

PHASE II INVESTIGATION REPORT

AREA B: PARCEL B9
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic, has completed a Phase II Investigation of a portion of the Tradepoint Atlantic property (formerly Sparrows Point Terminal, LLC) that has been designated as Area B: Parcel B9 (the Site). Parcel B9 is comprised of 7.1 acres of the approximately 3,100-acre former steel making facility (**Figure 1**). Historically, the Site contained the Pennwood Power Plant, which produced electricity for the Bethlehem Steel facility. The Site is bounded to the south by the former Sinter Plant, to the east by the Pennwood Canal, to the north by the former Pennwood Storage Tank Farm (on the property area designated as Parcel B19), and to the north and west by various facilities in the former Blast Furnace Area. The Site is bordered directly on all sides by the property area designated as Parcel B5.

The Phase II Investigation was performed in accordance with procedures outlined in the approved Phase II Investigation Work Plan for Area B: Parcel B9. This Work Plan (Revision 0 dated March 25, 2020) and an associated Comment Response Letter (dated April 30, 2020) were collectively approved by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) via email on May 6, 2020. The Work Plan was implemented in compliance with requirements pursuant to the following:

- Administrative Consent Order (ACO) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the MDE effective September 12, 2014; and
- Settlement Agreement and Covenant Not to Sue (SA) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the USEPA effective November 25, 2014.

Parcel B9 is part of the acreage that was removed (Carveout Area) from inclusion in the Multimedia Consent Decree between Bethlehem Steel Corporation, the USEPA, and the MDE (effective October 8, 1997) as documented in correspondence received from the USEPA on September 12, 2014. Based on this agreement, the USEPA determined that no further investigation or corrective measures will be required under the terms of the Consent Decree for the Carveout Area. However, the SA reflects that the property within the Carveout Area will remain subject to the USEPA's Resource Conservation and Recovery Act (RCRA) Corrective Action authorities.

An application to enter the full Tradepoint Atlantic property (3,100 acres) into the MDE's Voluntary Cleanup Program (MDE-VCP) was submitted to the MDE and delivered on June 27, 2014. The property's current and anticipated future use is Tier 3 (Industrial), and plans for the property include demolition and redevelopment over the next several years.

1.1. SITE HISTORY

From the late 1800s until 2012, the production and manufacturing of steel was conducted at Sparrows Point. Iron and steel production operations and processes at Sparrows Point included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steel making operations at Sparrows Point ceased in fall 2012.

Historically, the Site contained the Pennwood Power Plant, which produced electricity for the Bethlehem Steel facility. The Pennwood Canal, a man-made channel that served as a source of cooling water for the Pennwood Power Plant, connects Old Road Bay to the former plant. During the Phase I Environmental Site Assessment (ESA) site visit completed by Weaver Boos in 2014, the Pennwood Power Plant contained large out-of-service equipment, with observed surface staining on and below the equipment. Past flooding (at least one previous incident) caused water to pool on the equipment room floor and drain to the adjacent Pennwood Canal. According to Weaver Boos, it is unlikely that the flooding of the Pennwood Power Plant resulted in a significant release, and the powerhouse and canal sediments were not classified as a Recognized Environmental Condition (REC).

A 10,000-gallon lubricating oil underground storage tank (UST) was reportedly closed in place at the Pennwood Power Plant between 1989 and 1990 according to the Phase I ESA. The Pennwood Power Plant underwent demolition and backfilling during late-2018 and early-2019. A site visit was completed by ARM personnel on December 20, 2019, at which time all demolition materials had been removed and the Site had been regraded.

1.2. OBJECTIVES

The objective of this Phase II Investigation was to characterize the nature and extent of contamination at the Site. A summary table of the site investigation locations, including the sample identification numbers and the analyses performed, is provided as **Appendix A**. This report includes a summary of the work performed, including the environmental setting, site investigation methods, analytical results and data usability assessment, and findings and recommendations.

As specified in the approved Parcel B9 Work Plan, groundwater at the Site was previously investigated as described in the Area B Groundwater Investigation Work Plan (Revision 3 dated October 6, 2015). The Area B Groundwater Phase II Investigation Report (Revision 0 dated September 30, 2016) was submitted to the agencies and discusses the detailed findings of the groundwater investigation. A brief review of the findings for relevant groundwater samples has been included in this Parcel B9 Phase II Investigation Report.

2.0 ENVIRONMENTAL SETTING

2.1. LAND USE AND SURFACE FEATURES

The Tradepoint Atlantic property consists of the former Sparrows Point steel mill. According to the Phase I ESA prepared by Weaver Boos dated May 19, 2014, the property is zoned Manufacturing Heavy-Industrial Major (MH-IM). Surrounding property zoning classifications (beyond Tradepoint Atlantic) include the following: Manufacturing Light (ML); Resource Conservation (RC); Density Residential (DR); Business Roadside (BR); Business Major (BM); Business Local (BL); and Residential Office (RO). Light industrial and commercial properties are located northeast of the property and northwest of the property across Bear Creek. Residential areas of Edgemere and Fort Howard are located northeast of the property across Jones Creek and to the southeast across Old Road Bay, respectively. Residential and commercial areas of Dundalk are located northwest of the property across Bear Creek.

The Site is relatively flat, except for steep slopes leading down into the Pennwood Canal along the eastern perimeter of the Site. Excluding the areas immediately surrounding the Pennwood Canal, the entire parcel is situated at approximately 12 feet above mean sea level (amsl). According to Figure B-2 of the Stormwater Pollution Prevention Plan (SWPPP) Revision 8 dated April 30, 2020, surface water runoff from the Site is conveyed to the east and is discharged into Old Road Bay through National Pollutant Discharge Elimination System (NPDES) permitted Outfall 001 at the end of the Pennwood Canal.

2.2. REGIONAL GEOLOGY

The Site is located within the Atlantic Coastal Plain Physiographic Province (Coastal Plain). The western boundary of the Coastal Plain is the “Fall Line”, which separates the Coastal Plain from the Piedmont Plateau Province. The Fall Line runs from northeast to southwest along the western boundary of the Chesapeake Bay, passing through Elkton (MD), Havre de Grace (MD), Baltimore City (MD), and Laurel (MD). The eastern boundary of the Coastal Plain is the off-shore Continental Shelf.

The unconsolidated sediments beneath the Site belong to the Talbot Formation (Pleistocene), which is then underlain by the Cretaceous formations which comprise the Potomac Group (Patapsco Formation, Arundel Formation, and the Patuxent Formation). The Potomac Group formations are comprised of unconsolidated sediments of varying thicknesses and types, which may be several hundred feet to several thousand feet thick. These unconsolidated formations may overlie deeper Mesozoic and/or Precambrian bedrock. Depth to bedrock is approximately 700 feet within the Site.

2.3. SITE GEOLOGY

Groundcover at the Site is comprised of approximately 81% natural soils and 19% non-native fill materials (i.e., slag), based on the approximate shoreline of the Sparrows Point Peninsula in 1916, as shown on **Figure 2** (adapted from Figure 2-20 in the Description of Current Conditions (DCC) Report prepared by Rust Environment and Infrastructure dated January 1998).

In general, the encountered subsurface geology included natural soils, which included fine-grained sediments (clays and silts) and coarse-grained sediments (sands), as well as non-native fill materials including slag and brick materials of varying sizes. Shallow groundwater was observed in soil cores at depths from 7 to 15 feet below ground surface (bgs) across the Site; however, groundwater was not encountered at every location. Soil boring observation logs are provided in **Appendix B**. All Unified Soil Classification System (USCS) group symbols provided on the attached boring logs are from visual observations, and not from laboratory testing.

3.0 SITE INVESTIGATION

A total of 44 soil samples (from 19 boring locations) were collected for analysis between May 26 and October 12, 2020 as part of the Parcel B9 Phase II Investigation. This Phase II Investigation utilized methods and protocols that followed the procedures included in the Quality Assurance Project Plan (QAPP) dated April 5, 2016 which was approved by the agencies to support the investigation and remediation of the Tradepoint Atlantic property. Information regarding the project organization, field activities and sampling methods, sampling equipment, sample handling and management procedures, the selected laboratory and analytical methods, quality control and quality assurance procedures, investigation-derived waste (IDW) management methods, and reporting requirements are described in detail in the approved Parcel B9 Work Plan and the QAPP.

All site characterization activities were conducted under the property-wide Health and Safety Plan (HASP) provided as Appendix D of the approved Work Plan.

3.1. SAMPLE TARGET IDENTIFICATION

Previous activities within and around the buildings and facilities located on the Tradepoint Atlantic property may have been historical sources of environmental contamination. If present, source areas were identified as targets for sampling through a careful review of historical documents. When a sampling target was identified, a boring was placed at or next to its location using Geographic Information Systems (GIS) software (ArcMap Version 10.6).

Sampling targets included, as applicable, 1) RECs shown on the REC Location Map provided in Weaver Boos' Phase I ESA, 2) additional findings (non-RECs) from the Phase I ESA which were identified as potential environmental concerns, and 3) Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) identified from the DCC Report prepared by Rust Environment and Infrastructure. There were no RECs, SWMUs, or AOCs identified at the Site based on the information provided in the Phase I ESA or DCC Report.

Four sets of historical drawings were also reviewed to identify potential sampling targets for the Site. These drawings included the 5000 Set (Plant Arrangement), the 5100 Set (Plant Index), the 5500 Set (Plant Sewer Lines), and a set of drawings indicating coke oven gas distribution drip leg locations. Drip legs are points throughout the distribution system where coke oven gas condensate was removed from the gas pipelines. The condensate from the drip legs was typically discharged to drums, although it is possible some spilled out of the drums and onto the ground. There were several drip legs identified inside the boundary of Parcel B9.

A summary of the specific drawings covering the Site is presented in **Table 1**. Sampling target locations were identified if the historical drawings depicted industrial activities or a specific feature at a location that may have been a source of environmental contamination that potentially impacted the Site. Based on the review of plant drawings, additional non-REC sampling targets were

identified at the Site, which included the following: Drip Leg #52 & Slurry Overflow Pit, Drip Leg #63, Drip Leg #55 (indirectly with targeted borings in the vicinity), Recycled Oil Tank, Substation/Transformers (PCB-Equipment), Pennwood Power Plant, Demineralizer Process, and Fuel Dept. Storage Building. All of the targeted features have been abandoned and demolished. One additional sample location (B9-019-SB) was added to fill a spatial gap in the southeastern portion of the Site to provide complete coverage. A summary table of the investigation plan, along with the applicable boring identification numbers and the analyses performed, has been provided as **Appendix A**. During the completion of fieldwork, it was necessary to shift several borings from the approved locations given in the Work Plan, primarily due to equipment refusal. **Table 2** provides the identification numbers of the field adjusted borings, the coordinates of the proposed and final locations, and the distance/direction of the field shifts.

The density of soil borings met the requirements set forth in QAPP Worksheet 17 – Sampling Design and Rationale. Parcel B9 contains a total of 7.1 acres. The total area of the Site was evaluated according to the sampling density requirements for areas without engineered barriers. In accordance with the relevant sampling density requirements, a minimum of eight soil borings were required to cover the area without engineered barriers. A total of 19 soil borings were completed during the Phase II Investigation.

3.2. SOIL INVESTIGATION

Continuous core soil borings were advanced at 19 locations across Parcel B9 to assess the presence or absence of soil contamination, and to assess the vertical distribution of any encountered contamination (**Figure 3**). The 19 continuous core soil borings were advanced to a maximum depth of 20 feet bgs using the Geoprobe[®] MC-7 Macrocore soil sampler (surface to 10 feet bgs) and the Geoprobe[®] D-22 Dual-Tube Sampler (depths >10 feet bgs) and/or the Terra Sonic International: TSi 150CC. The sonic drill rig was used at select borings that had previously encountered equipment refusal when using the conventional Geoprobe[®]. At each of the 19 boring locations, each soil core was visually inspected and screened with a hand-held photoionization detector (PID) prior to logging soil types. Soil boring logs have been included as **Appendix B**, and the PID calibration log has been included as **Appendix C**. The USCS group symbols provided on the attached boring logs are based on visual observations (not laboratory testing).

In each boring, one shallow sample was collected from the 0 to 1 foot depth interval. If unsuitable surface cover materials (such as concrete pavement) were present, the first 1 foot of soil beneath this layer was collected as the shallow sample. An underlying sample was collected from the 4 to 5 foot depth interval from each continuous core soil boring, but could be adjusted based on field observations. If the PID or other field observations indicated contamination to exist at a depth greater than 3 feet bgs but less than 9 feet bgs, and above the water table, the sample from the deeper 4 to 5 foot interval was shifted to the alternate depth interval. One additional set of soil samples was also collected from the 9 to 10 foot depth interval if groundwater had not been

encountered. The 10-foot bgs samples were held by the laboratory prior to analysis in accordance with the requirements given in the Parcel B9 Work Plan. These project-specific requirements for the analysis of 10-foot bgs samples are further described below. It should be noted that soil samples were not collected from a depth that was below the water table.

Soil sampling activities were conducted in accordance with the procedures and methods referenced in **Field Standard Operating Procedure (SOP) Numbers 008, 009, 012, and 013** provided in Appendix A of the QAPP. Sample containers, preservatives, and holding times for the sample analyses are listed in the QAPP Worksheet 19 & 30 – Sample Containers, Preservation, and Holding Times. Down-hole soil sampling equipment was decontaminated after soil sampling had been concluded at each location, according to the procedures and methods referenced in **Field SOP Number 016** provided in Appendix A of the QAPP.

Each soil sample collected during this investigation was submitted to Pace Analytical Services, Inc. (PACE) for analysis. As stated above, the 10-foot bgs samples were held prior to analysis in accordance with the Parcel B9 Work Plan requirements. Excluding these deep samples, the remaining soil samples were analyzed for Target Compound List (TCL) semi-volatile organic compounds (SVOCs) via USEPA Method 8270, Oil & Grease via USEPA Method 9071, total petroleum hydrocarbon (TPH) diesel range organics (DRO) and gasoline range organics (GRO) via USEPA Method 8015, Target Analyte List (TAL) Metals via USEPA Methods 6010 and 7471, hexavalent chromium via USEPA Method 7196, and cyanide via USEPA Method 9012. Shallow soil samples collected across the Site from the 0 to 1 foot bgs interval were analyzed for polychlorinated biphenyls (PCBs) via USEPA Method 8082. Samples from any depth interval with a sustained PID reading of greater than 10 ppm were also analyzed for TCL volatile organic compounds (VOCs) via USEPA Method 8260. The soil samples were also submitted to Alpha Analytical, Inc. (Alpha) for analysis of polynuclear aromatic hydrocarbons (PAHs) via USEPA Method 8270 SIM.

If the PID reading from the 9 to 10 foot bgs interval was less than 10 ppm, all parameters were held by the laboratory pending the analysis of the overlying 0 to 1 and 4 to 5 foot bgs (or field adjusted) samples. If the 9 to 10 foot bgs interval exhibited a sustained PID reading of 10 ppm or greater, the sample was released to be analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, and Oil & Grease. However, the samples for metals and cyanide were still held by the laboratory pending the analysis of the 0 to 1 and 4 to 5 foot bgs interval samples. If the preliminary laboratory results from the 4 to 5 foot bgs interval indicated exceedances of the Project Action Limits (PALs) for any constituents, the held sample from the 9 to 10 foot bgs interval was then released to be analyzed for those constituents that exhibited PAL exceedances in the overlying sample.

Select areas of the Site were subject to special sampling requirements beyond the standard approaches outlined above. These locations are indicated in **Appendix A** and the sampling areas are highlighted on **Figure 3**. Five soil sample locations (B9-007-SB through B9-011-SB), which

targeted the former Substation/Transformers on the northern side of the former Pennwood Power Plant, were analyzed for PCBs at all sample depths due to the potential presence of PCBs associated with this equipment. The 0 to 1 and 4 to 5 foot bgs interval samples were released to be analyzed for PCBs immediately, and soil samples collected from the deepest (9 to 10 foot bgs) sample interval were held for PCBs analysis in accordance with standard procedures. A total of 12 shallow soil samples collected in proximity to the former Pennwood Power Plant (B9-005-SB through B9-014-SB, B9-017-SB, and B9-018-SB) were additionally analyzed for asbestos via the qualitative USEPA Method 600/R-93/116 using Polarized Light Microscopy (PLM).

3.3. MANAGEMENT OF INVESTIGATION-DERIVED WASTE (IDW)

In accordance with **Field SOP Number 005** provided in Appendix A of the QAPP, potentially impacted materials, or IDW, generated during this Phase II Investigation was containerized in 55-gallon (DOT-UN1A2) drums. The types of IDW that were generated during this Phase II Investigation included the following:

- soil cuttings generated from soil borings;
- decontamination fluids; and
- used personal protective equipment

Following the completion of field activities, two composite samples were gathered with aliquots from the Parcel B9 Phase II IDW soil drums for waste characterization. Two composite samples were required because the investigation was performed in two distinct phases (Geoprobe[®] and sonic drill rig) that both generated soil waste from the Site. Following the analysis, the waste soil from both investigation phases was characterized as non-hazardous. A list of all results from the soil waste characterization procedure can be found in **Table 3**. IDW drums containing aqueous materials (including aqueous waste generated during the Parcel B9 Phase II Investigation) were characterized by preparing composite samples from randomly selected drums. The composite samples included aliquots from several individual drums that were chosen as a subset of the aqueous drums being staged on-site at the date of collection. Based on this analysis, the aqueous waste was also characterized as non-hazardous. A list of all results from the aqueous waste characterization procedure can be found in **Table 4**.

The parcel-specific IDW drum log from this Phase II Investigation is included as **Appendix D**. All IDW procedures were carried out in accordance with methods referenced in the QAPP Worksheet 21 – Field SOPs and Appendix A of the QAPP.

