hexachlorocyclopentadiene	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
Hexachloroethane	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Isophorone	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2-Methylnaphthalene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
2-Methyl phenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
3&4-Methylphenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Naphthalene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
2-Nitroaniline	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
3-Nitroaniline	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
4-Nitroaniline	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
Nitrobenzene	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2-Nitrophenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
4-Nitrophenol	ND	mg/kg	0.19		1	02/05/20	02/05/20 17:08	1059
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
N-Nitrosodiphenylamine	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Di-n-octyl phthalate	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
Pentachlorophenol	ND	mg/kg	0.077		1	02/05/20	02/05/20 17:08	1059
Phenanthrene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Phenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
Pyrene	ND	mg/kg	0.0096		1	02/05/20	02/05/20 17:08	1059
Pyridine	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2,4,5-Trichlorophenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059
2,4,6-Trichlorophenol	ND	mg/kg	0.019		1	02/05/20	02/05/20 17:08	1059

Certificate of Analysis

Project Name: Enviro Analytics
PSS Project No.: 20020417

Sample ID: T-3	Date/Time Sampled: 02/03/2020 14:30	PSS Sample ID: 20020417-003
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 81.3
TPH-ORO	Analytical Method: SW-846 8015 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-ORO (Oil Range Organics)	ND	mg/kg	20		1	02/05/20	02/05/20 22:02	1070
Surrogate(s)	Recovery		Limits					
<i>o-Terphenyl</i>	87	%	32-148		1	02/05/20	02/05/20 22:02	1070

Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	4.1		1	02/05/20	02/06/20 12:41	1070
Surrogate(s)	Recovery		Limits					
<i>o-Terphenyl</i>	92	%	37-120		1	02/05/20	02/06/20 12:41	1070

Polychlorinated Biphenyls Analytical Method: SW-846 8082 A Preparation Method: SW3550C
Qualifier(s): See Batch 171718 on Case Narrative. Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
PCB-1221	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
PCB-1232	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
PCB-1242	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
PCB-1248	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
PCB-1254	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
PCB-1260	ND	mg/kg	0.062		1	02/05/20	02/05/20 18:16	1029
Surrogate(s)	Recovery		Limits					
<i>Tetrachloro-m-xylene</i>	89	%	42-142		1	02/05/20	02/05/20 18:16	1029
<i>Decachlorobiphenyl</i>	117	%	61-150		1	02/05/20	02/05/20 18:16	1029

Certificate of Analysis

Project Name: Enviro Analytics
PSS Project No.: 20020417

Sample ID: T-3 **Date/Time Sampled: 02/03/2020 14:30** **PSS Sample ID: 20020417-003**
Matrix: SOIL **Date/Time Received: 02/04/2020 16:00** **% Solids SM2540G-11: 81.3**

TCL Volatiles plus Oxygenates Analytical Method: SW-846 8260 B Preparation Method: 5030

Qualifier(s): See Batch 171807 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.026		1	02/10/20	02/10/20 19:09	1045
tert-Amyl alcohol	ND	mg/kg	0.0064		1	02/10/20	02/10/20 19:09	1045
tert-Amyl ethyl ether	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
tert-Amyl methyl ether	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Benzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Bromochloromethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Bromodichloromethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Bromoform	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Bromomethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
tert-Butyl alcohol	ND	mg/kg	0.0064		1	02/10/20	02/10/20 19:09	1045
2-Butanone (MEK)	ND	mg/kg	0.0064		1	02/10/20	02/10/20 19:09	1045
tert-Butyl ethyl ether	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Carbon Disulfide	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Carbon tetrachloride	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Chlorobenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Chloroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Chloroform	ND	mg/kg	0.0064		1	02/10/20	02/10/20 19:09	1045
Chloromethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Cyclohexane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Dibromochloromethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2-Dibromoethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Dichlorodifluoromethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,1-Dichloroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2-Dichloroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,1-Dichloroethene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2-Dichloropropane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
trans-1,2-Dichloroethene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Diisopropyl ether	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045

Certificate of Analysis

Project Name: Enviro Analytics
PSS Project No.: 20020417

Sample ID: T-3 **Date/Time Sampled: 02/03/2020 14:30** **PSS Sample ID: 20020417-003**
Matrix: SOIL **Date/Time Received: 02/04/2020 16:00** **% Solids SM2540G-11: 81.3**

TCL Volatiles plus Oxygenates Analytical Method: SW-846 8260 B Preparation Method: 5030

Qualifier(s): See Batch 171807 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Ethylbenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
2-Hexanone (MBK)	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Isopropylbenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Methyl Acetate	ND	mg/kg	0.032		1	02/10/20	02/10/20 19:09	1045
Methylcyclohexane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Methylene chloride	ND	mg/kg	0.0064		1	02/10/20	02/10/20 19:09	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Naphthalene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Styrene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Tetrachloroethene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Toluene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,1,1-Trichloroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Trichloroethene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Trichlorofluoromethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045
Vinyl chloride	ND	mg/kg	0.0064		1	02/10/20	02/10/20 19:09	1045
m&p-Xylene	ND	mg/kg	0.0026		1	02/10/20	02/10/20 19:09	1045
o-Xylene	ND	mg/kg	0.0013		1	02/10/20	02/10/20 19:09	1045

Surrogate(s)	Recovery	Limits					
4-Bromofluorobenzene	98 %	81-146	1	02/10/20	02/10/20 19:09	1045	
Dibromofluoromethane	100 %	89-120	1	02/10/20	02/10/20 19:09	1045	
Toluene-D8	102 %	86-116	1	02/10/20	02/10/20 19:09	1045	

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: T-3	Date/Time Sampled: 02/03/2020 14:30	PSS Sample ID: 20020417-003
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 81.3
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Acenaphthylene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Acetophenone	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Anthracene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Atrazine	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
Benzo(a)anthracene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Benzo(a)pyrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Benzo(b)fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Benzo(g,h,i)perylene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Benzo(k)fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Biphenyl (Diphenyl)	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Butyl benzyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
bis(2-chloroethoxy) methane	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
bis(2-chloroethyl) ether	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
bis(2-chloroisopropyl) ether	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
4-Bromophenylphenyl ether	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Di-n-butyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Carbazole	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Caprolactam	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
4-Chloro-3-methyl phenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
4-Chloroaniline	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2-Chloronaphthalene	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2-Chlorophenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Chrysene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Dibenz(a,h)Anthracene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Dibenzofuran	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
3,3-Dichlorobenzidine	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2,4-Dichlorophenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Diethyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Dimethyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2,4-Dimethylphenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.21		1	02/05/20	02/05/20 17:35	1059
2,4-Dinitrophenol	ND	mg/kg	0.21		1	02/05/20	02/05/20 17:35	1059