4.0 ANALYTICAL RESULTS

4.1. SOIL CONDITIONS

Soil analytical results were screened against PALs established in the property-wide QAPP (or other direct guidance from the agencies; i.e., TPH/Oil & Grease) to determine PAL exceedances. PALs are generally based on the USEPA's Regional Screening Levels (RSLs) for the Composite Worker exposure to soil. The Composite Worker is defined by the USEPA as a long-term receptor exposed during the workday who is a full-time employee that spends most of the workday conducting maintenance activities (which typically involve on-site exposures to surface soils) outdoors.

The analytical results for the detected parameters in soil are summarized and compared to the PALs in **Table 5** (Organics) and **Table 6** (Inorganics). The asbestos qualitative results from the 12 relevant shallow soil samples are presented in **Table 7**. The laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports (DVRs) have been included as electronic attachments. The DVRs contain a glossary of qualifiers for the final flags assigned to individual results in the attached summary tables.

4.1.1. Soil Conditions: Organic Compounds

Table 5 provides a summary of VOCs detected above the laboratory's method detection limits (MDLs) in the soil samples collected from across the Site. Only samples which exhibited PID readings greater than 10 ppm were analyzed for VOCs. There were no VOCs detected above their respective PALs.

Table 5 provides a summary of SVOCs detected above the laboratory's MDLs in the soil samples collected from across the Site. The PALs for relevant PAHs have been adjusted upward based on revised toxicity data published in the USEPA RSL Composite Worker Soil Table. Therefore, any soil exceedances for PAHs are based on the adjusted PALs rather than those presented in the QAPP. Benzo[a]pyrene was the only SVOC detected above its PAL of 2.1 mg/kg with one exceedance (B9-014-SB-5) at a concentration of 5.7 mg/kg. The SVOC PAL exceedance is shown on **Figure 4**.

Shallow soil samples collected across the Site from the 0 to 1 foot bgs interval were analyzed for PCBs. In addition, the soil sample locations that targeted the Substation/Transformers on the northern side of the former Pennwood Power Plant were analyzed for PCBs at all sample depths due to the potential presence of PCBs associated with this equipment. The 0 to 1 and 4 to 5 foot bgs interval samples were released to be analyzed for PCBs immediately, and soil samples collected from the deepest (9 to 10 foot bgs) sample interval were held for PCBs analysis in accordance with standard procedure. **Table 5** provides a summary of PCBs detected above the laboratory's MDLs collected from across the Site. There were no PCBs detected above their respective PALs.

Table 5 provides a summary of the TPH/Oil & Grease detections above the laboratory's MDLs in the soil samples collected from across the Site. There were no PAL exceedances of TPH-DRO or TPH-GRO. Oil & Grease exceeded the PAL of 6,200 mg/kg in three soil samples (B9-005-SB-1, B9-009-SB-1, and B9-014-SB-5) with a maximum detection of 34,900 mg/kg in B9-009-SB-1. The Oil & Grease PAL exceedances are shown on **Figure 5**. Each Oil & Grease exceedance had an underlying soil sample which had a significantly lower concentration of Oil & Grease that did not exceed the PAL. Additionally, no physical evidence of non-aqueous phase liquid (NAPL) was observed in any soil cores completed during this investigation.

4.1.2. Soil Conditions: Inorganic Constituents

Table 6 provides a summary of inorganic constituents detected above the laboratory's MDLs in the soil samples collected from across the Site. Four inorganic constituents (arsenic, lead, manganese, and thallium) were detected above their respective PALs. Arsenic was detected above (or equal to) its PAL of 3 mg/kg in 38 total soil samples analyzed for this constituent with a maximum detection of 56 mg/kg in B9-014-SB-5. Arsenic was by far the most common PAL exceedance. Lead was detected above its PAL of 800 mg/kg in two samples with a maximum detection of 1,790 mg/kg in B9-004-SB-5. Manganese was detected above its PAL of 26,000 mg/kg in one sample (B9-006-SB-8) with a detection of 29,100 mg/kg. Thallium was detected above its PAL of 12 mg/kg in four samples with a maximum detection of 23.1 mg/kg in B9-005-SB-4. The inorganic PAL exceedances are shown on **Figure 6**.

4.1.3. Soil Conditions: Asbestos

Shallow soil samples from select boring locations (identified in **Appendix A** and located within the highlighted area on **Figure 3**) were designated to be analyzed for asbestos due to the former presence and demolition of the Pennwood Power Plant. During field activities, if intact concrete was observed at the ground surface, the asbestos sample was shifted to the first 1-foot interval of underlying soil directly beneath the concrete. The soil samples were analyzed using PLM to determine a qualitative presence/absence of asbestos in the samples.

Table 7 provides a summary of the qualitative asbestos findings among the 12 shallow samples. There were seven samples with detectable asbestos (chrysotile and/or amosite) via the PLM qualitative method. These detections were identified in samples B9-005-SB-1, B9-006-SB-1, B9-007-SB-1, B9-008-SB-1, B9-012-SB-1, B9-013-SB-1, and B9-014-SB-1. A summary of the asbestos detections has been provided on **Figure 7**. Only the samples which were analyzed for asbestos are shown on the figure.

4.1.4. Soil Conditions: Results Summary

Table 5 and **Table 6** provide a summary of the detected organic compounds and inorganics in the soil samples submitted for laboratory analysis, while **Figure 4** through **Figure 6** present the soil sample results that exceeded the PALs. PAL exceedances in soil within Parcel B9 were limited to benzo[a]pyrene, Oil & Grease, and four metals (arsenic, lead, manganese, and thallium). **Table 8** provides a summary of results for all PAL exceedances in soil, including maximum values and detection frequencies. VOCs, PCBs, and TPH-DRO/GRO were not detected above their respective PALs and are not considered to be significant soil contaminants in Parcel B9.

Table 7 provides a summary of the asbestos findings among the 12 shallow samples submitted for analysis, and **Figure 7** presents the qualitative detections (presence/absence) of asbestos. Asbestos was identified in seven samples via the qualitative PLM method.

Lead, PCBs, and TPH/Oil & Grease are subject to special requirements as designated by the agencies: lead results above 10,000 mg/kg are subject to additional delineation (and possible excavation), PCB results above 50 mg/kg are subject to delineation and excavation, and TPH/Oil & Grease results above 6,200 mg/kg should be evaluated for the potential presence and mobility of NAPL in any future development planning:

- There were no locations where detections of lead exceeded 10,000 mg/kg, the designated threshold at which delineation would be required.
- There were no locations where detections of PCBs exceeded 50 mg/kg, the designated threshold at which delineation and excavation would be required.
- There were no PAL exceedances of TPH-DRO/GRO in any of the soil samples collected at the Site. Oil & Grease had three soil PAL exceedances (B9-005-SB-1, B9-009-SB-1, and B9-014-SB-5). In each of the three identified soil borings, the immediate underlying soil samples (B9-005-SB-4, B9-009-SB-6, and B9-014-SB-10) contained significantly lower Oil & Grease concentrations or non-detect results, none of which exceeded the PAL. However, these identified boring locations should be considered for proximity to proposed utilities in any future development plans. No physical evidence of NAPL was observed in any soil cores completed during this investigation.

4.2. GROUNDWATER CONDITIONS – AREA B INVESTIGATION

As specified in the approved Parcel B9 Work Plan, groundwater at the Site was investigated as described in the separate Area B Groundwater Investigation Work Plan (dated October 6, 2015). The Area B Groundwater Phase II Investigation Report (dated September 30, 2016) was submitted to discuss the detailed findings of this groundwater investigation. Groundwater results obtained during the separate investigation were screened against the PALs established in the QAPP (or other direct guidance from the agencies) to determine exceedances. The complete findings from the

groundwater investigation, including detection summary tables and exceedance figures, were provided in the referenced Phase II Investigation Report. A figure summarizing the shallow aqueous PAL exceedances (for all classes of compounds) in the vicinity of Parcel B9 is provided as **Appendix E**. The groundwater analytical results obtained from the intermediate and lower hydrogeologic zones are not relevant for this Parcel B9 Phase II Investigation but can be reviewed in the separate groundwater report.

Regarding the shallow groundwater exceedances, some of the PALs have been updated since the submission of the Area B Groundwater Phase II Investigation Report. In particular, the aqueous screening levels for some PAHs have been adjusted upward. Similar to the evaluation of soil data, the PALs for relevant PAHs have been modified based on revised toxicity data published in the USEPA RSL Resident Tapwater Table. Aqueous PAL exceedances in the shallow groundwater in the vicinity of Parcel B9 consisted of one VOC (chloroform), three SVOCs (benz[a]anthracene, naphthalene, and pentachlorophenol), TPH-DRO, and six total/dissolved metals (beryllium, hexavalent chromium, cobalt, manganese, thallium, and vanadium). For simplicity, the inorganic PAL exceedances shown on the figure do not include duplicate exceedances of total and dissolved metals. If both total and dissolved concentrations exceeded the PAL at a given location, the value for total metals is displayed on the figure.

Each permanent well sampled during the Area B Groundwater Investigation was checked for the potential presence of NAPL using an oil-water interface probe prior to sampling. During these checks, NAPL was not detected in any of the relevant groundwater wells.

Groundwater data were also screened to determine whether any individual sample results, or cumulative results summed by sample location, may exceed the USEPA Vapor Intrusion (VI) Screening Levels (Target Cancer Risk (TCR) of 1E-5 and Target Hazard Quotient (THQ) of 1) as determined by the USEPA's online Vapor Intrusion Screening Level (VISL) Calculator (<https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls>). The aqueous PALs specified in the QAPP are based upon drinking water use, which is not a potential exposure pathway for groundwater at the Site. There were no potential VI risks/hazards identified from the shallow groundwater sampling points located in the vicinity of Parcel B9. Total cyanide had previously been identified as a potential VI hazard in the Area B Groundwater Phase II Investigation Report at location SW-037-MWS, but the screening level for cyanide has since been adjusted upward by the USEPA, eliminating this concern.

5.0 DATA USABILITY ASSESSMENT

The approved property-wide QAPP specified a process for evaluating data usability in the context of meeting project goals. Specifically, the goal of the Phase II Investigation is to determine if potentially hazardous substances or petroleum products (VOCs, SVOCs, PCBs, metals, cyanide, asbestos, or TPH/Oil & Grease) are present in Site media (soil) at concentrations that could pose an unacceptable risk to Site receptors. Individual results are compared to the PALs established in the QAPP (i.e., the USEPA RSLs) or based on other direct guidance from the agencies, to identify exceedances in each environmental medium.

Quality assurance and quality control (QA/QC) samples were collected during field studies to evaluate field/laboratory variability. A summary of QA/QC samples associated with this investigation has been included as **Appendix F**. The following QA/QC samples were required by the QAPP to support the data validation:

- Trip Blank – at a rate of one per cooler with VOC samples per day
 - Soil – VOCs only
- Blind Field Duplicate – at a rate of one per twenty samples
 - Soil – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, PCBs, hexavalent chromium, and cyanide
- Matrix Spike/Matrix Spike Duplicate – at a rate of one per twenty samples
 - Soil – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, PCBs, and hexavalent chromium
- Field Blank and Equipment Blank – at a rate of one per twenty samples
 - Soil – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, hexavalent chromium, and cyanide

The QA/QC samples were collected and analyzed in accordance with the QAPP Worksheet 12 – Measurement Performance Criteria, QAPP Worksheet 20 – Field Quality Control, and QAPP Worksheet 28 – Analytical Quality Control and Corrective Action.

5.1. DATA VERIFICATION

A verification review was performed on documentation generated during sample collection and analysis. The verification included a review of field log books, field data sheets, and Chains of Custody to ensure that all planned samples were collected, and to ensure consistency with the field methods and decontamination procedures specified in the QAPP Worksheet 21 – Field SOPs and Appendix A of the QAPP. In addition, calibration logs were reviewed to ensure that field equipment was calibrated at the beginning of each day and re-checked as needed. The PID calibration log has been provided in **Appendix C**.

The laboratory deliverables were reviewed to ensure that all records specified in the QAPP as well as necessary signatures and dates are present. Sample receipt records were reviewed to ensure that the sample condition upon receipt was noted, and any missing/broken sample containers (if any) were noted and reported according to plan. The data packages were compared to the Chains of Custody to verify that results were provided for all collected samples. The data package case narratives were reviewed to ensure that all exceptions (if any) are described.

5.2. DATA VALIDATION

USEPA Stage 2B data validation was completed for a representative 30% (minimum) of the environmental sample analyses performed by PACE and Alpha and supporting Level IV Data Package information by Environmental Data Quality Inc. (EDQI). The DVRs provided by EDQI have been included as electronic attachments.

Sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. The Stage 2B review was performed as outlined in “Guide for Labeling Externally Validated Laboratory Analytical Data for Superfund Use”, EPA-540-R-08-005. Results have been validated or qualified according to general guidance provided in “USEPA National Functional Guidelines for Inorganic Superfund Data Review (ISM02.1)”, USEPA October 2013. Region III references this guidance for validation requirements. This document specifies procedures for validating data generated for Contract Laboratory Program (CLP) analyses. The approved property-wide QAPP dated April 5, 2016 and the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data.

The PACE-Greensburg (PA) laboratory facility implements quality assurance and reporting requirements through the TNI certification program with the State of Pennsylvania; which is accepted by Maryland. Since late-January 2017, these requirements include the flagging of contaminants with a “B” qualifier when an analyte is detected in an associated laboratory method blank, regardless of the level of the contaminant detected in the sample. A method blank is analyzed at a rate of one blank for each 20 sample analytical batch. The USEPA has previously specified that results flagged with the “B” qualifier do not represent legitimate detections. They have also specified that results flagged with a “JB” qualifier are invalid, and any such results should be revised to display the “B” qualifier only.

Although elevated sample results may be “B” qualified by the laboratory as non-detects (due to low-level blank detections), EDQI corrects any erroneous “B” qualifiers during the data validation procedure to avoid under-reporting analytical detections. EDQI removes the “B” qualifiers for relevant samples according to the guidance given in the table below. Therefore, a result originally flagged with a “B” qualifier in the laboratory certificate may be reported as a legitimate detection without this qualifier. Likewise, a result originally flagged with a “JB” qualifier in the laboratory

certificate may be reported as a “J” qualifier if the erroneous “B” qualifier can be eliminated, but would be reported as a “B” qualified non-detect result if the original “B” qualifier is legitimate.

Blank Result	Sample Result	Qualifying Action
Result less than RL	Result less than RL	Result is Qualified "B"
	Result greater than RL	Remove "B"
Result greater than RL	Result less than Blank Result	Result is Qualified "B"
	Result greater than Blank Result	Remove "B"

RL = Reporting Limit

As directed by EDQI, ARM has reviewed all non-validated laboratory reports (those which were not designated to be reviewed by EDQI), and applied the same validation corrections to any relevant “B” or “JB” qualified results. This review of the non-validated data ensures that any elevated detections of parameters, including those which may exceed the PALs, are not mistakenly reported as non-detect values simply because they did not undergo the formal validation procedure by EDQI. ARM has also revised the non-validated results to eliminate any laboratory-specific, non-standardized qualifiers (L2, 6c, ip, 4c, etc.), which are customarily removed by EDQI during the validation procedure.

5.3. DATA USABILITY

The data were evaluated with respect to the quality control elements of precision, bias, representativeness, comparability, completeness, and sensitivity relative to data quality indicators and performance measurement criteria outlined in QAPP Worksheet 12 – Measurement Performance Criteria. The following discussion details deviation from the performance measurement criteria, and the impact on data quality and usability.

The measurement performance criteria of precision and bias were evaluated in the data validation process as described in the DVRs provided as electronic attachments. Where appropriate, potential limitations in the results have been indicated through final data flags. These flags indicate whether particular data points were quantitative estimates, biased high/low, associated with blank contamination, etc. Individual data flags are provided with the results in the detection summary tables. A qualifier code glossary is included with each DVR provided by EDQI. Particular results may have been marked with the “R” flag if the result was deemed to be unreliable and was not included in any further data evaluation. The analytical soil results that were rejected during data validation are provided in **Table 9**. A discussion of data completeness (the proportion of valid data) is included below.

Representativeness is a measure of how accurately and precisely the data describe the Site conditions. Representativeness of the samples submitted for analysis was ensured by adherence

to standard sampling techniques and protocols, as well as appropriate sample preservation prior to analysis. Sampling was conducted in accordance with the QAPP Worksheet 21 – Field SOPs and Appendix A of the QAPP. Specific Field SOPs applicable to the assessment of representativeness include **Field SOP Numbers 008, 009, 010, 011, 017, and 024**. Review of the field notes and laboratory sample receipt records indicated that sample collection at the Site was representative, with no significant deviations from the SOPs.

Comparability describes the degree of confidence in comparing two sets of data. Comparability is maintained across multiple datasets by the use of consistent sampling and analytical methods across multiple project phases. Comparability of sample results was ensured through the use of approved standard sampling and analysis methods outlined in the QAPP. QA/QC protocols help to maintain the comparability of datasets, and in this case were assessed via blind duplicates, blank samples, and spiked samples, where applicable. No significant deviations from the QAPP were noted in the dataset.

Sensitivity is a determination of whether the analytical methods and quantitation limits will satisfy the requirements of the project. The laboratory reports were reviewed to verify that reporting limits met the quantitation limits for specific analytes provided in QAPP Worksheet #15 – Project Action Limits and Laboratory-Specific Detection/Quantitation Limits. In general, the laboratory reporting limits met the detection and quantitation limits specified in the QAPP.

Completeness is expressed as a ratio of the number of valid data points to the total number of analytical data results. Non-usable (“R” flagged) data results were determined through the data validation process. The approved QAPP specifies that the completeness of data is assessed by professional judgement, but should be greater than or equal to 90%. Data completeness for each compound is provided in **Appendix G**. This evaluation of completeness includes only the representative 30% (minimum) of sample results which were randomly selected for validation.