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: T-3	Date/Time Sampled: 02/03/2020 14:30	PSS Sample ID: 20020417-003
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 81.3
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
2,6-Dinitrotoluene	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
Fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Fluorene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Hexachlorobenzene	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Hexachlorobutadiene	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Hexachlorocyclopentadiene	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
Hexachloroethane	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Isophorone	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2-Methylnaphthalene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
2-Methyl phenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
3&4-Methylphenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Naphthalene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
2-Nitroaniline	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
3-Nitroaniline	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
4-Nitroaniline	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
Nitrobenzene	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2-Nitrophenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
4-Nitrophenol	ND	mg/kg	0.21		1	02/05/20	02/05/20 17:35	1059
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
N-Nitrosodiphenylamine	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Di-n-octyl phthalate	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
Pentachlorophenol	ND	mg/kg	0.082		1	02/05/20	02/05/20 17:35	1059
Phenanthrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Phenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
Pyrene	ND	mg/kg	0.010		1	02/05/20	02/05/20 17:35	1059
Pyridine	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2,4,5-Trichlorophenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059
2,4,6-Trichlorophenol	ND	mg/kg	0.021		1	02/05/20	02/05/20 17:35	1059

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: L-1	Date/Time Sampled: 02/03/2020 13:41	PSS Sample ID: 20020417-004
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 80.2
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Acenaphthylene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Acetophenone	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Anthracene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Atrazine	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
Benzo(a)anthracene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Benzo(a)pyrene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Benzo(b)fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Benzo(g,h,i)perylene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Benzo(k)fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Biphenyl (Diphenyl)	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Butyl benzyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
bis(2-chloroethoxy) methane	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
bis(2-chloroethyl) ether	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
bis(2-chloroisopropyl) ether	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
bis(2-ethylhexyl) phthalate	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
4-Bromophenylphenyl ether	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Di-n-butyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Carbazole	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Caprolactam	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
4-Chloro-3-methyl phenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
4-Chloroaniline	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2-Chloronaphthalene	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2-Chlorophenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
4-Chlorophenyl Phenyl ether	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Chrysene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Dibenz(a,h)Anthracene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Dibenzofuran	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
3,3-Dichlorobenzidine	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2,4-Dichlorophenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Diethyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Dimethyl phthalate	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2,4-Dimethylphenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
4,6-Dinitro-2-methyl phenol	ND	mg/kg	0.21		1	02/05/20	02/06/20 10:27	1059
2,4-Dinitrophenol	ND	mg/kg	0.21		1	02/05/20	02/06/20 10:27	1059

Certificate of Analysis

Project Name: Enviro Analytics

PSS Project No.: 20020417

Sample ID: L-1	Date/Time Sampled: 02/03/2020 13:41	PSS Sample ID: 20020417-004
Matrix: SOIL	Date/Time Received: 02/04/2020 16:00	% Solids SM2540G-11: 80.2
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2,4-Dinitrotoluene	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
2,6-Dinitrotoluene	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
Fluoranthene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Fluorene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Hexachlorobenzene	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Hexachlorobutadiene	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Hexachlorocyclopentadiene	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
Hexachloroethane	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Indeno(1,2,3-c,d)Pyrene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Isophorone	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2-Methylnaphthalene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
2-Methyl phenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
3&4-Methylphenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Naphthalene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
2-Nitroaniline	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
3-Nitroaniline	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
4-Nitroaniline	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
Nitrobenzene	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2-Nitrophenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
4-Nitrophenol	ND	mg/kg	0.21		1	02/05/20	02/06/20 10:27	1059
N-Nitrosodi-n-propyl amine	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
N-Nitrosodiphenylamine	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Di-n-octyl phthalate	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
Pentachlorophenol	ND	mg/kg	0.083		1	02/05/20	02/06/20 10:27	1059
Phenanthrene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Phenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
Pyrene	ND	mg/kg	0.010		1	02/05/20	02/06/20 10:27	1059
Pyridine	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2,4,5-Trichlorophenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059
2,4,6-Trichlorophenol	ND	mg/kg	0.021		1	02/05/20	02/06/20 10:27	1059

Case Narrative

Project Name: Enviro Analytics

PSS Project No.: 20020417

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

Polychlorinated Biphenyls

Batch: 171718

Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified, see QC summary.

Analytical:

TCL Volatiles plus Oxygenates

Batch: 171807

Laboratory control sample exceedance identified; see QC summary. Exceedances meet marginal exceedance criteria & samples N.D. for out of control compound.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 5030

Lab Chronology

Project Name: Enviro Analytics
PSS Project No.: 20020417

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM2540G	T-1	Initial	20020417-001	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	T-2	Initial	20020417-002	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	T-3	Initial	20020417-003	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	L-1	Initial	20020417-004	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	171647-1-BLK	BLK	171647-1-BLK	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	CS1-020320 D	MD	20020401-001 D	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	Sample 1 D	MD	20020415-001 D	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	MW-10 (5-7') D	MD	20020501-002 D	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
	MW-12 (13-15') D	MD	20020501-012 D	S	171647	171647	02/05/2020 11:24	02/05/2020 11:24
SW-846 6020 A	T-1	Initial	20020417-001	W	80283	171761	02/07/2020 12:28	02/07/2020 18:34
	T-2	Initial	20020417-002	W	80283	171761	02/07/2020 12:28	02/07/2020 18:39
	T-3	Initial	20020417-003	W	80283	171761	02/07/2020 12:28	02/07/2020 19:02
	L-1	Initial	20020417-004	W	80283	171761	02/07/2020 12:28	02/07/2020 19:06
	80283-1-BKS	BKS	80283-1-BKS	W	80283	171761	02/07/2020 12:28	02/07/2020 18:08
	80283-1-BLK	BLK	80283-1-BLK	W	80283	171761	02/07/2020 12:28	02/07/2020 18:03
	EOC-C S	MS	20020407-002 S	W	80283	171761	02/07/2020 12:28	02/07/2020 18:17
	EOC-C SD	MSD	20020407-002 S	W	80283	171761	02/07/2020 12:28	02/07/2020 18:21
SW-846 8015 C	MW-11 (22-24') S	MS	20020501-001 S	S	80248	171730	02/05/2020 11:17	02/06/2020 14:22
	MW-11 (22-24') SD	MSD	20020501-001 S	S	80248	171730	02/05/2020 11:17	02/06/2020 14:47
	T-1	Initial	20020417-001	S	80248	171732	02/05/2020 11:17	02/06/2020 12:16
	T-2	Initial	20020417-002	S	80248	171732	02/05/2020 11:17	02/06/2020 14:22
	T-3	Initial	20020417-003	S	80248	171732	02/05/2020 11:17	02/06/2020 12:41
	L-1	Initial	20020417-004	S	80248	171732	02/05/2020 11:17	02/06/2020 14:47
	80248-1-BKS	BKS	80248-1-BKS	S	80248	171732	02/05/2020 11:17	02/06/2020 11:01
	80248-1-BLK	BLK	80248-1-BLK	S	80248	171732	02/05/2020 11:17	02/06/2020 10:36
	80248-1-BSD	BSD	80248-1-BSD	S	80248	171732	02/05/2020 11:17	02/06/2020 11:26
SW-846 8015 C	T-1	Initial	20020417-001	S	80235	171685	02/05/2020 08:30	02/05/2020 20:52
	T-2	Initial	20020417-002	S	80235	171685	02/05/2020 08:30	02/05/2020 21:27
	T-3	Initial	20020417-003	S	80235	171685	02/05/2020 08:30	02/05/2020 22:02
	L-1	Initial	20020417-004	S	80235	171685	02/05/2020 08:30	02/05/2020 22:37
	80235-1-BKS	BKS	80235-1-BKS	S	80235	171685	02/04/2020 14:15	02/05/2020 17:56
	80235-1-BLK	BLK	80235-1-BLK	S	80235	171685	02/04/2020 14:15	02/05/2020 16:47
	80235-1-BSD	BSD	80235-1-BSD	S	80235	171685	02/04/2020 14:15	02/05/2020 19:07
	B-6 S	MS	20012910-006 S	S	80235	171685	02/04/2020 14:15	02/05/2020 17:21
	B-6 SD	MSD	20012910-006 S	S	80235	171685	02/04/2020 14:15	02/05/2020 18:31
SW-846 8082 A	T-1	Initial	20020417-001	S	80241	171718	02/05/2020 09:43	02/05/2020 17:20
	T-2	Initial	20020417-002	S	80241	171718	02/05/2020 09:43	02/05/2020 17:47
	T-3	Initial	20020417-003	S	80241	171718	02/05/2020 09:43	02/05/2020 18:16
	L-1	Initial	20020417-004	S	80241	171718	02/05/2020 09:43	02/05/2020 18:44
	80241-1-BKS	BKS	80241-1-BKS	S	80241	171718	02/05/2020 09:43	02/05/2020 14:30
	80241-1-BLK	BLK	80241-1-BLK	S	80241	171718	02/05/2020 09:43	02/05/2020 14:03
	80241-1-BSD	BSD	80241-1-BSD	S	80241	171718	02/05/2020 09:43	02/05/2020 14:59
	T-3 S	MS	20020417-003 S	S	80241	171718	02/05/2020 09:43	02/05/2020 15:27
	T-3 SD	MSD	20020417-003 S	S	80241	171718	02/05/2020 09:43	02/05/2020 15:55

Lab Chronology

Project Name: Enviro Analytics
 PSS Project No.: 20020417

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8260 B	T-1	Initial	20020417-001	S	80313	171807	02/10/2020 15:16	02/10/2020 18:24
	T-2	Initial	20020417-002	S	80313	171807	02/10/2020 15:16	02/10/2020 18:46
	T-3	Initial	20020417-003	S	80313	171807	02/10/2020 15:16	02/10/2020 19:09
	L-1	Initial	20020417-004	S	80313	171807	02/10/2020 15:16	02/10/2020 19:31
	80313-1-BKS	BKS	80313-1-BKS	S	80313	171807	02/10/2020 15:16	02/10/2020 16:10
	80313-1-BLK	BLK	80313-1-BLK	S	80313	171807	02/10/2020 15:16	02/10/2020 18:02
	T-1 S	MS	20020417-001 S	S	80313	171807	02/10/2020 15:16	02/10/2020 16:32
	T-1 SD	MSD	20020417-001 S	S	80313	171807	02/10/2020 15:16	02/10/2020 16:55
SW-846 8270 C	T-1	Initial	20020417-001	S	80240	171696	02/05/2020 08:08	02/05/2020 16:40
	T-2	Initial	20020417-002	S	80240	171696	02/05/2020 08:08	02/05/2020 17:08
	T-3	Initial	20020417-003	S	80240	171696	02/05/2020 08:08	02/05/2020 17:35
	80240-1-BKS	BKS	80240-1-BKS	S	80240	171696	02/05/2020 08:08	02/05/2020 14:23
	80240-1-BLK	BLK	80240-1-BLK	S	80240	171696	02/05/2020 08:08	02/05/2020 13:56
	80240-1-BSD	BSD	80240-1-BSD	S	80240	171696	02/05/2020 08:08	02/05/2020 14:51
	T-2 S	MS	20020417-002 S	S	80240	171696	02/05/2020 08:08	02/05/2020 15:18
	T-2 SD	MSD	20020417-002 S	S	80240	171696	02/05/2020 08:08	02/05/2020 15:46
	L-1	Initial	20020417-004	S	80240	171736	02/05/2020 08:08	02/06/2020 10:27

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 6020 A

Seq Number: 171761
MB Sample Id: 80283-1-BLK

Matrix: Water
LCS Sample Id: 80283-1-BKS

Prep Method: SW3010A
Date Prep: 02/07/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Arsenic	<0.05000	0.4000	0.3901	98	80-120	mg/L	
Barium	<1.000	2.000	2.117	106	80-120	mg/L	
Cadmium	<0.05000	0.4000	0.3928	98	80-120	mg/L	
Chromium	<0.05000	0.4000	0.4145	104	80-120	mg/L	
Lead	<0.05000	0.4000	0.3993	100	80-120	mg/L	
Mercury	<0.002000	0.01000	0.009790	98	80-120	mg/L	
Selenium	<0.05000	0.4000	0.3888	97	80-120	mg/L	
Silver	<0.05000	0.4000	0.3978	99	80-120	mg/L	

Analytical Method: SW-846 8082 A

Seq Number: 171718
MB Sample Id: 80241-1-BLK

Matrix: Solid
LCS Sample Id: 80241-1-BKS

Prep Method: SW3550C
Date Prep: 02/05/20
LCSD Sample Id: 80241-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
PCB-1016	<0.04970	0.4970	0.4691	94	0.4671	95	60-110	1	25	mg/kg	
PCB-1260	<0.04970	0.4970	0.4973	100	0.4841	99	60-98	1	25	mg/kg	H

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Decachlorobiphenyl	96		115		114		61-150	%
Tetrachloro-m-xylene	88		95		94		42-142	%