A total of 14 analytes did not meet the completeness goal of 90% for soils. Among these compounds, 11 acid-extractable SVOCs (2,3,4,6-tetrachlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 2-chlorophenol, 2-methylphenol, 3&4-methylphenol, pentachlorophenol, and phenol) had completeness ratios of 75%. The rejection of some acid-extractable SVOC data has not been uncommon on the property due to the highly alkaline conditions typical of slag fill. Benzaldehyde (80%), hexavalent chromium (25%), and 1,4-dioxane (0%) also had completeness ratios below 90%. The rejection of the results for 1,4-dioxane has not been uncommon for solid matrix data obtained from the Tradepoint Atlantic property. None of these 14 listed compounds with a data completeness ratio below 90% had PAL exceedances in any soil samples. Overall, the soil data can be used as intended and no significant data gaps were identified.

6.0 FINDINGS AND RECOMMENDATIONS

The objective of this Parcel B9 Phase II Investigation was to characterize the nature and extent of contamination at the Site. During the Phase II Investigation, a total of 44 soil samples (from 19 boring locations) were collected and analyzed. The sampling and analysis plan for the parcel was developed to target specific features that represented a potential release of hazardous substances and/or petroleum products to the environment, as well as providing general site coverage. Soil samples were analyzed for VOCs, SVOCs, TPH-DRO/GRO, Oil & Grease, TAL-Metals, hexavalent chromium, cyanide, PCBs, and/or asbestos in accordance with the requirements of the parcel-specific soil sampling plan.

6.1. SOIL

The concentrations of constituents in the soil have been characterized by the Phase II Investigation to provide estimates of exposure point concentrations to support risk assessment.

PCB concentrations are below levels that would warrant delineation and evaluation of a removal remedy (50 mg/kg). Additionally, lead concentrations were below the mandatory delineation threshold (10,000 mg/kg). No further action is required with respect to PCBs or lead at the Site. There were no soil PAL exceedances identified for VOCs, PCBs, or TPH-DRO/GRO, indicating that these compounds are not significant contaminants in soil at the Site. No physical evidence of NAPL was observed in any soil cores completed during this investigation.

PAL exceedances in soil within Parcel B9 were limited to benzo[a]pyrene (one exceedance), arsenic (38 exceedances), lead (two exceedances), manganese (one exceedance), thallium (four exceedances), and Oil & Grease (three exceedances). The single benzo[a]pyrene exceedance was at a concentration of 5.7 mg/kg in B9-014-SB-5. The maximum detections of the inorganic exceedances were 56 mg/kg for arsenic in B9-014-SB-5, 1,790 mg/kg for lead in B9-004-SB-5, 29,100 mg/kg for manganese in B9-006-SB-8, and 23.1 mg/kg for thallium in B9-005-SB-4. Oil & Grease had three PAL exceedances (B9-005-SB-1, B9-009-SB-1, and B9-014-SB-5) with a maximum detection of 34,900 mg/kg in B9-009-SB-1. In each of the three identified soil borings, the immediate underlying soil samples had significantly lower Oil & Grease concentrations or non-detect results, none of which exceeded the PAL.

Select soil samples in the vicinity of the former Pennwood Power Plant were analyzed using PLM to determine a qualitative presence/absence of asbestos in the samples. Asbestos (chrysotile and/or amosite) was identified in seven of the 12 analyzed samples.

6.2. GROUNDWATER

Groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized); therefore, there is no potential for direct human exposure for a Composite Worker. In the event that future construction/excavation leads to a potential Construction Worker exposure to groundwater, health and safety plans should be implemented to limit exposure risk. Findings from the Area B Groundwater Phase II Investigation, which included the groundwater data obtained in the vicinity of Parcel B9, were presented within the Area B Groundwater Phase II Investigation Report (Revision 0 dated September 30, 2016). An aqueous PAL exceedance figure is provided as **Appendix E** to indicate the locations of shallow groundwater exceedances from the preceding groundwater investigation.

The groundwater data were screened to determine whether any cumulative (or individual) sample results exceeded the USEPA VI TCR (carcinogen) or THQ (non-carcinogen) Screening Levels. Among the samples obtained during the separate Area B Groundwater Investigation, there were no potential VI risks/hazards identified from the permanent monitoring wells located in the vicinity of Parcel B9. Total cyanide had previously been identified as a potential VI hazard in the Area B Groundwater Phase II Investigation Report at SW-037-MWS, but the screening level for cyanide has since been adjusted upward by the USEPA, eliminating this concern.

6.3. RECOMMENDATIONS

Sufficient remedial investigation data has been collected to evaluate the nature and extent of possible constituents of concern in Parcel B9. The presence and absence of soil impacts within Parcel B9 have been adequately described and further investigation at the Site is not warranted to characterize overall conditions. Recommendations for the Site are as follows:

- The soil borings with elevated Oil & Grease concentrations (B9-005-SB, B9-009-SB, and B9-014-SB) should be considered for proximity to proposed utilities in any future development plans. If future utilities are proposed in the vicinity of these borings, appropriate protocols for the mitigation of potential product (NAPL) mobility should be specified in a project-specific Response and Development Work Plan (RADWP).
- Asbestos (chrysotile and/or amosite) was identified in seven shallow soil samples. The soil samples were analyzed using PLM to determine a qualitative presence/absence of asbestos. Due to the positive identification of asbestos on the Site, additional quantitative sampling is recommended to further evaluate the significance of the qualitative detections. A sampling Work Plan for the additional asbestos analysis is forthcoming and will be submitted to the agencies for review prior to implementation. If a future development project is proposed in the vicinity of the former Pennwood Power Plant, potential risks from residual asbestos contamination should be evaluated and appropriate mitigative measures specified (if warranted) in a project-specific RADWP.

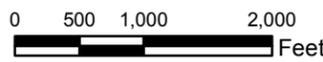
7.0 REFERENCES

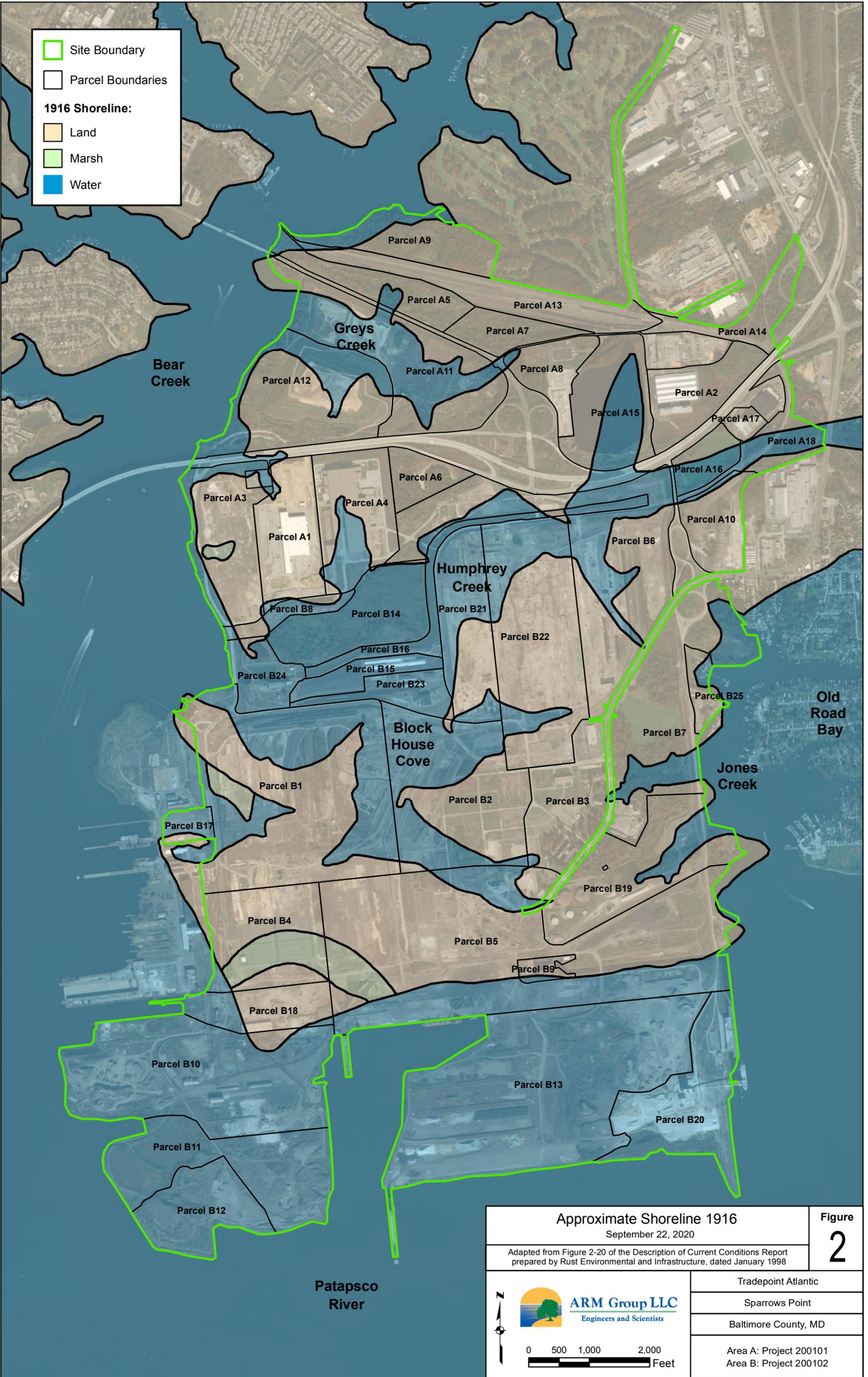
- ARM Group Inc. (2016). *Phase II Investigation Report – Area B Groundwater*. Revision 0. September 30, 2016.
- ARM Group Inc. (2015). *Phase II Investigation Work Plan – Area B Groundwater*. Revision 3. October 6, 2015.
- ARM Group Inc. (2016). *Quality Assurance Project Plan – Sparrows Point Terminal Site*. Revision 3. April 5, 2016.
- ARM Group LLC (2020). *Phase II Investigation Work Plan – Area B: Parcel B9*. Revision 0. March 25, 2020.
- ARM Group LLC (2020). *Phase II Investigation Work Plan Comment Response Letter – Area B: Parcel B9*. April 30, 2020.
- ARM Group LLC (2020). *Stormwater Pollution Prevention Plan (SWPPP)*. Revision 8. April 30, 2020.
- Rust Environment and Infrastructure (1998). *Description of Current Conditions: Bethlehem Steel Corporation*. Final Draft. January 1998.
- USEPA (2017). Vapor Intrusion Screening Level (VISL) Calculator version 3.5 (<https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls>).
- Weaver Boos Consultants (2014). *Phase I Environmental Site Assessment: Former RG Steel Facility*. Final Draft. May 19, 2014.

FIGURES



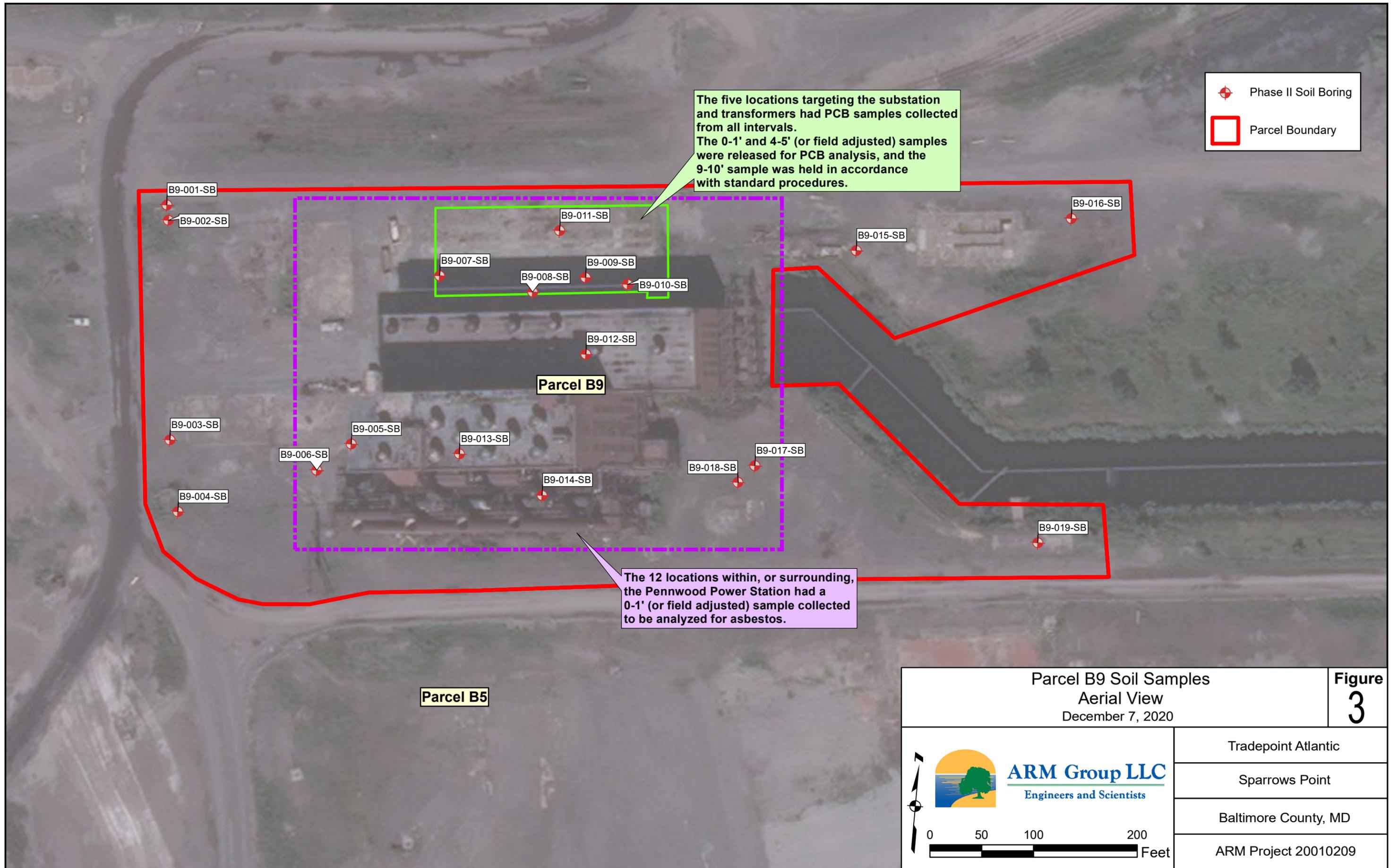
	Site Boundary
	Parcel Boundaries
	Private Property

Tradepoint Atlantic Area A and Area B Parcels September 22, 2020		Figure 1
  ARM Group LLC Engineers and Scientists	Tradepoint Atlantic Sparrows Point Baltimore County, MD	
	0 500 1,000 2,000  Feet	
	Area A: Project 200101 Area B: Project 200102	



Site Boundary
 Parcel Boundaries
1916 Shoreline:
 Land
 Marsh
 Water

Approximate Shoreline 1916 September 22, 2020		Figure 2
Adapted from Figure 2-20 of the Description of Current Conditions Report prepared by Rust Environmental and Infrastructure, dated January 1998		
	 ARM Group LLC Engineers and Scientists	Tradepoint Atlantic Sparrows Point Baltimore County, MD
	Area A: Project 200101 Area B: Project 200102	





 Phase II Soil Boring
 Parcel Boundary

B9-001-SB-1

B9-001-SB-5

B9-002-SB-1.5

B9-002-SB-5

B9-003-SB-1

B9-003-SB-5

B9-004-SB-1

B9-004-SB-5

B9-006-SB-1

B9-006-SB-8

B9-005-SB-1

B9-005-SB-4

B9-007-SB-1

B9-007-SB-5

B9-008-SB-1

B9-008-SB-5

B9-011-SB-2

B9-011-SB-5

B9-009-SB-1

B9-009-SB-6

B9-010-SB-1.5

B9-010-SB-5

B9-012-SB-1

B9-012-SB-5

B9-013-SB-1

B9-013-SB-9

B9-013-SB-10

Parcel B9

B9-014-SB-1

B9-014-SB-5
Benzo[a]pyrene: 5.7

B9-014-SB-10

B9-018-SB-1

B9-018-SB-8

B9-017-SB-1

B9-017-SB-5

B9-015-SB-1

B9-015-SB-5

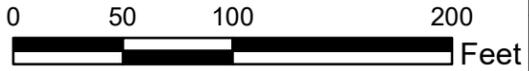
B9-016-SB-1

B9-016-SB-5

B9-019-SB-1

B9-019-SB-5

Parcel B5

Parcel B9 Soil Samples SVOC PAL Exceedances (mg/kg) December 7, 2020		Figure 4
  ARM Group LLC Engineers and Scientists	Tradepoint Atlantic	
	Sparrows Point	
	Baltimore County, MD	
	ARM Project 20010209	
		



 Phase II Soil Boring
 Parcel Boundary

B9-001-SB-1

B9-001-SB-5

B9-002-SB-1.5

B9-002-SB-5

B9-003-SB-1

B9-003-SB-5

B9-004-SB-1

B9-004-SB-5

B9-006-SB-1

B9-006-SB-8

B9-005-SB-1

Oil B Grease: 10,700

B9-005-SB-4

B9-013-SB-1

B9-013-SB-9

B9-013-SB-10

Parcel B9

B9-014-SB-1

B9-014-SB-5

Oil B Grease: 10,700

B9-014-SB-10

B9-007-SB-1

B9-007-SB-5

B9-008-SB-1

B9-008-SB-5

B9-011-SB-2

B9-011-SB-5

B9-009-SB-1

Oil B Grease: 34,900

B9-009-SB-6

B9-010-SB-1.5

B9-010-SB-5

B9-012-SB-1

B9-012-SB-5

B9-018-SB-1

B9-018-SB-8

B9-017-SB-1

B9-017-SB-5

B9-015-SB-1

B9-015-SB-5

B9-016-SB-1

B9-016-SB-5

B9-019-SB-1

B9-019-SB-5

Parcel B5

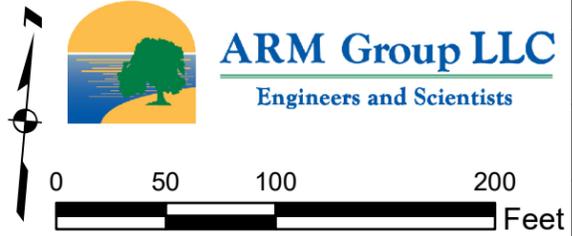


Phase II Soil Boring
 Parcel Boundary

Parcel B5

Parcel B9

Parcel B9 Soil Samples Inorganic PAL Exceedances (mg/kg) December 7, 2020		Figure 6
 ARM Group LLC Engineers and Scientists	Tradepoint Atlantic	
	Sparrows Point	
	Baltimore County, MD	
	ARM Project 20010209	