Analytical Method: SW-846 8082 A

Seq Number: 171718
Parent Sample Id: 20020417-003

Matrix: Soil
MS Sample Id: 20020417-003 S

Prep Method: SW3550C
Date Prep: 02/05/20
MSD Sample Id: 20020417-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
PCB-1016	<0.06132	0.6132	0.5480	89	0.5438	90	45-130	1	30	mg/kg	
PCB-1260	<0.06132	0.6132	0.5867	96	0.5858	97	30-125	1	30	mg/kg	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Decachlorobiphenyl	111		112		61-150	%
Tetrachloro-m-xylene	88		89		42-142	%

QC Summary

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8015 C

Seq Number: 171685

MB Sample Id: 80235-1-BLK

Matrix: Solid

LCS Sample Id: 80235-1-BKS

Prep Method: SW3550C

Date Prep: 02/04/20

LCSD Sample Id: 80235-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
TPH-ORO (Oil Range Organics)	<16.71	167.1	136.4	82	80.05	96	24-122	16	33	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
o-Terphenyl	74		88		92		32-148	%

Analytical Method: SW-846 8015 C

Seq Number: 171732

MB Sample Id: 80248-1-BLK

Matrix: Solid

LCS Sample Id: 80248-1-BKS

Prep Method: SW3550C

Date Prep: 02/05/20

LCSD Sample Id: 80248-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
TPH-DRO (Diesel Range Organics)	<3.326	33.26	33.22	100	32.80	98	60-108	2	22	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
o-Terphenyl	92		97		95		37-120	%

Project Name Enviro Analytics

PSS Project No.: 20020417

Analytical Method: SW-846 8270 C

Seq Number: 171696

Matrix: Solid

Prep Method: SW3550C

Date Prep: 02/05/20

MB Sample Id: 80240-1-BLK

LCS Sample Id: 80240-1-BKS

LCSD Sample Id: 80240-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acenaphthene	<0.008254	1.321	1.102	83	1.135	85	60-116	2	25	mg/kg	
Acenaphthylene	<0.008254	1.321	1.125	85	1.177	88	61-112	3	25	mg/kg	
Acetophenone	<0.01651	1.321	1.179	89	1.212	91	57-114	2	25	mg/kg	
Anthracene	<0.008254	1.321	1.199	91	1.229	92	66-115	1	25	mg/kg	
Atrazine	<0.06603	1.321	1.089	82	1.178	88	7-109	7	25	mg/kg	
Benzo(a)anthracene	<0.008254	1.321	1.162	88	1.186	89	71-113	1	25	mg/kg	
Benzo(a)pyrene	<0.008254	1.321	0.9809	74	1.042	78	69-118	5	25	mg/kg	
Benzo(b)fluoranthene	<0.008254	1.321	0.9759	74	1.050	79	65-126	7	25	mg/kg	
Benzo(g,h,i)perylene	<0.008254	1.321	0.9485	72	0.9723	73	69-112	1	25	mg/kg	
Benzo(k)fluoranthene	<0.008254	1.321	0.8353	63	0.8791	66	57-129	5	25	mg/kg	
Biphenyl (Diphenyl)	<0.01651	1.321	1.175	89	1.196	90	62-117	1	25	mg/kg	
Butyl benzyl phthalate	<0.01651	1.321	1.262	96	1.319	99	81-111	3	25	mg/kg	
bis(2-chloroethoxy) methane	<0.01651	1.321	1.304	99	1.323	99	56-119	0	25	mg/kg	
bis(2-chloroethyl) ether	<0.01651	1.321	1.148	87	1.205	90	55-107	3	25	mg/kg	
bis(2-chloroisopropyl) ether	<0.01651	1.321	1.150	87	1.204	90	44-103	3	25	mg/kg	
bis(2-ethylhexyl) phthalate	<0.01651	1.321	1.265	96	1.310	98	84-109	2	25	mg/kg	
4-Bromophenylphenyl ether	<0.01651	1.321	1.348	102	1.335	100	63-125	2	25	mg/kg	
Di-n-butyl phthalate	<0.01651	1.321	1.248	94	1.306	98	76-110	4	25	mg/kg	
Carbazole	<0.01651	1.321	1.137	86	1.135	85	58-133	1	25	mg/kg	
Caprolactam	<0.06603	1.321	1.079	82	1.107	83	51-122	1	25	mg/kg	
4-Chloro-3-methyl phenol	<0.01651	1.321	1.191	90	1.200	90	74-119	0	25	mg/kg	
4-Chloroaniline	<0.01651	1.321	0.9119	69	0.9379	70	45-107	1	25	mg/kg	
2-Chloronaphthalene	<0.01651	1.321	1.179	89	1.206	90	56-113	1	25	mg/kg	
2-Chlorophenol	<0.01651	1.321	1.112	84	1.165	87	59-113	4	25	mg/kg	
4-Chlorophenyl Phenyl ether	<0.01651	1.321	1.274	96	1.304	98	62-111	2	25	mg/kg	
Chrysene	<0.008254	1.321	1.181	89	1.214	91	72-114	2	25	mg/kg	
Dibenz(a,h)Anthracene	<0.008254	1.321	0.9865	75	1.008	75	72-110	0	25	mg/kg	
Dibenzofuran	<0.01651	1.321	1.188	90	1.227	92	62-118	2	25	mg/kg	
3,3-Dichlorobenzidine	<0.01651	1.321	1.094	83	1.144	86	66-141	4	25	mg/kg	
2,4-Dichlorophenol	<0.01651	1.321	1.166	88	1.206	90	68-118	2	25	mg/kg	
Diethyl phthalate	<0.01651	1.321	1.228	93	1.275	95	61-113	2	25	mg/kg	
Dimethyl phthalate	<0.01651	1.321	1.173	89	1.230	92	69-109	3	25	mg/kg	
2,4-Dimethylphenol	<0.01651	1.321	1.194	90	1.196	90	57-122	0	25	mg/kg	
4,6-Dinitro-2-methyl phenol	<0.1651	1.321	1.362	103	1.317	99	50-134	4	25	mg/kg	
2,4-Dinitrophenol	<0.1651	1.321	1.263	96	1.200	90	24-144	6	25	mg/kg	
2,4-Dinitrotoluene	<0.06603	1.321	1.253	95	1.244	93	61-124	2	25	mg/kg	
2,6-Dinitrotoluene	<0.06603	1.321	1.254	95	1.233	92	59-124	3	25	mg/kg	
Fluoranthene	<0.008254	1.321	1.250	95	1.282	96	69-119	1	25	mg/kg	
Fluorene	<0.008254	1.321	1.182	89	1.211	91	65-115	2	25	mg/kg	
Hexachlorobenzene	<0.01651	1.321	1.263	96	1.254	94	63-118	2	25	mg/kg	
Hexachlorobutadiene	<0.01651	1.321	1.159	88	1.186	89	55-120	1	25	mg/kg	
Hexachlorocyclopentadiene	<0.06603	1.321	1.376	104	1.322	99	29-138	5	25	mg/kg	
Hexachloroethane	<0.01651	1.321	1.168	88	1.203	90	54-110	2	25	mg/kg	
Indeno(1,2,3-c,d)Pyrene	<0.008254	1.321	1.039	79	1.040	78	60-127	1	25	mg/kg	
Isophorone	<0.01651	1.321	1.086	82	1.100	82	57-116	0	25	mg/kg	
2-Methylnaphthalene	<0.008254	1.321	1.128	85	1.147	86	70-109	1	25	mg/kg	
2-Methyl phenol	<0.01651	1.321	1.143	87	1.192	89	59-118	2	25	mg/kg	
3&4-Methylphenol	<0.01651	1.321	1.167	88	1.194	89	59-113	1	25	mg/kg	
Naphthalene	<0.008254	1.321	1.145	87	1.169	88	59-108	1	25	mg/kg	
2-Nitroaniline	<0.06603	1.321	1.144	87	1.155	86	51-116	1	25	mg/kg	
3-Nitroaniline	<0.06603	1.321	1.049	79	1.113	83	57-111	5	25	mg/kg	