- Phase II Soil Boring
- Parcel Boundary

Parcel B5

Parcel B9

<p>Parcel B9 Soil Samples Asbestos Detections (Presence/Absence) December 7, 2020</p>		<p>Figure 7</p>
<p>ARM Group LLC Engineers and Scientists</p>	<p>Tradepoint Atlantic</p>	
	<p>Sparrows Point</p>	
	<p>Baltimore County, MD</p>	
	<p>ARM Project 20010209</p>	

TABLES

**Table 1 - Parcel B9
Historical Site Drawing Details**

<u>Set Name</u>	<u>Typical Features Shown</u>	<u>Drawing Number</u>	<u>Original Date Drawn</u>	<u>Latest Revision Date</u>
Plant Arrangement	Roads, water bodies, building/structure footprints, electric lines, above-ground pipelines (e.g.: steam, nitrogen, etc.)	5016	5/28/1958	3/12/1982
		5017	7/7/1958	3/12/1982
Plant Index	Roads, water bodies, demolished buildings/structures, electric lines, above-ground pipelines	5116	<i>Unknown</i>	8/14/2008
		5117	<i>Unknown</i>	8/14/2008
Plant Sewer Lines	Same as above plus trenches, sumps, underground piping (includes pipe materials)	5516	9/1/1958	9/12/2008
		5517	8/28/1959	2/9/1982
Drip Legs	Coke Oven Gas Drip Leg Locations	5886B	<i>Unknown</i>	Sept. 1988

**Table 2 - Parcel B9
Field Shifted Boring Locations**

<u>Location ID</u>	<u>Sample Target</u>	<u>Proposed Location*</u>		<u>Final Location*</u>		<u>Relocation Distance (ft.) & Direction</u>	
		<u>Northing</u>	<u>Easting</u>	<u>Northing</u>	<u>Easting</u>		
B9-001-SB	Drip Leg #52/Slurry Overflow Pit	564,262	1,461,264	564,262	1,461,280	16	E
B9-002-SB	Drip Leg #52/Slurry Overflow Pit	564,254	1,461,269	564,248	1,461,282	14	SE
B9-003-SB	Drip Leg #63	564,015	1,461,293	564,037	1,461,302	24	NE
B9-004-SB	Drip Leg #63	563,986	1,461,296	563,969	1,461,316	26	SE
B9-007-SB	Substation/Transformers (PCB-Equipment)	564,217	1,461,569	564,217	1,461,548	21	W
B9-008-SB	Substation/Transformers (PCB-Equipment)	564,223	1,461,628	564,209	1,461,638	18	SE
B9-010-SB	Substation/Transformers (PCB-Equipment)	564,232	1,461,729	564,225	1,461,729	7	S
B9-011-SB	Substation/Transformers (PCB-Equipment)	564,272	1,461,652	564,271	1,461,659	7	SE
B9-012-SB	Pennwood Power Plant	564,163	1,461,682	564,155	1,461,695	15	SE
B9-013-SB	Pennwood Power Plant	564,072	1,461,590	564,048	1,461,582	25	SW
B9-014-SB	Pennwood Power Plant	564,001	1,461,670	564,016	1,461,665	15	NW
B9-015-SB	Demineralizer Process	564,275	1,461,926	564,277	1,461,946	20	E
B9-019-SB	Parcel Coverage	564,011	1,462,126	564,012	1,462,145	19	E

*Reported northings and eastings are not survey accurate. Coordinates are reported in NAD 1983 Maryland State Plane (US feet).

**Table 3 - Parcel B9
Characterization Results for Solid IDW**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result</u> (mg/L)	<u>TCLP Limit</u> (mg/L)	<u>TCLP</u> <u>Exceedance</u>	<u>Laboratory</u> <u>Flag</u>	<u>LOQ</u> (mg/L)
B9 WASTE 6/4/20	1,1-Dichloroethene	0.05	0.7	no	U	0.05
	1,2-Dichloroethane	0.05	0.5	no	U	0.05
	1,4-Dichlorobenzene	0.5	7.5	no	U	0.5
	2,4,5-Trichlorophenol	5	400	no	U	5
	2,4,6-Trichlorophenol	0.1	2	no	U	0.1
	2,4-Dinitrotoluene	0.1	0.13	no	U	0.1
	2-Butanone (MEK)	0.1	200	no	U	0.1
	2-Methylphenol	2	200	no	U	2
	3&4-Methylphenol(m&p Cresol)	2	200	no	U	2
	Arsenic	0.025	5	no	U	0.025
	Barium	1.1	100	no		0.05
	Benzene	0.05	0.5	no	U	0.05
	Cadmium	0.049	1	no		0.015
	Carbon tetrachloride	0.05	0.5	no	U	0.05
	Chlorobenzene	0.05	100	no	U	0.05
	Chloroform	0.05	6	no	U	0.05
	Chromium	0.0088	5	no	B	0.025
	Hexachlorobenzene	0.1	0.13	no	U	0.1
	Hexachloroethane	0.2	3	no	U	0.2
	Lead	0.5	5	no		0.025
	Mercury	0.001	0.2	no	U	0.001
	Nitrobenzene	0.1	2	no	U	0.1
	Pentachlorophenol	5	100	no	U	5
	Selenium	0.04	1	no	U	0.04
	Silver	0.03	5	no	U	0.03
	Tetrachloroethene	0.05	0.7	no	U	0.05
	Trichloroethene	0.05	0.5	no	U	0.05
	Vinyl chloride	0.05	0.2	no	U	0.05

**Table 3 - Parcel B9
Characterization Results for Solid IDW**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result</u> (mg/L)	<u>TCLP Limit</u> (mg/L)	<u>TCLP</u> <u>Exceedance</u>	<u>Laboratory</u> <u>Flag</u>	<u>LOQ</u> (mg/L)
B9 IDW 11/20/20	1,1-Dichloroethene	0.019	0.7	no	U	0.019
	1,2-Dichloroethane	0.019	0.5	no	U	0.019
	1,4-Dichlorobenzene	0.019	7.5	no	U	0.019
	2,4,5-Trichlorophenol	0.1	400	no	U	0.1
	2,4,6-Trichlorophenol	0.1	2	no	U	0.1
	2,4-Dinitrotoluene	0.1	0.13	no	U	0.1
	2-Butanone (MEK)	0.037	200	no	U	0.037
	2-Methylphenol	0.1	200	no	U	0.1
	3&4-Methylphenol(m&p Cresol)	0.2	200	no	U	0.2
	Arsenic	0.5	5	no	U	0.5
	Barium	10	100	no	U	10
	Benzene	0.019	0.5	no	U	0.019
	Cadmium	0.1	1	no	U	0.1
	Carbon tetrachloride	0.019	0.5	no	U	0.019
	Chlorobenzene	0.019	100	no	U	0.019
	Chloroform	0.019	6	no	U	0.019
	Chromium	0.5	5	no	U	0.5
	Hexachlorobenzene	0.1	0.13	no	U	0.1
	Hexachloroethane	0.1	3	no	U	0.1
	Lead	0.5	5	no	U	0.5
	Mercury	0.02	0.2	no	U	0.02
	Nitrobenzene	0.1	2	no	U	0.1
	Pentachlorophenol	0.5	100	no	U	0.5
	Selenium	0.1	1	no	U	0.1
	Silver	0.5	5	no	U	0.5
	Tetrachloroethene	0.019	0.7	no	U	0.019
	Trichloroethene	0.019	0.5	no	U	0.019
	Vinyl chloride	0.019	0.2	no	U	0.019

U: The analyte was not detected in the sample. This numeric value represents the sample LOQ.

B: The analyte was not detected substantially above the level of the associated method blank or field blank.

TCLP: Toxicity Characteristic Leaching Procedure

LOQ: Limit of Quantitation

**Table 4 - Parcel B9
Characterization Results for Liquid IDW**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result</u> (mg/L)	<u>TCLP Limit</u> (mg/L)	<u>TCLP</u> <u>Exceedance</u>	<u>Laboratory</u> <u>Flag</u>	<u>LOQ</u> (mg/L)
Water IDW 7/1/20	1,1-Dichloroethene	0.001	0.7	no	U	0.001
	1,2-Dichloroethane	0.001	0.5	no	U	0.001
	1,4-Dichlorobenzene	0.001	7.5	no	U	0.001
	2,4,5-Trichlorophenol	0.0025	400	no	U	0.0025
	2,4,6-Trichlorophenol	0.00098	2	no	U	0.00098
	2,4-Dinitrotoluene	0.00098	0.13	no	U	0.00098
	2-Butanone (MEK)	0.01	200	no	U	0.01
	2-Methylphenol	0.00098	200	no	U	0.00098
	3&4-Methylphenol(m&p Cresol)	0.002	200	no	U	0.002
	Arsenic	0.005	5	no	U	0.005
	Benzene	0.00069	0.5	no	J	0.001
	Cadmium	0.0293	1	no		0.003
	Carbon tetrachloride	0.001	0.5	no	U	0.001
	Chlorobenzene	0.001	100	no	U	0.001
	Chloroform	0.001	6	no	U	0.001
	Chromium	0.0047	5	no	J	0.005
	Hexachlorobenzene	0.00098	0.13	no	U	0.00098
	Hexachloroethane	0.00098	3	no	U	0.00098
	Lead	0.005	5	no	U	0.005
	Mercury	0.0002	0.2	no	U	0.0002
	Nitrobenzene	0.00098	2	no	U	0.00098
	Pentachlorophenol	0.0025	100	no	U	0.0025
	Selenium	0.008	1	no	U	0.008
	Silver	0.006	5	no	U	0.006
	Tetrachloroethene	0.001	0.7	no	U	0.001
	Trichloroethene	0.00038	0.5	no	J	0.001
	Vinyl chloride	0.001	0.2	no	U	0.001

**Table 4 - Parcel B9
Characterization Results for Liquid IDW**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result</u> <u>(mg/L)</u>	<u>TCLP Limit</u> <u>(mg/L)</u>	<u>TCLP</u> <u>Exceedance</u>	<u>Laboratory</u> <u>Flag</u>	<u>LOQ</u> <u>(mg/L)</u>
Liquid IDW 10/8/20	1,1-Dichloroethene	0.005	0.7	no	U	0.005
	1,2-Dichloroethane	0.005	0.5	no	U	0.005
	1,4-Dichlorobenzene	0.005	7.5	no	U	0.005
	2,4,5-Trichlorophenol	0.001	400	no	U	0.001
	2,4,6-Trichlorophenol	0.001	2	no	U	0.001
	2,4-Dinitrotoluene	0.001	0.13	no	U	0.001
	2-Butanone (MEK)	0.025	200	no	U	0.025
	2-Methylphenol	0.001	200	no	U	0.001
	4-Methylphenol(p Cresol)	0.001	200	no	U	0.001
	Arsenic	0.005	5	no	U	0.005
	Benzene	0.001	0.5	no	U	0.001
	Cadmium	0.038	1	no		0.005
	Carbon tetrachloride	0.005	0.5	no	U	0.005
	Chlorobenzene	0.005	100	no	U	0.005
	Chloroform	0.005	6	no	U	0.005
	Chromium	0.005	5	no	U	0.005
	Hexachlorobenzene	0.001	0.13	no	U	0.001
	Hexachloroethane	0.001	3	no	U	0.001
	Lead	0.005	5	no	U	0.005
	Mercury	0.001	0.2	no	U	0.001
	Nitrobenzene	0.001	2	no	U	0.001
	Pentachlorophenol	0.005	100	no	U	0.005
	Selenium	0.005	1	no	U	0.005
	Silver	0.005	5	no	U	0.005
	Tetrachloroethene	0.005	0.7	no	U	0.005
	Trichloroethene	0.005	0.5	no	U	0.005
Vinyl chloride	0.001	0.2	no	U	0.001	

**Table 4 - Parcel B9
Characterization Results for Liquid IDW**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result</u> (mg/L)	<u>TCLP Limit</u> (mg/L)	<u>TCLP</u> <u>Exceedance</u>	<u>Laboratory</u> <u>Flag</u>	<u>LOQ</u> (mg/L)
Liquid IDW 11/20/20	1,1-Dichloroethene	0.005	0.7	no	U	0.005
	1,2-Dichloroethane	0.005	0.5	no	U	0.005
	1,4-Dichlorobenzene	0.005	7.5	no	U	0.005
	2,4,5-Trichlorophenol	0.001	400	no	U	0.001
	2,4,6-Trichlorophenol	0.001	2	no	U	0.001
	2,4-Dinitrotoluene	0.001	0.13	no	U	0.001
	2-Butanone (MEK)	0.025	200	no	U	0.025
	2-Methylphenol	0.001	200	no	U	0.001
	4-Methylphenol(p Cresol)	0.001	200	no	U	0.001
	Arsenic	0.005	5	no	U	0.005
	Benzene	0.001	0.5	no	U	0.001
	Cadmium	0.022	1	no		0.005
	Carbon tetrachloride	0.005	0.5	no	U	0.005
	Chlorobenzene	0.005	100	no	U	0.005
	Chloroform	0.005	6	no	U	0.005
	Chromium	0.018	5	no		0.005
	Hexachlorobenzene	0.001	0.13	no	U	0.001
	Hexachloroethane	0.001	3	no	U	0.001
	Lead	0.015	5	no		0.005
	Mercury	0.001	0.2	no	U	0.001
	Nitrobenzene	0.001	2	no	U	0.001
	Pentachlorophenol	0.005	100	no	U	0.005
	Selenium	0.005	1	no	U	0.005
	Silver	0.005	5	no	U	0.005
	Tetrachloroethene	0.005	0.7	no	U	0.005
Trichloroethene	0.005	0.5	no	U	0.005	
Vinyl chloride	0.001	0.2	no	U	0.001	

J: The positive result reported for this analyte is a quantitative estimate below the laboratory LOQ.

U: The analyte was not detected in the sample. The numeric value represents the sample LOQ.