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8270 C

Seq Number: 171696

MB Sample Id: 80240-1-BLK

Matrix: Solid

LCS Sample Id: 80240-1-BKS

Prep Method: SW3550C

Date Prep: 02/05/20

LCSD Sample Id: 80240-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
4-Nitroaniline	<0.06603	1.321	1.183	90	1.221	91	55-125	1	25	mg/kg	
Nitrobenzene	<0.01651	1.321	1.111	84	1.084	81	53-110	4	25	mg/kg	
2-Nitrophenol	<0.01651	1.321	1.156	88	1.148	86	58-124	2	25	mg/kg	
4-Nitrophenol	<0.1651	1.321	1.117	85	1.140	85	51-116	0	25	mg/kg	
N-Nitrosodi-n-propyl amine	<0.01651	1.321	1.235	93	1.239	93	60-98	0	25	mg/kg	
N-Nitrosodiphenylamine	<0.01651	1.321	1.289	98	1.303	98	65-111	0	25	mg/kg	
Di-n-octyl phthalate	<0.06603	1.321	0.9554	72	1.034	77	69-120	7	25	mg/kg	
Pentachlorophenol	<0.06603	1.321	1.233	93	1.186	89	56-124	4	25	mg/kg	
Phenanthrene	<0.008254	1.321	1.179	89	1.224	92	67-117	3	25	mg/kg	
Phenol	<0.01651	1.321	1.101	83	1.093	82	58-114	1	25	mg/kg	
Pyrene	<0.008254	1.321	1.208	91	1.247	93	77-111	2	25	mg/kg	
Pyridine	<0.01651	1.321	0.8759	66	0.9232	69	37-110	4	25	mg/kg	
2,4,5-Trichlorophenol	<0.01651	1.321	1.172	89	1.123	84	64-114	6	25	mg/kg	
2,4,6-Trichlorophenol	<0.01651	1.321	1.204	91	1.187	89	60-125	2	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	85		85		85		32-107	%
2-Fluorophenol	78		78		79		34-113	%
Nitrobenzene-d5	80		79		75		35-123	%
Phenol-d6	84		84		83		34-120	%
Terphenyl-D14	88		86		87		46-154	%
2,4,6-Tribromophenol	82		96		93		31-113	%

Project Name Enviro Analytics

PSS Project No.: 20020417

Analytical Method: SW-846 8270 C

Seq Number: 171696

Parent Sample Id: 20020417-002

Matrix: Soil

MS Sample Id: 20020417-002 S

Prep Method: SW3550C

Date Prep: 02/05/20

MSD Sample Id: 20020417-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acenaphthene	<0.009479	1.517	1.178	78	1.236	81	61-106	4	30	mg/kg	
Acenaphthylene	<0.009479	1.517	1.188	78	1.244	82	60-104	5	30	mg/kg	
Acetophenone	<0.01896	1.517	1.116	74	1.322	87	57-103	16	30	mg/kg	
Anthracene	<0.009479	1.517	1.446	95	1.443	95	68-110	0	30	mg/kg	
Atrazine	<0.07583	1.517	1.379	91	1.375	90	6-106	1	30	mg/kg	
Benzo(a)anthracene	<0.009479	1.517	1.395	92	1.423	93	70-111	1	30	mg/kg	
Benzo(a)pyrene	<0.009479	1.517	1.180	78	1.206	79	71-114	1	30	mg/kg	
Benzo(b)fluoranthene	<0.009479	1.517	1.243	82	1.204	79	68-120	4	30	mg/kg	
Benzo(g,h,i)perylene	<0.009479	1.517	1.139	75	1.154	76	64-117	1	30	mg/kg	
Benzo(k)fluoranthene	<0.009479	1.517	0.9270	61	1.035	68	60-128	11	30	mg/kg	
Biphenyl (Diphenyl)	<0.01896	1.517	1.152	76	1.252	82	61-107	8	30	mg/kg	
Butyl benzyl phthalate	<0.01896	1.517	1.535	101	1.529	100	74-111	1	30	mg/kg	
bis(2-chloroethoxy) methane	<0.01896	1.517	1.216	80	1.403	92	55-109	14	30	mg/kg	
bis(2-chloroethyl) ether	<0.01896	1.517	1.111	73	1.314	86	53-98	16	30	mg/kg	
bis(2-chloroisopropyl) ether	<0.01896	1.517	1.086	72	1.301	85	43-93	17	30	mg/kg	
bis(2-ethylhexyl) phthalate	<0.01896	1.517	1.555	103	1.544	101	75-114	2	30	mg/kg	
4-Bromophenylphenyl ether	<0.01896	1.517	1.555	103	1.572	103	67-114	0	30	mg/kg	
Di-n-butyl phthalate	<0.01896	1.517	1.493	98	1.487	98	72-106	0	30	mg/kg	
Carbazole	<0.01896	1.517	1.371	90	1.392	91	63-132	1	30	mg/kg	
Caprolactam	<0.07583	1.517	1.265	83	1.300	85	51-119	2	30	mg/kg	
4-Chloro-3-methyl phenol	<0.01896	1.517	1.266	83	1.319	87	68-113	5	30	mg/kg	
4-Chloroaniline	<0.01896	1.517	0.9653	64	1.068	70	45-100	9	30	mg/kg	
2-Chloronaphthalene	<0.01896	1.517	1.177	78	1.309	86	56-104	10	30	mg/kg	
2-Chlorophenol	<0.01896	1.517	1.059	70	1.249	82	60-97	16	30	mg/kg	
4-Chlorophenyl Phenyl ether	<0.01896	1.517	1.439	95	1.465	96	61-104	1	30	mg/kg	
Chrysene	<0.009479	1.517	1.426	94	1.424	94	72-114	0	30	mg/kg	
Dibenz(a,h)Anthracene	<0.009479	1.517	1.171	77	1.201	79	69-112	3	30	mg/kg	
Dibenzofuran	<0.01896	1.517	1.284	85	1.354	89	63-109	5	30	mg/kg	
3,3-Dichlorobenzidine	<0.01896	1.517	1.471	97	1.445	95	74-134	2	30	mg/kg	
2,4-Dichlorophenol	<0.01896	1.517	1.090	72	1.235	81	63-109	12	30	mg/kg	
Diethyl phthalate	<0.01896	1.517	1.477	97	1.473	97	60-108	0	30	mg/kg	
Dimethyl phthalate	<0.01896	1.517	1.393	92	1.381	91	64-104	1	30	mg/kg	
2,4-Dimethylphenol	<0.01896	1.517	1.178	78	1.317	87	44-107	11	30	mg/kg	
4,6-Dinitro-2-methyl phenol	<0.1896	1.517	1.639	108	1.658	109	51-130	1	30	mg/kg	
2,4-Dinitrophenol	<0.1896	1.517	1.552	102	1.582	104	12-150	2	30	mg/kg	
2,4-Dinitrotoluene	<0.07583	1.517	1.509	99	1.514	99	61-123	0	30	mg/kg	
2,6-Dinitrotoluene	<0.07583	1.517	1.450	96	1.488	98	58-120	2	30	mg/kg	
Fluoranthene	<0.009479	1.517	1.486	98	1.502	99	69-114	1	30	mg/kg	
Fluorene	<0.009479	1.517	1.335	88	1.353	89	66-106	1	30	mg/kg	
Hexachlorobenzene	<0.01896	1.517	1.477	97	1.488	98	63-114	1	30	mg/kg	
Hexachlorobutadiene	<0.01896	1.517	1.089	72	1.262	83	55-107	14	30	mg/kg	
Hexachlorocyclopentadiene	<0.07583	1.517	1.286	85	1.472	97	36-120	13	30	mg/kg	
Hexachloroethane	<0.01896	1.517	1.110	73	1.331	87	52-99	18	30	mg/kg	
Indeno(1,2,3-c,d)Pyrene	<0.009479	1.517	1.223	81	1.258	83	63-123	2	30	mg/kg	
Isophorone	<0.01896	1.517	1.040	69	1.159	76	57-106	10	30	mg/kg	
2-Methylnaphthalene	<0.009479	1.517	1.089	72	1.195	79	63-102	9	30	mg/kg	
2-Methyl phenol	<0.01896	1.517	1.095	72	1.300	85	60-103	17	30	mg/kg	
3&4-Methylphenol	<0.01896	1.517	1.123	74	1.314	86	58-101	15	30	mg/kg	
Naphthalene	<0.009479	1.517	1.103	73	1.249	82	59-97	12	30	mg/kg	
2-Nitroaniline	<0.07583	1.517	1.312	86	1.362	89	52-109	3	30	mg/kg	
3-Nitroaniline	<0.07583	1.517	1.320	87	1.330	87	59-109	0	30	mg/kg	

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8270 C

Seq Number: 171696

Parent Sample Id: 20020417-002

Matrix: Soil

MS Sample Id: 20020417-002 S

Prep Method: SW3550C

Date Prep: 02/05/20

MSD Sample Id: 20020417-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
4-Nitroaniline	<0.07583	1.517	1.437	95	1.443	95	60-121	0	30	mg/kg	
Nitrobenzene	<0.01896	1.517	1.033	68	1.187	78	52-100	14	30	mg/kg	
2-Nitrophenol	<0.01896	1.517	1.091	72	1.228	81	62-109	12	30	mg/kg	
4-Nitrophenol	<0.1896	1.517	1.413	93	1.464	96	48-114	3	30	mg/kg	
N-Nitrosodi-n-propyl amine	<0.01896	1.517	1.159	76	1.380	91	50-96	18	30	mg/kg	
N-Nitrosodiphenylamine	<0.01896	1.517	1.477	97	1.478	97	64-108	0	30	mg/kg	
Di-n-octyl phthalate	<0.07583	1.517	1.127	74	1.145	75	69-117	1	30	mg/kg	
Pentachlorophenol	<0.07583	1.517	1.597	105	1.642	108	66-114	3	30	mg/kg	
Phenanthrene	<0.009479	1.517	1.414	93	1.408	93	67-115	0	30	mg/kg	
Phenol	<0.01896	1.517	1.040	69	1.204	79	55-106	14	30	mg/kg	
Pyrene	<0.009479	1.517	1.425	94	1.446	95	67-116	1	30	mg/kg	
Pyridine	<0.01896	1.517	0.8425	56	1.023	67	41-92	18	30	mg/kg	
2,4,5-Trichlorophenol	<0.01896	1.517	1.273	84	1.363	90	65-107	7	30	mg/kg	
2,4,6-Trichlorophenol	<0.01896	1.517	1.274	84	1.369	90	62-114	7	30	mg/kg	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
2-Fluorobiphenyl	76		83		32-107	%
2-Fluorophenol	66		79		34-113	%
Nitrobenzene-d5	67		76		35-123	%
Phenol-d6	71		82		34-120	%
Terphenyl-D14	90		91		46-154	%
2,4,6-Tribromophenol	100		100		31-113	%