TCLP: Toxicity Characteristic Leaching Procedure

LOQ: Limit of Quantitation

**Table 5 - Parcel B9
Summary of Organics Detected in Soil**

Parameter	Units	PAL	B9-001-SB-1	B9-001-SB-5	B9-002-SB-1.5	B9-002-SB-5	B9-003-SB-1	B9-003-SB-5	B9-004-SB-1	B9-004-SB-5	B9-005-SB-1	B9-005-SB-4	B9-006-SB-1	B9-006-SB-8	B9-007-SB-1*	B9-007-SB-5*
			5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	6/1/2020
Volatile Organic Compounds																
1,4-Dioxane	mg/kg	24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.12 R	0.1 R	0.13 R	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.012 U	0.01 UJ	0.013 U	N/A	N/A
Acetone	mg/kg	670,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.012 U	0.0055 B	0.013 U	N/A	N/A
Carbon disulfide	mg/kg	3,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.002 J	0.0051 UJ	0.0067 U	N/A	N/A
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.012 U	0.01 UJ	0.013 U	N/A	N/A
Toluene	mg/kg	47,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0059 U	0.0051 UJ	0.0067 U	N/A	N/A
Semi-Volatile Organic Compounds[^]																
1,1-Biphenyl	mg/kg	200	0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.078 U	0.022 J	0.037 J	0.73 U	0.071 U	0.072 U	0.074 U	0.7 U	0.08 U
2-Methylnaphthalene	mg/kg	3,000	0.78	0.038	0.25	0.019 J	0.22	0.071	0.21	0.089	0.2	0.034	0.13	0.018	0.062	0.026 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	1.4 U	0.16 U	1.5 U	0.16 U	1.6 U	0.021 J	0.15 U	0.15 U	1.5 U	0.14 U	0.14 R	0.15 U	1.4 U	0.16 U
Acenaphthene	mg/kg	45,000	0.018 J	0.0026 J	0.0098 J	0.026 U	0.069 J	0.0065 J	0.012	0.0039 J	0.028 J	0.0047 J	0.02 J	0.0032 J	0.012 J	0.026 U
Acenaphthylene	mg/kg	45,000	0.034 J	0.023	0.065	0.0058 J	0.34	0.12	0.079	0.064	0.46	0.013	0.056	0.0029 J	0.04	0.026 U
Acetophenone	mg/kg	120,000	0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.078 U	0.061 J	0.042 J	0.73 U	0.071 U	0.072 U	0.074 U	0.7 U	0.08 U
Anthracene	mg/kg	230,000	0.041	0.028	0.046	0.0088 J	0.48	0.097	0.065	0.038	0.34	0.014	0.067	0.0063 J	0.054	0.026 U
Benz[a]anthracene	mg/kg	21	0.21	0.13	0.25	0.048	1.8	0.67	0.35	0.23	1.3	0.099	0.43	0.033	0.33	0.0032 J
Benzaldehyde	mg/kg	120,000	0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.078 U	0.099 J	0.06 J	0.73 U	0.071 U	0.072 U	0.074 U	0.7 U	0.08 U
Benzo[a]pyrene	mg/kg	2.1	0.18	0.092	0.24	0.041	1.3	0.55	0.33	0.2	1.4	0.12	0.36	0.03	0.37	0.026 U
Benzo[b]fluoranthene	mg/kg	21	0.28	0.14	0.34	0.058	2.2	0.74	0.5	0.31	2.3	0.16	0.58	0.038	0.49	0.026 U
Benzo[g,h,i]perylene	mg/kg		0.14	0.053	0.2	0.032	0.82	0.37	0.24	0.12	1.1	0.084	0.28	0.021	0.3	0.026 U
Benzo[k]fluoranthene	mg/kg	210	0.089	0.038	0.082	0.015 J	0.56	0.24	0.12	0.088	0.63	0.04	0.2	0.012	0.13	0.026 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.69 U	0.078 U	0.17 B	0.081 U	0.78 U	0.078 U	0.073 U	0.076 U	0.73 U	0.071 U	0.072 U	0.074 U	0.23 J	0.08 U
Caprolactam	mg/kg	400,000	1.7 U	0.2 U	1.9 U	0.2 U	1.9 U	0.19 U	0.13 J	0.13 J	1.8 U	0.18 U	0.18 U	0.023 J	1.8 U	0.2 U
Carbazole	mg/kg		0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.033 J	0.021 J	0.028 J	0.73 U	0.071 U	0.072 U	0.074 U	0.7 U	0.08 U
Chrysene	mg/kg	2,100	0.22	0.11	0.19	0.037	1.5	0.47	0.34	0.18	1.2	0.086	0.54	0.034	0.27	0.026 U
Dibenz[a,h]anthracene	mg/kg	2.1	0.038	0.018	0.044	0.0075 J	0.23	0.11	0.072	0.045	0.28	0.02	0.077	0.0064 J	0.064	0.026 U
Di-n-butylphthalate	mg/kg	82,000	0.69 U	0.038 B	0.75 U	0.032 B	0.78 U	0.035 B	0.031 B	0.028 B	0.73 U	0.071 U	0.072 U	0.074 U	0.28 J	0.027 JB
Di-n-octylphthalate	mg/kg	8,200	0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.078 U	0.073 U	0.076 U	0.73 U	0.071 U	0.072 U	0.074 U	0.7 U	0.08 U
Fluoranthene	mg/kg	30,000	0.29	0.14	0.2	0.062	3.7	0.74	0.37	0.15	1.2	0.11	0.77	0.045	0.43	0.0021 J
Fluorene	mg/kg	30,000	0.039	0.0081 U	0.016 J	0.0035 J	0.074 J	0.015	0.012	0.0085 U	0.037	0.0039 J	0.017 J	0.0029 J	0.0088 J	0.026 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.15	0.065	0.19	0.029	0.91 J	0.43	0.25	0.15	1.1	0.091	0.29	0.021	0.28	0.026 U
Naphthalene	mg/kg	8.6	0.63	0.05	0.25	0.019 J	0.4	0.14	0.36	0.08	0.31	0.048	0.29	0.013	0.24	0.026 U
N-Nitrosodiphenylamine	mg/kg	470	0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.078 U	0.018 J	0.076 U	0.73 U	0.071 U	0.072 U	0.074 U	0.7 U	0.08 U
Phenanthrene	mg/kg		0.4	0.11	0.22	0.04	1.7	0.33	0.34	0.12	0.44	0.057	0.5	0.044	0.24	0.026 U
Phenol	mg/kg	250,000	0.69 U	0.078 U	0.75 U	0.081 U	0.78 U	0.021 J	0.019 J	0.076 U	0.73 U	0.071 U	0.072 R	0.074 U	0.7 U	0.08 U
Pyrene	mg/kg	23,000	0.27	0.12	0.2	0.053	3	0.6	0.33	0.14	1.4	0.1	0.68	0.038	0.4	0.0018 J
PCBs																
Aroclor 1232	mg/kg	0.72	0.085 U	N/A	0.094 U	N/A	0.096 U	N/A	0.091 U	N/A	0.092 U	N/A	0.091 U	N/A	0.18 U	0.1 U
Aroclor 1248	mg/kg	0.94	0.085 U	N/A	0.094 U	N/A	0.096 U	N/A	0.091 U	N/A	0.092 U	N/A	0.091 U	N/A	0.18 U	0.1 U
Aroclor 1254	mg/kg	0.97	0.084 J	N/A	0.073 J	N/A	0.096 U	N/A	0.091 U	N/A	0.2	N/A	0.091 U	N/A	0.55	0.1 U
Aroclor 1260	mg/kg	0.99	0.045 J	N/A	0.056 J	N/A	0.096 U	N/A	0.091 U	N/A	0.18 JN	N/A	0.023 U	N/A	0.18 U	0.1 U
Aroclor 1262	mg/kg		0.085 U	N/A	0.094 U	N/A	0.096 U	N/A	0.091 U	N/A	0.092 U	N/A	0.091 U	N/A	0.18 U	0.1 U
PCBs (total)	mg/kg	0.97	0.76 U	N/A	0.84 U	N/A	0.87 U	N/A	0.82 U	N/A	0.37 J	N/A	0.82 U	N/A	0.55 J	0.91 U
TPH/Oil & Grease																
Diesel Range Organics	mg/kg	6,200	58.7 J	149 J	66.9 J	27.4 J	98.6 J	65.8 J	87.2 J	84.1 J	338 J	31.1 J	73.5 J	30.1 J	169	56.4
Gasoline Range Organics	mg/kg	6,200	9.8 U	13.6 U	11.5 U	15.2 U	11.3 U	11.8 UJ	14.1 U	8.5 J	15.9 U	17.1 U	11.7 U	16.3 U	10 U	10.5 U
Oil & Grease	mg/kg	6,200	765	239 U	781	493 U	367 J	469 U	190 J	275	10,700	147 J	1,700	222 U	2,280	484 U

Bold indicates detection

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

* Indicates non-validated data

[^] PAH compounds were analyzed via SIM

N/A: This parameter was not analyzed for this sample.

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

J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

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

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Table 5 - Parcel B9
Summary of Organics Detected in Soil**

Parameter	Units	PAL	B9-008-SB-1*	B9-008-SB-5*	B9-009-SB-1*	B9-009-SB-6*	B9-010-SB-1.5	B9-010-SB-5	B9-011-SB-2	B9-011-SB-5	B9-012-SB-1	B9-012-SB-5	B9-013-SB-1*	B9-013-SB-9*	B9-013-SB-10*
			5/27/2020	5/27/2020	10/12/2020	10/12/2020	5/26/2020	5/26/2020	5/26/2020	5/26/2020	5/26/2020	5/26/2020	5/26/2020	5/26/2020	5/27/2020
Volatile Organic Compounds															
1,4-Dioxane	mg/kg	24	N/A	N/A	N/A	0.11 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.11 U	0.1
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	0.011 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0051 J	0.0048 J
Acetone	mg/kg	670,000	N/A	N/A	N/A	0.0075 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.017	0.011
Carbon disulfide	mg/kg	3,500	N/A	N/A	N/A	0.0016 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.005 J	0.0029 J
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	0.011 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.011 U	0.0021 J
Toluene	mg/kg	47,000	N/A	N/A	N/A	0.0054 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0055 U	0.0011 J
Semi-Volatile Organic Compounds^															
1,1-Biphenyl	mg/kg	200	0.14	0.14	18.5 U	0.71 U	0.19	0.14	0.074 U	0.077 U	0.14	0.17	0.76 U	0.078 U	0.072 U
2-Methylnaphthalene	mg/kg	3,000	0.31	0.29	0.3 U	0.02 J	0.14	0.21	0.0072	0.0036 J	0.17	0.18	0.24	0.01	0.011
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	0.14 U	37 U	1.4 U	0.15 R	0.14 R	0.15 U	0.15 U	0.14 R	0.14 R	1.5 U	0.16 U	0.14 U
Acenaphthene	mg/kg	45,000	0.044	0.045	0.3 U	0.037 U	0.038	0.059	0.0024 J	0.0084 UJ	0.042	0.058	0.06	0.0022 J	0.0062 J
Acenaphthylene	mg/kg	45,000	0.2	0.14	0.3 U	0.014 J	0.091	0.13	0.0025 J	0.0018 J	0.11	0.14	0.28	0.0066 J	0.0088
Acetophenone	mg/kg	120,000	0.02 J	0.022 J	18.5 U	0.71 U	0.036 J	0.022 J	0.074 U	0.077 U	0.028 J	0.029 J	0.76 U	0.078 U	0.072 U
Anthracene	mg/kg	230,000	0.28	0.22	0.3 U	0.012 J	0.19	0.32	0.0071 J	0.002 J	0.16	0.2	0.48	0.018	0.095
Benz[a]anthracene	mg/kg	21	0.88	0.65	0.3 U	0.05	0.68	1.5	0.044	0.012	0.68	1	1.3	0.049	0.31
Benzaldehyde	mg/kg	120,000	0.019 J	0.02 J	18.5 U	0.71 U	0.034 J	0.021 J	0.074 R	0.077 R	0.034 J	0.027 J	0.76 U	0.078 U	0.072 U
Benzo[a]pyrene	mg/kg	2.1	0.87	0.64	0.21 J	0.055	0.56	1.5	0.036	0.0082 J	0.56	0.68	1.3	0.053	0.32
Benzo[b]fluoranthene	mg/kg	21	1.2	1.2	0.3 U	0.066	0.99	2	0.063	0.012 J	1.1	1.1	1.7	0.067	0.32
Benzo[g,h,i]perylene	mg/kg		0.51	0.41	0.34	0.045	0.27	0.59	0.034	0.0041 B	0.3	0.35	0.9	0.042	0.15
Benzo[k]fluoranthene	mg/kg	210	0.37	0.27	0.3 U	0.029 J	0.25	0.45	0.02	0.0035 J	0.26	0.28	0.44	0.031	0.14
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.017 J	0.022 J	18.5 U	0.71 U	0.05 B	0.024 B	0.074 U	0.019 B	0.044 B	0.052 B	0.76 U	0.031 J	0.036 J
Caprolactam	mg/kg	400,000	0.18 U	0.022 J	46.5 U	1.8 U	0.039 J	0.027 J	0.19 U	0.031 J	0.032 J	0.031 J	1.9 U	0.19 U	0.18 U
Carbazole	mg/kg		0.11	0.11	18.5 U	0.71 U	0.18	0.11	0.074 U	0.077 U	0.097	0.14	0.19 J	0.078 U	0.081
Chrysene	mg/kg	2,100	0.88	0.66	0.3 U	0.059	0.49	1.2	0.04	0.009 J	0.56	0.63	1.2	0.051	0.24
Dibenz[a,h]anthracene	mg/kg	2.1	0.14	0.11	0.076 J	0.0095 J	0.075	0.15	0.0056 J	0.0012 J	0.08	0.091	0.17	0.0089	0.047
Di-n-butylphthalate	mg/kg	82,000	0.043 J	0.057 J	18.5 U	0.71 U	0.15 B	0.11 B	0.068 B	0.13 B	0.26 J	0.28 J	0.76 U	0.044 J	0.045 J
Di-n-octylphthalate	mg/kg	8,200	0.072 U	0.072 U	18.5 U	0.71 U	0.073 UJ	0.072 U	0.074 U	0.077 U	0.072 U	0.072 U	0.76 U	0.078 U	0.072 U
Fluoranthene	mg/kg	30,000	1.9	2	0.027 J	0.1	1.1	2	0.057	0.012 J	1.3	1.5	3.2	0.11	0.42
Fluorene	mg/kg	30,000	0.038	0.035	0.3 U	0.037 U	0.022	0.041	0.0019 J	0.0011 J	0.021	0.029	0.17	0.0027 J	0.02
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.6	0.48	0.23 J	0.054	0.32	0.68	0.03	0.0044 J	0.34	0.41	0.99	0.051	0.21
Naphthalene	mg/kg	8.6	1.6	2	0.3 U	0.11	0.65	1.4	0.0055 J	0.0059 J	0.68	1.9	0.56	0.046	0.05
N-Nitrosodiphenylamine	mg/kg	470	0.072 U	0.072 U	18.5 U	0.71 U	0.073 U	0.072 U	0.074 U	0.077 U	0.072 U	0.072 U	0.76 U	0.078 U	0.072 U
Phenanthrene	mg/kg		1.5	1.5	0.3 U	0.058	0.63	1.2	0.034	0.0082 J	1.1	1.2	2.7	0.062	0.25
Phenol	mg/kg	250,000	0.072 U	0.072 U	18.5 U	0.71 U	0.073 R	0.072 R	0.074 U	0.077 U	0.072 R	0.072 R	0.76 U	0.078 U	0.025 J
Pyrene	mg/kg	23,000	1.6	1.6	0.41	0.12	1	1.8	0.051	0.011	1.1	1.3	2.6	0.094	0.36
PCBs															
Aroclor 1232	mg/kg	0.72	0.098	0.059 J	0.93 U	0.18 U	0.12 J	0.1	0.019 U	0.097 U	0.1	N/A	0.19 U	N/A	N/A
Aroclor 1248	mg/kg	0.94	0.048 J	0.093 U	0.93 U	0.18 U	0.18 U	0.067 U	0.019 U	0.097 U	0.054 U	N/A	0.19 U	N/A	N/A
Aroclor 1254	mg/kg	0.97	0.091 U	0.093 U	0.22 J	0.06 J	0.18 U	0.091 U	0.019 U	0.097 U	0.09 U	N/A	0.19 U	N/A	N/A
Aroclor 1260	mg/kg	0.99	0.091 U	0.093 U	0.27 J	0.18 U	0.18 U	0.091 U	0.019 U	0.097 U	0.09 U	N/A	0.19 U	N/A	N/A
Aroclor 1262	mg/kg		0.091 U	0.093 U	0.93 U	0.18 U	0.18 U	0.091 U	0.019 U	0.097 U	0.09 U	N/A	0.19 U	N/A	N/A
PCBs (total)	mg/kg	0.97	0.82 U	0.83 U	0.49 J	0.06 J	1.6 U	0.82 U	0.17 U	0.87 U	0.81 U	N/A	1.7 U	N/A	N/A
TPH/Oil & Grease															
Diesel Range Organics	mg/kg	6,200	155	266	2,790	191	115	183	85.1	48.3	137	136	560	22.6	27.5
Gasoline Range Organics	mg/kg	6,200	9.1 U	9.8 U	11.1 U	10.9 U	10.2 U	10.9 U	10.6 U	12 U	9.3 U	11.1 U	9.9 U	11.8 U	18.2 U
Oil & Grease	mg/kg	6,200	283	227	34,900	778	258 J-	260 J-	130 J-	392 J-	835 J-	303 J-	1,110	233 U	440 U

Bold indicates detection

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

* Indicates non-validated data

^ PAH compounds were analyzed via SIM

N/A: This parameter was not analyzed for this sample.

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

J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

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

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Table 5 - Parcel B9
Summary of Organics Detected in Soil**