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8260 B

Seq Number: 171807

Matrix: Solid

Prep Method: SW5030

Date Prep: 02/10/20

MB Sample Id: 80313-1-BLK

LCS Sample Id: 80313-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<0.020	0.060	0.045	75	66-136	mg/kg	
tert-Amyl alcohol	<0.0050	0.060	0.081	135	53-143	mg/kg	
tert-Amyl ethyl ether	<0.0010	0.060	0.077	128	64-131	mg/kg	
tert-Amyl methyl ether	<0.0010	0.060	0.078	130	67-126	mg/kg	H
Benzene	<0.0010	0.060	0.064	107	79-131	mg/kg	
Bromochloromethane	<0.0010	0.060	0.068	113	82-124	mg/kg	
Bromodichloromethane	<0.0010	0.060	0.064	107	81-128	mg/kg	
Bromoform	<0.0010	0.060	0.067	112	75-128	mg/kg	
Bromomethane	<0.0010	0.060	0.064	107	71-135	mg/kg	
2-Butanone (MEK)	<0.0050	0.060	0.047	78	63-135	mg/kg	
tert-Butyl alcohol	<0.0050	0.060	0.071	118	53-142	mg/kg	
tert-Butyl ethyl ether	<0.0010	0.060	0.072	120	69-126	mg/kg	
Carbon Disulfide	<0.0010	0.060	0.063	105	73-134	mg/kg	
Carbon tetrachloride	<0.0010	0.060	0.065	108	73-130	mg/kg	
Chlorobenzene	<0.0010	0.060	0.064	107	80-126	mg/kg	
Chloroethane	<0.0010	0.060	0.063	105	77-133	mg/kg	
Chloroform	<0.0050	0.060	0.062	103	79-125	mg/kg	
Chloromethane	<0.0010	0.060	0.058	97	73-127	mg/kg	
Cyclohexane	<0.0010	0.060	0.060	100	70-126	mg/kg	
1,2-Dibromo-3-chloropropane	<0.0010	0.060	0.059	98	61-127	mg/kg	
Dibromochloromethane	<0.0010	0.060	0.067	112	82-123	mg/kg	
1,2-Dibromoethane	<0.0010	0.060	0.066	110	73-122	mg/kg	
1,2-Dichlorobenzene	<0.0010	0.060	0.064	107	64-125	mg/kg	
1,3-Dichlorobenzene	<0.0010	0.060	0.062	103	65-125	mg/kg	
1,4-Dichlorobenzene	<0.0010	0.060	0.063	105	81-122	mg/kg	
Dichlorodifluoromethane	<0.0010	0.060	0.071	118	62-134	mg/kg	
1,1-Dichloroethane	<0.0010	0.060	0.063	105	80-128	mg/kg	
1,2-Dichloroethane	<0.0010	0.060	0.060	100	81-124	mg/kg	
1,1-Dichloroethene	<0.0010	0.060	0.065	108	75-124	mg/kg	
1,2-Dichloropropane	<0.0010	0.060	0.065	108	77-134	mg/kg	
cis-1,2-Dichloroethene	<0.0010	0.060	0.065	108	79-122	mg/kg	
cis-1,3-Dichloropropene	<0.0010	0.060	0.068	113	71-123	mg/kg	
trans-1,2-Dichloroethene	<0.0010	0.060	0.063	105	79-127	mg/kg	
trans-1,3-Dichloropropene	<0.0010	0.060	0.063	105	68-126	mg/kg	
Diisopropyl ether	<0.0010	0.060	0.062	103	70-128	mg/kg	
Ethylbenzene	<0.0010	0.060	0.063	105	77-123	mg/kg	
2-Hexanone (MBK)	<0.0010	0.060	0.044	73	58-136	mg/kg	
Isopropylbenzene	<0.0010	0.060	0.066	110	78-134	mg/kg	
Methyl Acetate	<0.025	0.060	0.066	110	76-127	mg/kg	
Methylcyclohexane	<0.0010	0.060	0.063	105	73-124	mg/kg	
Methylene chloride	<0.0050	0.060	0.063	105	75-117	mg/kg	
4-Methyl-2-Pentanone (MIBK)	<0.0010	0.060	0.059	98	67-130	mg/kg	
Methyl-t-Butyl Ether	<0.0010	0.060	0.070	117	72-124	mg/kg	
Naphthalene	<0.0010	0.060	0.065	108	27-128	mg/kg	
Styrene	<0.0010	0.060	0.065	108	71-125	mg/kg	
1,1,2,2-Tetrachloroethane	<0.0010	0.060	0.063	105	76-130	mg/kg	
Tetrachloroethene	<0.0010	0.060	0.067	112	72-129	mg/kg	
Toluene	<0.0010	0.060	0.064	107	76-132	mg/kg	
1,2,3-Trichlorobenzene	<0.0010	0.060	0.072	120	35-131	mg/kg	
1,2,4-Trichlorobenzene	<0.0010	0.060	0.066	110	67-114	mg/kg	
1,1,1-Trichloroethane	<0.0010	0.060	0.064	107	77-129	mg/kg	

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8260 B

Seq Number: 171807

Matrix: Solid

Prep Method: SW5030

Date Prep: 02/10/20

MB Sample Id: 80313-1-BLK

LCS Sample Id: 80313-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
1,1,2-Trichloroethane	<0.0010	0.060	0.065	108	77-132	mg/kg	
Trichloroethene	<0.0010	0.060	0.064	107	78-129	mg/kg	
Trichlorofluoromethane	<0.0010	0.060	0.060	100	73-135	mg/kg	
1,1,2-Trichlorotrifluoroethane	<0.0010	0.060	0.064	107	73-129	mg/kg	
Vinyl chloride	<0.0050	0.060	0.061	102	76-138	mg/kg	
m&p-Xylene	<0.0020	0.12	0.13	108	79-121	mg/kg	
o-Xylene	<0.0010	0.060	0.063	105	75-124	mg/kg	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
4-Bromofluorobenzene	98		104		81-146	%	
Dibromofluoromethane	98		98		89-120	%	
Toluene-D8	100		102		86-116	%	