Parameter	Units	PAL	B9-014-SB-1*	B9-014-SB-5*	B9-014-SB-10*	B9-015-SB-1	B9-015-SB-5	B9-016-SB-1*	B9-016-SB-5*	B9-017-SB-1*	B9-017-SB-5*	B9-018-SB-1*	B9-018-SB-8*	B9-019-SB-1*	B9-019-SB-5*
			5/27/2020	5/27/2020	10/8/2020	5/26/2020	5/26/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020
Volatile Organic Compounds															
1,4-Dioxane	mg/kg	24	N/A	N/A	0.11 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.17 U	N/A	0.11 U
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	0.011 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.017 U	N/A	0.011 U
Acetone	mg/kg	670,000	N/A	N/A	0.011 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0063 J	N/A	0.011
Carbon disulfide	mg/kg	3,500	N/A	N/A	0.0054 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0085 U	N/A	0.0054 U
Cyclohexane	mg/kg	27,000	N/A	N/A	0.011 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.004 J	N/A	0.011 U
Toluene	mg/kg	47,000	N/A	N/A	0.0054 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0085 U	N/A	0.0054 U
Semi-Volatile Organic Compounds^															
1,1-Biphenyl	mg/kg	200	0.74 U	0.81 U	0.088 U	0.08 U	0.077 U	0.95 U	0.081 U	0.14	0.072 U	0.097	0.77 U	0.076 U	0.84 U
2-Methylnaphthalene	mg/kg	3,000	0.092	0.13	0.0087 U	0.074	0.015	0.083	0.0055 J	0.19	0.0072 U	0.25	0.083	0.07	0.097
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	1.5 U	1.6 U	0.18 U	0.16 U	0.15 U	1.9 U	0.16 U	0.15 U	0.14 U	0.15 U	1.5 U	0.15 U	1.7 U
Acenaphthene	mg/kg	45,000	0.03	0.084	0.0087 U	0.0089	0.0078 U	0.007 J	0.0083 U	0.029	0.0072 U	0.023	0.0078 U	0.0072 J	0.0098
Acenaphthylene	mg/kg	45,000	0.073	1.7	0.0038 J	0.022	0.0035 J	0.026	0.0041 J	0.11	0.0012 J	0.062	0.0073 J	0.016	0.007 J
Acetophenone	mg/kg	120,000	0.74 U	0.81 U	0.088 U	0.08 U	0.077 U	0.95 U	0.081 U	0.075 U	0.072 U	0.019 J	0.77 U	0.021 J	0.84 U
Anthracene	mg/kg	230,000	0.18	0.92	0.00078 J	0.039	0.0069 J	0.027	0.0034 J	0.15	0.0072 U	0.1	0.0045 J	0.027	0.014
Benz[a]anthracene	mg/kg	21	0.8	7.7	0.0087 U	0.16	0.032	0.11	0.02	0.49	0.0021 J	0.36	0.044	0.043	0.022
Benzaldehyde	mg/kg	120,000	0.74 U	0.81 U	0.088 U	0.08 R	0.077 R	0.95 U	0.081 U	0.075 U	0.072 U	0.024 J	0.77 U	0.021 J	0.84 U
Benzo[a]pyrene	mg/kg	2.1	0.64	5.7	0.0087 U	0.13	0.02	0.17	0.018	0.49	0.0046 J	0.37	0.071	0.057	0.025
Benzo[b]fluoranthene	mg/kg	21	1.3	10	0.0087 U	0.23	0.029	0.2	0.025	0.65	0.012	0.63	0.078	0.089	0.032
Benzo[g,h,i]perylene	mg/kg		0.45	5.5	0.0087 U	0.083	0.014	0.15	0.013	0.38	0.0064 J	0.31	0.053	0.077	0.031
Benzo[k]fluoranthene	mg/kg	210	0.34	3.2	0.0087 U	0.074	0.0097	0.059	0.0086	0.2	0.0041 J	0.21	0.025	0.024	0.014
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.52 J	0.69 J	0.042 J	0.047 B	0.034 B	0.95 U	0.081 U	0.027 J	0.072 U	0.021 J	0.77 U	0.076 U	0.84 U
Caprolactam	mg/kg	400,000	1.8 U	2 U	0.22 U	0.2 U	0.027 J	2.4 U	0.2 U	0.19 U	0.18 U	0.18 U	1.9 U	0.039 J	2.1 U
Carbazole	mg/kg		0.25 J	0.57 J	0.088 U	0.08 U	0.077 U	0.95 U	0.081 U	0.064 J	0.072 U	0.081	0.77 U	0.076 U	0.84 U
Chrysene	mg/kg	2,100	0.88	6.5	0.0087 U	0.17	0.02	0.11	0.016	0.46	0.025	0.4	0.041	0.069	0.026
Dibenz[a,h]anthracene	mg/kg	2.1	0.13	1.3	0.0087 U	0.02	0.0029 J	0.031	0.0037 J	0.098	0.0018 J	0.09	0.014	0.016	0.0052 J
Di-n-butylphthalate	mg/kg	82,000	0.74 U	0.81 U	0.057 J	0.26 J	0.24 J	0.95 U	0.071 J	0.065 J	0.034 J	0.05 J	0.77 U	0.053 J	0.84 U
Di-n-octylphthalate	mg/kg	8,200	0.74 U	0.81 U	0.088 U	0.08 U	0.077 U	0.95 U	0.081 U	0.075 U	0.072 U	0.073 U	0.22 J	0.076 U	0.84 U
Fluoranthene	mg/kg	30,000	1.7	12	0.0087 U	0.23	0.034	0.13	0.032	1.1	0.015	0.87	0.03	0.086	0.044
Fluorene	mg/kg	30,000	0.024	0.11	0.0087 U	0.0085	0.0022 J	0.0046 J	0.0013 J	0.024	0.0072 U	0.02	0.0078 U	0.0052 J	0.012
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.57	5.8	0.0087 U	0.08	0.012	0.16	0.015	0.45	0.0074	0.37	0.062	0.053	0.025
Naphthalene	mg/kg	8.6	0.2	0.45	0.0087 U	0.18	0.014	0.08	0.007 J	0.85	0.0072 U	0.46	0.054	0.088	0.052
N-Nitrosodiphenylamine	mg/kg	470	0.74 U	0.81 U	0.088 U	0.08 U	0.077 U	0.95 U	0.081 U	0.075 U	0.072 U	0.073 U	0.77 U	0.076 U	0.84 U
Phenanthrene	mg/kg		1	5.9	0.0087 U	0.2	0.027	0.12	0.013	0.82	0.002 J	0.57	0.057	0.086	0.072
Phenol	mg/kg	250,000	0.74 U	0.81 U	0.088 U	0.08 U	0.077 U	0.95 U	0.081 U	0.075 U	0.072 U	0.073 U	0.77 U	0.076 U	0.84 U
Pyrene	mg/kg	23,000	1.3	9	0.0007 J	0.21	0.028	0.13	0.026	0.95	0.0052 J	0.67	0.027	0.086	0.038
PCBs															
Aroclor 1232	mg/kg	0.72	0.18 U	N/A	N/A	0.1 U	N/A	0.12 U	N/A	0.062 J	N/A	0.092 J	N/A	0.19 U	N/A
Aroclor 1248	mg/kg	0.94	0.18 U	N/A	N/A	0.1 U	N/A	0.12 U	N/A	0.093 U	N/A	0.049 J	N/A	0.19 U	N/A
Aroclor 1254	mg/kg	0.97	0.18 U	N/A	N/A	0.1 U	N/A	0.12 U	N/A	0.093 U	N/A	0.092 U	N/A	0.19	N/A
Aroclor 1260	mg/kg	0.99	0.18 U	N/A	N/A	0.048 U	N/A	0.12 U	N/A	0.093 U	N/A	0.092 U	N/A	0.19 U	N/A
Aroclor 1262	mg/kg		0.18 U	N/A	N/A	0.1 U	N/A	0.091 J	N/A	0.093 U	N/A	0.092 U	N/A	0.19 U	N/A
PCBs (total)	mg/kg	0.97	1.6 U	N/A	N/A	0.91 U	N/A	1.1 U	N/A	0.84 U	N/A	0.83 U	N/A	1.7 U	N/A
TPH/Oil & Grease															
Diesel Range Organics	mg/kg	6,200	2,410	3,210	16.9	37.4 J	23.5	108	16	99.4	13.7	191	32.4	75.4	130
Gasoline Range Organics	mg/kg	6,200	12.1 U	11.7 U	11.6 U	11.5 U	11.7 U	14.2 U	9.8 U	9 U	14.2 U	9.7 U	14.2 U	9.9 U	11.1 U
Oil & Grease	mg/kg	6,200	3,420	10,700	531 U	163 J-	233 UJ	199	451	438	111 U	414	118 U	685	1,830

Bold indicates detection

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

* Indicates non-validated data

^ PAH compounds were analyzed via SIM

N/A: This parameter was not analyzed for this sample.

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

J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

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

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**Table 6 - Parcel B9
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B9-001-SB-1	B9-001-SB-5	B9-002-SB-1.5	B9-002-SB-5	B9-002-SB-10*	B9-003-SB-1	B9-003-SB-5	B9-004-SB-1
			5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020
Metals										
Aluminum	mg/kg	1,100,000	10,200	31,500	10,300	14,600	N/A	14,200	11,700	15,200
Antimony	mg/kg	470	2.6 UJ	2.8 UJ	2.8 UJ	3 UJ	N/A	3 UJ	2.9 UJ	2.7 UJ
Arsenic	mg/kg	3	5.9	47.5	6	4	3.3	8.5	5.8	10.4
Barium	mg/kg	220,000	111 J	399 J	122 J	144 J	N/A	179 J	145 J	206 J
Beryllium	mg/kg	2,300	1.3	1.9	1.1	1.2	N/A	1.1	0.97	1.4
Cadmium	mg/kg	980	1.2 J	4.7	1.6	0.6 J	N/A	2.3	1.6	2.7
Chromium	mg/kg	120,000	476	1,710	463	35.1	N/A	199	430	190
Chromium VI	mg/kg	6.3	1 R	1.2 R	0.76 B	1.3 R	N/A	1.2 R	0.77 B	1.1 R
Cobalt	mg/kg	350	5.5	30.7	4.7	4.1 J	N/A	12.6	8.8	13
Copper	mg/kg	47,000	41.9 J	125 J	46.8 J	19.8 J	N/A	74.3 J	71.8 J	94.7 J
Iron	mg/kg	820,000	133,000	87,000	109,000	13,200	N/A	87,400	59,300	76,000
Lead	mg/kg	800	82.4 J	658 J	150 J	72.3 J	N/A	205 J	174 J	239 J
Manganese	mg/kg	26,000	12,200	6,120	10,300	494	N/A	6,050	9,170	8,440
Mercury	mg/kg	350	1.2	0.09 J	1.9	0.041 J	N/A	0.33	0.19	0.32
Nickel	mg/kg	22,000	31.6	150	27.4	11.5	N/A	60.6	25.9	49.9
Selenium	mg/kg	5,800	3.4 UJ	3.7 UJ	3.7 UJ	4 UJ	N/A	4 UJ	3.8 UJ	3.6 UJ
Silver	mg/kg	5,800	2.6 U	2.8 U	2.8 U	3 U	N/A	3 U	2.9 U	2.7 U
Thallium	mg/kg	12	5.2 J	3.4 J	4 J	10 U	N/A	7.2 J	19.2 J	3.4 J
Vanadium	mg/kg	5,800	271 J	159 J	233 J	40.7 J	N/A	406 J	1,700 J	189 J
Zinc	mg/kg	350,000	434	1,260	890	148	N/A	816	619	546
Other										
Cyanide	mg/kg	150	2.1 J+	1.1 J+	3 J+	0.36 J+	N/A	1.6 J+	1 J+	13.3 J+

Bold indicates detection

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

N/A: This parameter was not analyzed for this sample.

* Indicates non-validated data

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

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

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

J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.

J+: The positive result reported for this analyte is a quantitative estimate but may be biased high.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

**Table 6 - Parcel B9
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B9-004-SB-5	B9-005-SB-1	B9-005-SB-4	B9-006-SB-1	B9-006-SB-8	B9-007-SB-1*	B9-007-SB-5*	B9-007-SB-10*
			5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	5/29/2020	6/1/2020	6/1/2020
Metals										
Aluminum	mg/kg	1,100,000	7,770	13,000	29,400	29,700	8,320	14,000	11,300	N/A
Antimony	mg/kg	470	7.3 J	2.6 UJ	2.5 UJ	2.5 UJ	3.1 J	2.5 U	3 U	N/A
Arsenic	mg/kg	3	17.7	15.8	3	4.5	16	3.1	4.5	5.5
Barium	mg/kg	220,000	196 J	232 J	523 J	244 J	148 J	407	88.7	N/A
Beryllium	mg/kg	2,300	0.66 J	1.7	3.3	5.6	0.9	1.2	0.69 J	N/A
Cadmium	mg/kg	980	4	5.1	0.72 J	0.51 J	2.2	11.2	0.74 J	N/A
Chromium	mg/kg	120,000	248	291	455	129	12.3	562	42.8	N/A
Chromium VI	mg/kg	6.3	1.1 B	1.1 R	0.7 B	1.1 R	1.1 R	0.68 J	1.2 U	N/A
Cobalt	mg/kg	350	34.1	15.4	3.5 J	1.8 J	16.9	5.2	5.3	N/A
Copper	mg/kg	47,000	288 J	67.8 J	23.7 J	17.2 J	153 J	68.4	20.2	N/A
Iron	mg/kg	820,000	192,000	75,000	41,100	27,200	162,000	73,100	17,700	N/A
Lead	mg/kg	800	1,790 J	225 J	24.4 J	48.3 J	57.6 J	187	51	N/A
Manganese	mg/kg	26,000	5,010	15,500	21,400	6,180	29,100	11,300	1,010	N/A
Mercury	mg/kg	350	0.2	0.5	0.47	0.14	0.11 U	46.9	0.019 J	N/A
Nickel	mg/kg	22,000	121	64.4	13.8	13.5	32.6	39.3	14.5	N/A
Selenium	mg/kg	5,800	3.6 UJ	3.5 UJ	3.4 UJ	3.4 UJ	3.4 UJ	3.4 U	3.9 U	N/A
Silver	mg/kg	5,800	2.7 U	2.6 U	2.5 U	2.5 U	1.3 J	2.5 U	3 U	N/A
Thallium	mg/kg	12	12.3 J	18.2 J	23.1 J	8.5 U	4.4 J	6.4 J	9.9 U	N/A
Vanadium	mg/kg	5,800	1,040 J	1,440 J	1,930 J	80.5 J	35.2 J	442	81.9	N/A
Zinc	mg/kg	350,000	1,300	2,750	252	109	517	553	124	N/A
Other										
Cyanide	mg/kg	150	5.1 J+	1.4 J+	1.4 J+	2.3 J+	1.1 J+	1.6	0.2 J	N/A

Bold indicates detection

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

N/A: This parameter was not analyzed for this sample.

* Indicates non-validated data

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

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

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

J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.

J+: The positive result reported for this analyte is a quantitative estimate but may be biased high.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

**Table 6 - Parcel B9
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B9-008-SB-1*	B9-008-SB-5*	B9-009-SB-1*	B9-009-SB-6*	B9-010-SB-1.5	B9-010-SB-5	B9-011-SB-2	B9-011-SB-5
			5/27/2020	5/27/2020	10/12/2020	10/12/2020	5/26/2020	5/26/2020	5/26/2020	5/26/2020
Metals										
Aluminum	mg/kg	1,100,000	15,900	6,130	9,690	5,440	8,280	8,220	39,600	22,300
Antimony	mg/kg	470	2.7 U	2.6 U	2.7 U	2.6 U	3.1 UJ	3.1 UJ	3.2 UJ	3.4 UJ
Arsenic	mg/kg	3	3	8.6	4.3	2.7	4.3	4.3	2.7 U	5.7
Barium	mg/kg	220,000	79.5	57.3	199	63.6	76.9 J	86.3 J	332 J	371 J
Beryllium	mg/kg	2,300	0.52 J	0.35 J	0.76 J	0.24 J	0.32 J	0.42 J	7.4	1.3
Cadmium	mg/kg	980	1.2 J	0.95 J	0.88 J	0.4 J	0.84 J	0.94 J	1.6 U	0.8 J
Chromium	mg/kg	120,000	698	618	42.9	160	627 J	789 J	137 J	61.9 J
Chromium VI	mg/kg	6.3	2.7	1.1 U	1.2 U	1 U	1.1 R	1.1 R	1.1 R	1.2 R
Cobalt	mg/kg	350	5.3	8.7	3 J	1.9 J	8.1	5.2	0.69 J	8.3
Copper	mg/kg	47,000	49.6	75.2	31.5	15.2	41.5	49.1	3.6 J	63.9
Iron	mg/kg	820,000	183,000	268,000	20,500	31,600	150,000	181,000	28,700	32,900
Lead	mg/kg	800	58.1	45.7	47.4	29.4	60.7 J	50.2 J	7.8 J	196 J
Manganese	mg/kg	26,000	24,700	15,600	1,740	3,380	14,600	14,100	5,300	1,540
Mercury	mg/kg	350	0.11 J	0.13	0.077 J	0.074 J	0.097 J	0.1 J	0.11 U	0.11 U
Nickel	mg/kg	22,000	51.5	62.1	14.9	9.2	43.4	38.6	3.6 J	26.4
Selenium	mg/kg	5,800	3.7 U	3.5 U	3.6 U	3.5 U	4.1 U	4.1 U	4.3 U	4.6 U
Silver	mg/kg	5,800	2.7 U	2.6 U	2.7 U	2.6 U	3.1 UJ	3.1 UJ	3.2 UJ	3.4 UJ
Thallium	mg/kg	12	9.1 U	8.7 U	8.9 U	3 J	10.2 U	10.3 U	10.7 U	11.5 U
Vanadium	mg/kg	5,800	555	426	57.1	140	588 J	740 J	116 J	65.9 J
Zinc	mg/kg	350,000	240	227	325	97.7	214 J	202 J	12.2 J	294 J
Other										
Cyanide	mg/kg	150	1.3	1	1.3	0.48 J	1.3	1.5	0.57 J	2.1

Bold indicates detection

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

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

J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.

J+: The positive result reported for this analyte is a quantitative estimate but may be biased high.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

**Table 6 - Parcel B9
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B9-012-SB-1	B9-012-SB-5	B9-013-SB-1*	B9-013-SB-9*	B9-013-SB-10*	B9-014-SB-1*	B9-014-SB-5*
			5/26/2020	5/26/2020	5/27/2020	10/8/2020	10/8/2020	5/27/2020	5/27/2020
Metals									
Aluminum	mg/kg	1,100,000	16,200	8,430	7,590	23,700	21,100	9,730	11,400
Antimony	mg/kg	470	3.1 UJ	3.3 UJ	2.7 U	2.8 U	2.7 U	2.7 U	3
Arsenic	mg/kg	3	2.6	2.7 U	12.6	3.5	4.9	4.3	56
Barium	mg/kg	220,000	120 J	81.8 J	140	368	256	100	187
Beryllium	mg/kg	2,300	0.57 J	0.32 J	0.6 J	2.3	1.7	0.79 J	5.7
Cadmium	mg/kg	980	1.1 J	0.96 J	3.6	0.44 J	0.6 J	0.57 J	6.7
Chromium	mg/kg	120,000	770 J	996 J	250	67.4	54	97.3	120
Chromium VI	mg/kg	6.3	1.4 J-	1.1 R	0.87 J	1.2 U	1.1 U	0.71 J	1.3 U
Cobalt	mg/kg	350	6.3	5.2 J	13.9	8.1	5.2	3.5 J	43.3
Copper	mg/kg	47,000	59.3	55.6	172	14.3	15.2	25.8	968
Iron	mg/kg	820,000	158,000	179,000	92,400	20,400	25,100	20,800	153,000
Lead	mg/kg	800	73.7 J	52.4 J	333	172	30.4	83.9	1,470
Manganese	mg/kg	26,000	19,000	17,400	5,340	4,070	3,090	1,730	1,950
Mercury	mg/kg	350	0.11	0.1 J	1.4	0.11 U	0.11 U	1.4	2.2
Nickel	mg/kg	22,000	46.5	40.3	168	8.1 J	13	21.3	521
Selenium	mg/kg	5,800	4.1 U	4.3 U	3.6 U	3.7 U	3.6 U	3.6 U	4 U
Silver	mg/kg	5,800	3.1 UJ	3.3 UJ	2.7 U	2.8 U	2.7 U	2.7 U	3 U
Thallium	mg/kg	12	10.2 U	10.9 U	9 U	9.3 U	9.1 U	9.1 U	10 U
Vanadium	mg/kg	5,800	805 J	598 J	484	158	245	82.9	411
Zinc	mg/kg	350,000	416 J	226 J	1,010	125	59.6	161	6,070
Other									
Cyanide	mg/kg	150	1.9	1.8	1.5	0.75 J	1.1	0.29 J	1.1 J