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8260 B

Seq Number: 171807

Parent Sample Id: 20020417-001

Matrix: Soil

MS Sample Id: 20020417-001 S

Prep Method: SW5030

Date Prep: 02/10/20

MSD Sample Id: 20020417-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acetone	<0.025	0.075	0.031	41	0.028	38	26-140	8	30	mg/kg	
tert-Amyl alcohol	<0.0062	0.075	0.10	133	0.092	126	40-124	5	30	mg/kg	X
tert-Amyl ethyl ether	<0.0012	0.075	0.083	111	0.073	100	37-120	10	30	mg/kg	
tert-Amyl methyl ether	<0.0012	0.075	0.085	113	0.078	107	47-118	5	30	mg/kg	
Benzene	<0.0012	0.075	0.071	95	0.061	84	51-124	12	30	mg/kg	
Bromochloromethane	<0.0012	0.075	0.075	100	0.067	92	57-118	8	30	mg/kg	
Bromodichloromethane	<0.0012	0.075	0.069	92	0.066	90	56-121	2	30	mg/kg	
Bromoform	<0.0012	0.075	0.075	100	0.075	103	35-124	3	30	mg/kg	
Bromomethane	<0.0012	0.075	0.074	99	0.061	84	53-123	16	30	mg/kg	
2-Butanone (MEK)	<0.0062	0.075	0.042	56	0.040	55	39-129	2	30	mg/kg	
tert-Butyl alcohol	<0.0062	0.075	0.094	125	0.086	118	45-125	6	30	mg/kg	
tert-Butyl ethyl ether	<0.0012	0.075	0.079	105	0.071	97	40-124	8	30	mg/kg	
Carbon Disulfide	<0.0012	0.075	0.074	99	0.062	85	29-144	15	30	mg/kg	
Carbon tetrachloride	<0.0012	0.075	0.074	99	0.062	85	51-130	15	30	mg/kg	
Chlorobenzene	<0.0012	0.075	0.067	89	0.065	89	40-125	0	30	mg/kg	
Chloroethane	<0.0012	0.075	0.074	99	0.062	85	45-130	15	30	mg/kg	
Chloroform	<0.0062	0.075	0.069	92	0.062	85	49-128	8	30	mg/kg	
Chloromethane	<0.0012	0.075	0.067	89	0.058	79	41-129	12	30	mg/kg	
Cyclohexane	<0.0012	0.075	0.071	95	0.060	82	40-120	15	30	mg/kg	
1,2-Dibromo-3-chloropropane	<0.0012	0.075	0.077	103	0.072	99	41-125	4	30	mg/kg	
Dibromochloromethane	<0.0012	0.075	0.069	92	0.069	95	51-114	3	30	mg/kg	
1,2-Dibromoethane	<0.0012	0.075	0.069	92	0.070	96	49-118	4	30	mg/kg	
1,2-Dichlorobenzene	<0.0012	0.075	0.067	89	0.066	90	30-119	1	30	mg/kg	
1,3-Dichlorobenzene	<0.0012	0.075	0.065	87	0.065	89	29-117	2	30	mg/kg	
1,4-Dichlorobenzene	<0.0012	0.075	0.064	85	0.063	86	28-119	1	30	mg/kg	
Dichlorodifluoromethane	<0.0012	0.075	0.083	111	0.069	95	48-137	16	30	mg/kg	
1,1-Dichloroethane	<0.0012	0.075	0.070	93	0.060	82	47-132	13	30	mg/kg	
1,2-Dichloroethane	<0.0012	0.075	0.067	89	0.062	85	51-122	5	30	mg/kg	
1,1-Dichloroethene	<0.0012	0.075	0.074	99	0.063	86	51-130	14	30	mg/kg	
1,2-Dichloropropane	<0.0012	0.075	0.071	95	0.064	88	51-119	8	30	mg/kg	
cis-1,2-Dichloroethene	<0.0012	0.075	0.072	96	0.062	85	46-127	12	30	mg/kg	
cis-1,3-Dichloropropene	<0.0012	0.075	0.073	97	0.068	93	46-126	4	30	mg/kg	
trans-1,2-Dichloroethene	<0.0012	0.075	0.072	96	0.061	84	45-126	13	30	mg/kg	
trans-1,3-Dichloropropene	<0.0012	0.075	0.069	92	0.067	92	37-112	0	30	mg/kg	
Diisopropyl ether	<0.0012	0.075	0.069	92	0.060	82	45-127	11	30	mg/kg	
Ethylbenzene	<0.0012	0.075	0.067	89	0.065	89	44-118	0	30	mg/kg	
2-Hexanone (MBK)	<0.0012	0.075	0.043	57	0.041	56	43-121	2	30	mg/kg	
Isopropylbenzene	<0.0012	0.075	0.063	84	0.061	84	37-116	0	30	mg/kg	
Methyl Acetate	<0.031	0.075	0.079	105	0.073	100	47-125	5	30	mg/kg	
Methylcyclohexane	<0.0012	0.075	0.073	97	0.062	85	21-124	13	30	mg/kg	
Methylene chloride	<0.0062	0.075	0.070	93	0.061	84	49-126	10	30	mg/kg	
4-Methyl-2-Pentanone (MIBK)	<0.0012	0.075	0.069	92	0.068	93	43-133	1	30	mg/kg	
Methyl-t-Butyl Ether	<0.0012	0.075	0.078	104	0.070	96	49-117	8	30	mg/kg	
Naphthalene	<0.0012	0.075	0.082	109	0.068	93	10-134	16	30	mg/kg	
Styrene	<0.0012	0.075	0.067	89	0.067	92	37-122	3	30	mg/kg	
1,1,2,2-Tetrachloroethane	<0.0012	0.075	0.069	92	0.067	92	49-128	0	30	mg/kg	
Tetrachloroethene	<0.0012	0.075	0.075	100	0.068	93	36-121	7	30	mg/kg	
Toluene	<0.0012	0.075	0.072	96	0.065	89	47-124	8	30	mg/kg	
1,2,3-Trichlorobenzene	<0.0012	0.075	0.085	113	0.069	95	10-131	17	30	mg/kg	
1,2,4-Trichlorobenzene	<0.0012	0.075	0.074	99	0.066	90	10-122	10	30	mg/kg	
1,1,1-Trichloroethane	<0.0012	0.075	0.073	97	0.063	86	54-126	12	30	mg/kg	

Project Name Enviro Analytics
PSS Project No.: 20020417

Analytical Method: SW-846 8260 B

Seq Number: 171807

Parent Sample Id: 20020417-001

Matrix: Soil

MS Sample Id: 20020417-001 S

Prep Method: SW5030

Date Prep: 02/10/20

MSD Sample Id: 20020417-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,1,2-Trichloroethane	<0.0012	0.075	0.072	96	0.072	99	59-117	3	30	mg/kg	
Trichloroethene	<0.0012	0.075	0.072	96	0.062	85	38-137	12	30	mg/kg	
Trichlorofluoromethane	<0.0012	0.075	0.073	97	0.060	82	54-134	17	30	mg/kg	
1,1,2-Trichlorotrifluoroethane	<0.0012	0.075	0.074	99	0.062	85	52-125	15	30	mg/kg	
Vinyl chloride	<0.0062	0.075	0.067	89	0.055	75	39-158	17	30	mg/kg	
m&p-Xylene	<0.0025	0.15	0.13	87	0.13	87	40-119	0	30	mg/kg	
o-Xylene	<0.0012	0.075	0.067	89	0.064	88	36-125	1	30	mg/kg	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	96		94		81-146	%
Dibromofluoromethane	104		102		89-120	%
Toluene-D8	104		104		86-116	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Sample Receipt Checklist

Project Name: Enviro Analytics

PSS Project No.: 20020417

Client Name	ACE Environmental Holdings, LLC	Received By	Thomas Wingate
Disposal Date	03/10/2020	Date Received	02/04/2020 04:00:00 PM
		Delivered By	Client
		Tracking No	Not Applicable
		Logged In By	Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
Seal(s) Signed / Dated? N/A

Ice Present
Temp (deg C) 5.8
Temp Blank Present No

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Mike Edillon
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 4
Total No. of Containers Received 16

Preservation

Total Metals (pH<2) N/A
Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A
Do VOA vials have zero headspace? N/A
624 VOC (Rcvd at least one unpreserved VOA vial) N/A
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

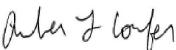
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 02/04/2020

PM Review and Approval:



Amber Confer
Page 41 of 41

Date: 02/05/2020

Supporting Documents – UST Registration Form