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B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

**Table 6 - Parcel B9
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B9-014-SB-10*	B9-015-SB-1	B9-015-SB-5	B9-016-SB-1*	B9-016-SB-5*	B9-017-SB-1*	B9-017-SB-5*
			10/8/2020	5/26/2020	5/26/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020
Metals									
Aluminum	mg/kg	1,100,000	N/A	39,600	24,700	33,300	24,600	9,800	44,300
Antimony	mg/kg	470	N/A	3.2 UJ	3.2 UJ	3.6 U	3 U	2.7 U	2.6 U
Arsenic	mg/kg	3	10.4	5.6	3.1	3 U	4.6	2.2 U	4
Barium	mg/kg	220,000	N/A	360 J	236 J	323	138	66.2	646
Beryllium	mg/kg	2,300	N/A	6.5	3.1	5.1	2.7	0.37 J	6.2
Cadmium	mg/kg	980	N/A	0.89 J	0.49 J	0.88 J	1.5 U	0.94 J	0.33 J
Chromium	mg/kg	120,000	N/A	52 J	119 J	367	30.5	633	13
Chromium VI	mg/kg	6.3	N/A	1.2 R	1.1 R	1.4 U	1.2 U	1.1 U	1.1 U
Cobalt	mg/kg	350	N/A	2.4 J	6.4	5.3 J	5.7	4.5	2.7 J
Copper	mg/kg	47,000	N/A	17.1	29.4	32.3	11.5	42.8	10.9
Iron	mg/kg	820,000	N/A	36,000	26,000	67,900	17,900	161,000	13,300
Lead	mg/kg	800	18.4	52.7 J	52.4 J	69.7	26.6	52.1	5.8
Manganese	mg/kg	26,000	N/A	3,630	3,060	8,980	968	13,100	7,960
Mercury	mg/kg	350	N/A	0.033 J	0.12 U	0.056 J	0.11 U	0.083 J	0.11 U
Nickel	mg/kg	22,000	N/A	7.2 J	24.8	22.6	12.2	34.3	2.5 J
Selenium	mg/kg	5,800	N/A	4.3 U	4.3 U	4.8 U	4 U	3.5 U	2.7 J
Silver	mg/kg	5,800	N/A	3.2 UJ	3.2 UJ	3.6 U	3 U	2.7 U	2.6 U
Thallium	mg/kg	12	N/A	10.8 U	10.8 U	11.9 U	10 U	8.9 U	8.7 U
Vanadium	mg/kg	5,800	N/A	106 J	158 J	251	88.4	447	50.3
Zinc	mg/kg	350,000	N/A	163 J	348 J	135	112	362	10.4
Other									
Cyanide	mg/kg	150	N/A	0.9 J	0.6 J	0.7 J	0.28 J	1.1 J	0.43 J

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**Table 6 - Parcel B9
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B9-017-SB-10*	B9-018-SB-1*	B9-018-SB-8*	B9-018-SB-10*	B9-019-SB-1*	B9-019-SB-5*
			5/27/2020	5/27/2020	5/27/2020	5/27/2020	5/27/2020	10/8/2020
Metals								
Aluminum	mg/kg	1,100,000	N/A	9,540	9,700	N/A	10,600	18,500
Antimony	mg/kg	470	N/A	2.6 U	2.9 U	N/A	2.6 U	2.9 U
Arsenic	mg/kg	3	10.1	8.5	10.8	32.2	6.5	9.7
Barium	mg/kg	220,000	N/A	141	82.3	N/A	160	147
Beryllium	mg/kg	2,300	N/A	0.97	0.6 J	N/A	1.7	2.9
Cadmium	mg/kg	980	N/A	1.8	1.1 J	N/A	3.9	0.75 J
Chromium	mg/kg	120,000	N/A	673	13.8	N/A	229	228
Chromium VI	mg/kg	6.3	N/A	1.1 U	1.2 U	N/A	1.1 U	1.2 U
Cobalt	mg/kg	350	N/A	8.9	70.6	N/A	10.7	8.8
Copper	mg/kg	47,000	N/A	108	1,120	N/A	53.2	51.1
Iron	mg/kg	820,000	N/A	175,000	205,000	N/A	163,000	157,000
Lead	mg/kg	800	N/A	188	215	N/A	461	73.4
Manganese	mg/kg	26,000	N/A	17,200	18,400	N/A	5,700	4,230
Mercury	mg/kg	350	N/A	0.78	0.11 U	N/A	0.011 J	0.019 J
Nickel	mg/kg	22,000	N/A	86	20.9	N/A	75.4	137
Selenium	mg/kg	5,800	N/A	3.5 U	3.9 U	N/A	3.5 U	3.9 U
Silver	mg/kg	5,800	N/A	2.6 U	0.69 J	N/A	2.6 U	2.9 U
Thallium	mg/kg	12	N/A	8.7 U	9.8 U	N/A	8.8 U	9.8 U
Vanadium	mg/kg	5,800	N/A	1,030	49.1	N/A	139	56.5
Zinc	mg/kg	350,000	N/A	430	759	N/A	767	151
Other								
Cyanide	mg/kg	150	N/A	3.3	0.73 J	N/A	0.77 J	0.72 J

Bold indicates detection

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N/A: This parameter was not analyzed for this sample.

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Table 7 - Parcel B9
Summary of Asbestos Detected in Soil

<u>Sample ID</u>	<u>Appearance</u>	<u>Asbestos Detection (Qualitative)</u>	
		<u>Chrysotile</u>	<u>Amosite</u>
B9-005-SB-1	Brown; Non-Fibrous; Heterogeneous	Yes	Yes
B9-006-SB-1	Gray; Non-Fibrous; Heterogeneous	Yes	No
B9-007-SB-1	Brown; Non-Fibrous; Homogeneous	Yes	No
B9-008-SB-1	Tan; Non-Fibrous; Heterogeneous	Yes	No
B9-009-SB-1	Brown; Non-Fibrous; Homogeneous	No	No
B9-010-SB-1.5	Tan; Non-Fibrous; Homogeneous	No	No
B9-011-SB-2	Tan; Non-Fibrous; Homogeneous	No	No
B9-012-SB-1	Tan; Non-Fibrous; Homogeneous	Yes	No
B9-013-SB-1	Tan; Non-Fibrous; Heterogeneous	Yes	Yes
B9-014-SB-1	Tan; Non-Fibrous; Heterogeneous	Yes	Yes
B9-017-SB-1	Tan; Non-Fibrous; Heterogeneous	No	No
B9-018-SB-1	Tan; Non-Fibrous; Heterogeneous	No	No

Bolded/Highlighted sample detections of asbestos in soil

All asbestos results are non-validated

**Table 8 - Parcel B9
Summary of Soil PAL Exceedances**

<u>Parameter</u>	<u>CAS#</u>	<u>Frequency of Detections (%)*</u>	<u>Frequency of Exceedances (%)*</u>	<u>Sample ID of Max Result</u>	<u>Max Result (mg/kg)</u>	<u>PAL Solid (mg/kg)</u>
Arsenic	7440-38-2	91%	86%	B9-014-SB-5	56	3
Benzo[a]pyrene	50-32-8	95%	3%	B9-014-SB-5	5.7	2.1
Lead	7439-92-1	100%	5%	B9-004-SB-5	1,790	800
Manganese	7439-96-5	100%	3%	B9-006-SB-8	29,100	26,000
Oil & Grease	O&G	73%	8%	B9-009-SB-1	34,900	6,200
Thallium	7440-28-0	31%	10%	B9-005-SB-4	23.1	12

*Frequency of detections and exceedances calculated as a percentage based on the total number of samples analyzed for the parameter (excluding any rejected data results).

**Table 9 - Parcel B9
Rejected Analytical Results**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result (mg/kg)</u>	<u>PAL (mg/kg)</u>	<u>Exceeds PAL?</u>
B9-001-SB-1	Chromium VI	1	6.3	no
B9-001-SB-5	Chromium VI	1.2	6.3	no
B9-002-SB-5	Chromium VI	1.3	6.3	no
B9-003-SB-1	Chromium VI	1.2	6.3	no
B9-004-SB-1	Chromium VI	1.1	6.3	no
B9-005-SB-1	Chromium VI	1.1	6.3	no
B9-005-SB-4	1,4-Dioxane	0.12	24	no
B9-006-SB-1	1,4-Dioxane	0.1	24	no
	2,3,4,6-Tetrachlorophenol	0.072	25,000	no
	2,4,5-Trichlorophenol	0.18	82,000	no
	2,4,6-Trichlorophenol	0.072	210	no
	2,4-Dichlorophenol	0.072	2,500	no
	2,4-Dimethylphenol	0.072	16,000	no
	2,4-Dinitrophenol	0.18	1,600	no
	2-Chlorophenol	0.072	5,800	no
	2-Methylphenol	0.072	41,000	no
	3&4-Methylphenol(m&p Cresol)	0.14	41,000	no
	Chromium VI	1.1	6.3	no
	Pentachlorophenol	0.18	4	no
Phenol	0.072	250,000	no	
B9-006-SB-8	1,4-Dioxane	0.13	24	no
	3,3'-Dichlorobenzidine	0.074	5.1	no
	Chromium VI	1.1	6.3	no
B9-010-SB-1.5	2,3,4,6-Tetrachlorophenol	0.073	25,000	no
	2,4,5-Trichlorophenol	0.18	82,000	no
	2,4,6-Trichlorophenol	0.073	210	no
	2,4-Dichlorophenol	0.073	2,500	no
	2,4-Dimethylphenol	0.073	16,000	no
	2,4-Dinitrophenol	0.18	1,600	no
	2-Chlorophenol	0.073	5,800	no
	2-Methylphenol	0.073	41,000	no
	3&4-Methylphenol(m&p Cresol)	0.15	41,000	no
	Chromium VI	1.1	6.3	no
	Pentachlorophenol	0.18	4	no
Phenol	0.073	250,000	no	
B9-010-SB-5	2,3,4,6-Tetrachlorophenol	0.072	25,000	no
	2,4,5-Trichlorophenol	0.18	82,000	no
	2,4,6-Trichlorophenol	0.072	210	no
	2,4-Dichlorophenol	0.072	2,500	no
	2,4-Dimethylphenol	0.072	16,000	no
	2,4-Dinitrophenol	0.18	1,600	no
	2-Chlorophenol	0.072	5,800	no
	2-Methylphenol	0.072	41,000	no
	3&4-Methylphenol(m&p Cresol)	0.14	41,000	no
	Chromium VI	1.1	6.3	no
	Pentachlorophenol	0.18	4	no
	Phenol	0.072	250,000	no

**Table 9 - Parcel B9
Rejected Analytical Results**

<u>Sample ID</u>	<u>Parameter</u>	<u>Result</u> (mg/kg)	<u>PAL</u> (mg/kg)	<u>Exceeds</u> <u>PAL?</u>
B9-011-SB-2	Benzaldehyde	0.074	120,000	no
	Chromium VI	1.1	6.3	no
B9-011-SB-5	Benzaldehyde	0.077	120,000	no
	Chromium VI	1.2	6.3	no
B9-012-SB-1	2,3,4,6-Tetrachlorophenol	0.072	25,000	no
	2,4,5-Trichlorophenol	0.18	82,000	no
	2,4,6-Trichlorophenol	0.072	210	no
	2,4-Dichlorophenol	0.072	2,500	no
	2,4-Dimethylphenol	0.072	16,000	no
	2,4-Dinitrophenol	0.18	1,600	no
	2-Chlorophenol	0.072	5,800	no
	2-Methylphenol	0.072	41,000	no
	3&4-Methylphenol(m&p Cresol)	0.14	41,000	no
	Pentachlorophenol	0.18	4	no
	Phenol	0.072	250,000	no
B9-012-SB-5	2,3,4,6-Tetrachlorophenol	0.072	25,000	no
	2,4,5-Trichlorophenol	0.18	82,000	no
	2,4,6-Trichlorophenol	0.072	210	no
	2,4-Dichlorophenol	0.072	2,500	no
	2,4-Dimethylphenol	0.072	16,000	no
	2,4-Dinitrophenol	0.18	1,600	no
	2-Chlorophenol	0.072	5,800	no
	2-Methylphenol	0.072	41,000	no
	3&4-Methylphenol(m&p Cresol)	0.14	41,000	no
	Chromium VI	1.1	6.3	no
	Pentachlorophenol	0.18	4	no
	Phenol	0.072	250,000	no
	B9-015-SB-1	Benzaldehyde	0.08	120,000
Chromium VI		1.2	6.3	no
B9-015-SB-5	Benzaldehyde	0.077	120,000	no
	Chromium VI	1.1	6.3	no

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APPENDIX A

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**Parcel B9 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC/ SWMU/ AOC	Figure or Drawing of Reference	Rationale	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Drip Leg #52 / Slurry Overflow Pit	N/A	5516, Drip Legs Drawing	Coke oven gas condensate was removed from the gas pipelines at drip legs located throughout the distribution system. The condensate was typically discharged to drums, although it is possible some spilled out of the drums and onto the ground. Drip Leg #52 is co-located with a historical Slurry Overflow Pit. Investigate historical impacts related to the drip leg and/or pit (potential leaks or releases).	2	B9-001 and B9-002	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1')
Drip Leg #63	N/A	Drip Legs Drawing	Coke oven gas condensate was removed from the gas pipelines at drip legs located throughout the distribution system. The condensate was typically discharged to drums, although it is possible some spilled out of the drums and onto the ground. Investigate historical impacts related to the drip leg (potential leaks or releases).	2	B9-003 and B9-004	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1')
Recycled Oil Tank	N/A	5116, Aerial Images	Investigate historical impacts related to the Recycled Oil Tank (potential leaks or releases).	2	B9-005 and B9-006	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1'), Asbestos (0-1')
Substation / Transformers (PCB-Equipment)	N/A	5516, PCB Location Map	Investigate historical impacts related to the recently-demolished Substation and Transformers identified as potential PCB-containing equipment to the north of the former Pennwood Power Plant (potential leaks or releases).	5	B9-007 through B9-011	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (all depths), Asbestos (0-1')

**Parcel B9 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC/ SWMU/ AOC	Figure or Drawing of Reference	Rationale	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Pennwood Power Plant	N/A	DCC Figure, Aerial Images	Investigate potential impacts related to the recently demolished Pennwood Power Plant (potential leaks or releases).	3	B9-012 through B9-014	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1'), Asbestos (0-1')
Demineralizer Process	N/A	5117, Aerial Images	Investigate historical impacts related to the Demineralizer Process (potential leaks or releases). The process involves mineral removal prior to steam generation.	2	B9-015 and B9-016	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1')
Fuel Dept. Storage Building	N/A	5017	Investigate historical impacts related to the Fuel Dept. Storage Building (potential leaks or releases).	2	B9-017 and B9-018	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1'), Asbestos (0-1')
Parcel B9 Site Coverage	N/A	N/A	Investigate potential impacts related to any historical activities which may have occurred in the southeast portion of the Site (potential leaks or releases).	1	B9-019	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC [^] , SVOC, Metals, DRO/GRO, O&G, PCBs (0-1')
			Total:	19				

Soil Borings Sampling Density Requirements (from **Worksheet 17 - Sampling Design and Rationale**)

No Engineered Barrier (1-15 acres): 1 boring per acre with no less than 3 borings.

Engineered Barrier (N/A)

No Engineered Barrier (7.1 acres) = **8 Borings Required, 19 Completed**

VOCs - Volatile Organic Compounds (Target Compound List)

[^]VOCs only collected if the PID reading exceeds 10 ppm

SVOCs - Semivolatile Organic Compounds (Target Compound List)

Metals - (Target Analyte List plus Hexavalent Chromium and Cyanide)

O&G - Oil & Grease

DRO/GRO - Diesel Range Organics/Gasoline Range Organics

PCBs - Polychlorinated Biphenyls

bgs - Below Ground Surface

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APPENDIX B

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Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 05/29/2020
 Weather : Sunny, 80's

Northing (US ft) : 564262.35
 Easting (US ft) : 1461279.51

Boring ID: B9-001-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS	
0		-	B9-001-SB-1	(0-1.2') SAND, very fine to fine with SILT, loose to medium dense, very dark brown, dry, no plasticity, no cohesion, light amount of organic	SW-SM		
1		1.9		(1.2-5') Non-native SAND and SLAG, SAND and GRAVEL sized, with trace CLAY at 2.5' bgs, medium dense, brown and dark brown with light gray, dry, no plasticity, no cohesion	SW/GW		
2	86	17.1					
3		2.0					
4		0.0	B9-001-SB-5				
5		4.3		(5-7.9') CLAY, soft grading to very firm, with trace SAND at depth, very dark gray to light gray, then light gray and reddish yellow at 7.2' bgs, very moist grading to dry, low plasticity, cohesive	CL		
6		6.0					
7	100	4.9					
8		1.6		(7.9-10') CLAYEY SAND, dense light gray and reddish yellow grading to reddish yellow and yellowish red, dry to moist then wet at 9.7' bgs, no plasticity, no cohesion	SC		
9		0.0					
10	End of Boring						Wet at 9.7' bgs
11							

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 05/29/2020
 Weather : Sunny, 80's

Northing (US ft) : 564247.52
 Easting (US ft) : 1461282.36

Boring ID: B9-002-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-0.3') Concrete, white, dry, no plasticity, no cohesion	NA	
	72	0.5	B9-002-SB-1.5	(0.3-2') Non-native SAND, very fine to fine, with CLAY and coarse GRAVEL, medium dense, dark brown, dry, no plasticity, no cohesion	SW-SC/GP	
		2.1		(2-4.9') SLAG, SAND and GRAVEL sized, medium dense to dense, brown and light gray, dry, no plasticity, no cohesion	SW/GW	
		2.7				
		0.5	B9-002-SB-5			
5		-		(4.9-10.5') CLAY, soft to very firm, with trace SAND, light gray with some reddish yellow mottling, moist to dry, low plasticity, cohesive	CL	
	86	0.0				
		0.0				
		0.0	B9-002-SB-10			
		0.0				
10		-		(10.5-12.5') CLAY with SAND, very firm, light brownish gray with trace reddish yellow, moist, low plasticity, cohesive	CL	Wet at 12.5' bgs
	72	0.0		(12.5-14.2') CLAYEY SAND, dense, pale brown with trace reddish yellow, wet, no plasticity, no cohesion	SC	
		0.0				
		0.0		(14.2-15') CLAY, soft, light brownish gray, very moist, low plasticity, cohesive	CL	
15				End of Boring		

Total Borehole Depth: 15' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 05/29/2020
 Weather : Sunny, 70's

Northing (US ft) : 564037.13
 Easting (US ft) : 1461302.14

Boring ID: B9-003-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-003-SB-1	(0-1') CLAYEY SAND with BRICK GRAVEL, fine to coarse, dark brown with yellow, dry, no plasticity, no cohesion, trace wood	SC	
1		-		(1-8.7') CLAY with SAND and SLAG/BRICK GRAVEL, firm to very firm, dark brown and yellowish brown, dry to moist, low plasticity, cohesive, trace wood and paper at 5' bgs	CL	
2	58	0.0				
3		0.0				
4		0.0	B9-003-SB-5			
5		-				
6		-				
7		-				
8	50	0.0				
9		0.0		(8.7-9.4') CLAYEY GRAVEL with SAND, medium dense, dark brown with some pale brown, moist, no plasticity, no cohesion	GW/SW	
10		0.0		(9.4-10') Non-native SAND with BRICK GRAVEL and SILT, loose to medium dense, dark brown with yellow, wet, no plasticity, no cohesion	SW/GW	Wet at 9.7' bgs
11				End of Boring		

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 05/29/2020
 Weather : Sunny, 70's

Northing (US ft) : 563969.09
 Easting (US ft) : 1461315.84

Boring ID: B9-004-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-004-SB-1	(0-0.5') Non-native SAND and GRAVEL with SILT, trace CLAY at surface, loose to medium dense, dark brown, dry, no plasticity, no cohesion	SW/GW	
1		0.0		(0.5-3') SLAG GRAVEL, fine to coarse, medium dense, light gray, dry, no plasticity, no cohesion	GW	
2	80	0.0				
3		0.0		(3-3.7') SLAG, SAND and GRAVEL sized, medium dense, dark brown and light gray, dry, no plasticity, no cohesion	SW/GW	
4		0.0	B9-004-SB-5	(3.7-5') Non-native SAND, very fine to medium, with trace GRAVEL, medium dense, dark brown and reddish yellow, dry, no plasticity, no cohesion	SW	
5		2.6		(5-6.4') Non-native SAND and SLAG, SAND and GRAVEL sized, medium dense to dense, dark brown with light gray, dry, no plasticity, no cohesion	SW/GW	
6		3.0				
7	100	1.7		(6.4-10') SLAG, SAND and GRAVEL sized with SILT sized SLAG or COKE ASH, light gray and white, dense, dry to moist then wet at 7.7' bgs, no plasticity, no cohesion	SW/GW	Wet at 7.7' bgs
8		0.0			SW/GW -GM	
9		0.5				
10				End of Boring		
11						

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 05/29/2020
 Weather : Cloudy, 70's

Northing (US ft) : 564048.52
 Easting (US ft) : 1461476.72

Boring ID: B9-005-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0			B9-005-SB-1	(0-0.5') Non-native SAND with SILT and some smooth GRAVEL, loose to medium dense, dark brown, dry, no plasticity, no cohesion	SW-SM	
1		0.0		(0.5-7.1') SLAG, SAND and GRAVEL sized, medium dense, dark brown, brown, gray, and grayish brown, dry to moist at 4.5' bgs, no plasticity, no cohesion		
2	74	1.5				
3		40.2	B9-005-SB-4			
4		0.5			SW/GW	
5		-				
6		-				
7				(7.1-7.8') Non-native SAND, very fine to medium, with SILT, medium dense, reddish brown, dry, no plasticity, no cohesion	SW	
8	66	16.3		(7.8-10') Non-native SAND and GRAVEL with BRICK, medium dense, reddish brown to dark brown, moist then wet at 8.5' bgs, no plasticity, no cohesion		
9		8.6				
10		0.0			SW/GW	Wet at 8.5' bgs
11				End of Boring		

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 05/29/2020
 Weather : Cloudy, 70's
 Northing (US ft) : 564020.75
 Easting (US ft) : 1461445.85

Boring ID: B9-006-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-006-SB-1	(0-1.2') Non-native SAND, very fine to medium, with some SLAG/CONCRETE, fine GRAVEL, loose to mesium dense, dark brown, dry, no plasticity, no cohesion	SW/GP	
1		31.8		(1.2-4.1') SLAG, SAND and GRAVEL sized, with non-native SAND, medium dense to dense, dark brown to grayish brown with light gray and white, dry, no plasticity, no cohesion		
2	90	26.0			SW/GW	
3		11.5				
4		0.1		(4.1-4.6') SLAG, SAND and GRAVEL sized, medium dense, black to very dark brown and reddish yellow, very moist, no plasticity, no cohesion	SW/GW	
5		-		(4.6-5.5') CLAY with some SAND, very firm, dark brownish gray, dry, low plasticity, cohesive	CL	
6		10.7		(5.5-9') SLAG, SAND and GRAVEL sized, with some BRICK and trace SILT, medium dense to dense, black to very dark brown with reddish yellow and red, moist then wet at 8' bgs, no plasticity, no cohesion		
7		97.7	B9-006-SB-8		SW/GW	
8	80	74.0				Wet at 8' bgs
9		3.5		(9-10') SLAG, fine to very coarse, black with trace reddish yellow, wet, no plasticity, no cohesion	SW	
10				End of Boring		
11						

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 06/01/2020
 Weather : Sunny, 60's

Northing (US ft) : 564217.32
 Easting (US ft) : 1461547.60

Boring ID: B9-007-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-007-SB-1	(0-1.5') Non-native SILTY SAND, very fine to fine, loose to medium dense, light grayish brown, dry, no plasticity, no cohesion	SM	No water encountered
1		0.0				
2	72	0.0		(1.5-3.7') BRICK, SAND and GRAVEL-sized, medium dense, red and very pale brown, dry, non-plastic, non-cohesive	SW/GW	
3		0.0				
4		0.0	B9-007-SB-5	(3.7-4') CLAY, firm, reddish yellow and light brown, dry to moist, low plasticity, cohesive, some SAND	SW/GW SC	
5		-		(4-4.7') CLAYEY SAND, medium dense to dense, light brown and reddish yellow, dry to moist, non-plastic, non-cohesive		
6		0.0		(4.7-11.5') CLAY, firm to very firm then soft 6.8-8.5' bgs, reddish yellow and light brown, dry to moist, low plasticity, cohesive, metallic-like GRAVEL at 10' bgs		
7	80	0.0			SW/GW	
8		0.0				
9		0.5	B9-007-SB-10			
10		-				
11		-				
12	54	0.0		(11.5-13.7') CLAY with SLAG GRAVEL and SAND, very firm to firm, light brown with very dark gray, dry to moist and wet in areas of gravel, low plasticity, cohesive, thin SAND lenses at 12.3' and 13.6' bgs	CL	
13		0.0				
14		0.0		(13.7-15.8') CLAY, soft to firm, light brown, moist, low plasticity, cohesive	CL	
15		-				
16		0.0		(15.8-20') CLAY, soft, dark brownish gray, moist, medium plasticity, cohesive		
17	84	0.0			CL	
18		0.0				
19		0.0				
20		0.0				
21				End of Boring		

Total Borehole Depth: 20' bgs due to Work Plan.



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/27/2020
 Weather : Cloudy, 70's

Northing (US ft) : 564209.38
 Easting (US ft) : 1461638.46

Boring ID: B9-008-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0	B9-008-SB-1	(0-7') Non-native SAND, very fine to medium, with fine to coarse SLAG GRAVEL and some SILT, medium dense to dense, dark brown with some gray, dry, no plasticity, no cohesion	SW/GW	No water encountered
1		0.0				
2	94	0.0				
3		0.2				
4		0.0	B9-008-SB-5			
5		-				
6	45	0.0				
7				End of Boring		
8						
9						
10						

Total Borehole Depth: 7' bgs due to refusals



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : Connelly
 Driller : R. Connelly
 Drilling Equipment : Sonic

Date : 10/12/2020
 Weather : Rainy, 60's

Northing (US ft) : 564227.77
 Easting (US ft) : 1461688.15

Boring ID: B9-009-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		1.5	B9-009-SB-1	(0-0.4') CLAYEY SAND with some GRAVEL, medium dense, brown, wet, non-plastic, non-cohesive	SC	Wet at 8' bgs
1		2.8		(0.4-2') SLAG, SAND and GRAVEL-sized, with SILT, loose, brown, moist, non-plastic, non-cohesive	SW/GW	
2	100	1.0		(2-5') CONCRETE, SAND and GRAVEL-sized, loose, white, dry then moist 4.5-5' bgs, non-plastic, non-cohesive	NA	
3		0.3			NA	
4		0.5			NA	
5		12.6	B9-009-SB-6	(5-7') SAND with SILT and CONCRETE, GRAVEL-sized, loose, brown with some white, moist, non-plastic, non-cohesive	SW-SM	
6		8.8			SW-SM	
7	100	5.9		(7-12.5') CONCRETE, SAND and GRAVEL-sized, loose, white then white with grayish green at 10' bgs, dry then wet at 8' bgs, non-plastic, non-cohesive	NA	
8		0.8			NA	
9		0.5			NA	
10		1.0			NA	
11		0.3			NA	
12	80	-			NA	
13		0.5		(12.5-15') CLAYEY SAND and SILT, medium dense to soft, grayish green, wet, non-plastic, non-cohesive	SC/ML	
14		0.4			SC/ML	
15				End of Boring		

Total Borehole Depth: 15' bgs due to water.



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/26/2020
 Weather : Cloudy, 70's

Northing (US ft) : 564224.67
 Easting (US ft) : 1461729.16

Boring ID: B9-010-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-0.2') Non-native SILTY SAND with trace fine GRAVEL, loose, dark brown, dry, no plasticity, no cohesion	SM	No water encountered
				(0.2-0.5') Concrete, light gray to white	NA	
				(0.5-0.6') SAND, very fine to fine, medium dense, pink, dry, no plasticity, no cohesion	SW	
1			B9-010-SB-1.5	(0.6-4.6') Non-native SILTY SAND with fine SLAG GRAVEL, medium dense to dense, dark brown, dry, no plasticity, no cohesion	SM	
2	80	0.0				
3		0.2				
4		1.1				
5		0.1	B9-010-SB-5	(4.6-5') BRICK/SLAG, coarse GRAVEL, loose, yellow with gray, dry, no plasticity, no cohesion	GP	
6	100	1.9		(5-6') Non-native SILTY SAND with SLAG GRAVEL, fine to coarse, and trace BRICK, medium dense to dense, dark brown with gray and yellow, dry, no plasticity, no cohesion	SM/GW	
7		3.6		(6-7') CONCRETE/BRICK, SAND to GRAVEL sized, medium dense, light reddish brown, dry then very moist at 6.9' bgs, no plasticity, no cohesion	NA	
7	End of Boring					
8						
9						
10						

Total Borehole Depth: 7' bgs due to refusals



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/26/2020
 Weather : Sunny, 70's

Northing (US ft) : 564270.51
 Easting (US ft) : 1461659.20

Boring ID: B9-011-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0		(0-0.5') SILTY SAND with trace SLAG GRAVEL, loose, dark brown, dry, no plasticity, no cohesion	SM	Wet at 9.3' bgs
				(0.5-1.1') CONCRETE, white, dry	NA	
	94	0.0	B9-011-SB-2	(1.1-2.0') Non-native SAND and SLAG, SAND and GRAVEL sized, medium dense, grayish brown, dry, no plasticity, no cohesion	SW/GW	
		0.1		(2-2.5') SLAG GRAVEL to COBBLES, dense, dark brown and grayish brown, moist, no plasticity, no cohesion	GW	
		0.2		(2.5-3.4) CLAY, soft to firm, dark brownish gray to dark gray, moist to very moist, low plasticity, cohesive	CL	
				(3.4-3.8') SLAG, SAND and GRAVEL sized, trace CLAY, medium dense, black, wet, no plasticity, no cohesion	SW/GW	
		1.4	B9-011-SB-5	(3.8-4') CLAY with trace SAND, very firm, dark brown to black, dry, low plasticity, cohesive	CL	
5		0.0		(4-4.3') CLAYEY SAND, medium dense, dark brown, dry, no plasticity, no cohesion	CL	
		0.0		(4.3-6') CLAY with trace SAND, very firm, light gray and black with some reddish yellow, dry, low plasticity, cohesive	CL	
	100	0.0		(6-7.7') CLAY, firm grading to hard, reddish yellow and brownish gray, moist to dry, low plasticity, cohesive	CL	
		0.0		(7.7-8.3') SANDY CLAY, very firm, reddish yellow and light brownish gray, moist, low plasticity, cohesive	CL	
		0.1		(8.3-10') SAND with CLAY, very fine to medium, medium dense to dense, light brownish gray and reddish yellow, very moist to moist then wet at 9.3' bgs, no plasticity, no cohesion	CL	
10		-			SW-SC	
	20	-				
		-				
		0.0				
15				End of Boring		

Total Borehole Depth: 15' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/26/2020
 Weather : Cloudy, 60's

Northing (US ft) : 564154.51
 Easting (US ft) : 1461694.74

Boring ID: B9-012-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.4	B9-012-SB-1	(0-8') Non-native SILTY SAND with some fine SLAG GRAVEL, medium dense, dark brown, dry, no plasticity, no cohesion	SM	
1		1.2				
2	94	1.4				
3		0.1				
4		0.0	B9-012-SB-5			
5		-		(8-9.7') Non-native SILTY SAND with fine to coarse SLAG/BRICK GRAVEL with COBBLES, medium dense, dark brown, yellow, and gray, dry then wet at 9.5' bgs, no plasticity, no cohesion	SM/GW	Wet at 9.5' bgs
6		-				
7	55	-				
8		0.4				
9		0.1				
10	End of Boring					
11						

Total Borehole Depth: 9.7' bgs due to water and refusal



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI/Connelly
 Driller : D. Marchese/R. Mohler
 Drilling Equipment : Geoprobe 7822DT/Sonic

Date : 05/27/2020; 10/08/2020
 Weather : Cloudy, 80's; Sunny 60's
 Northing (US ft) : 564048.20
 Easting (US ft) : 1461581.53

Boring ID: B9-013-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0	B9-013-SB-1	(0-1') Non-native SILTY SAND with CONTRETE and BRICK GRAVEL, medium dense, grayish brown to dark brown with white and red, dry, no plasticity, no cohesion	SM/GW	Wet at 10' bgs
1		-		(1-6') Non-native SAND with SILT and SLAG, SAND and GRAVEL-sized, loose to medium dense, brown and gray, dry to moist, non-plastic, non-cohesive		
2	20	-				
3		24.9			SW-SM	
4		58.5				
5		-				
6		3.7		(6-8') CONCRETE FOUNDATION, white and grayish green, dry	NA	
7	100	59.7				
8		95.5	B9-013-SB-9	(8-10') SLAG GRAVEL with some SLAG, SAND-sized, medium to coarse, brown and gray, very moist, non-plastic, non-cohesive	GW	
9		106.6	B9-013-SB-10			
10		0.2		(10-11.5') CLAYEY SAND and GRAVEL, loose, dark brown with reddish yellow, wet, non-plastic, non-cohesive	SC/GW	
11		5.5				
12	100	10.5		(11.5-12') CLAY with some SAND, soft to firm, reddish yellow and brown, moist, low plasticity, cohesive	CL	
13		12.5		(12-12.5') SAND with CLAY, loose to medium dense, grayish brown with reddish yellow, wet, non-plastic, non-cohesive	SW-SC	
14		12.5		(12.5-15') CLAY, soft to very firm, brown and reddish yellow, moist to very moist, low plasticity, cohesive	CL	
15		15.8				
16				End of Boring		

Total Borehole Depth: 15' bgs due to water.



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI/Connelly
 Driller : D. Marchese/R. Mohler
 Drilling Equipment : Geoprobe 7822DT/Sonic

Date : 05/27/2020; 10/08/2020
 Weather : Sunny, 80's; Sunny 60's

Northing (US ft) : 564015.63
 Easting (US ft) : 1461664.66

Boring ID: B9-014-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0	B9-014-SB-1	(0-0.2') FILL, SAND and GRAVEL sized, loose, very pale brown with red and white, dry, no plasticity, no cohesion	SW/GW	Fibrous material 3.7-4.0' bgs
1		0.0		(0.2-0.9') Non-native SAND with SLAG/BRICK GRAVEL and some SILT, med dense, dark brown, dry, no plasticity, no cohesion	SW/GW	
2	98	0.0		(0.9-1.7') FILL, SAND and GRAVEL sized, loose, very pale brown with red and white, dry, no plasticity, no cohesion	SW/GW	
3		0.0		(1.7-3.7') Non-native SAND with SLAG/BRICK GRAVEL and some SILT, med dense, dark brown, dry, no plasticity, no cohesion	SW/GW	
4		0.0	B9-014-SB-5	(3.7-5') SILTY SAND with GRAVEL, medium dense, dark brown with some gray and yellow, with some fibrous material 3.7-4' bgs, shards of ceramic at 4' bgs, and some shells at 4.5-5' bgs, moist, no plasticity, no cohesion	SM	
5		0.0		(5-5.6') SAND with coarse SLAG GRAVEL and COBBLES, medium dense, yellowish red and gray, moist, no plasticity, no cohesion	SW/GP	
6		0.0		(5.6-6.5') SILTY SAND with GRAVEL, medium dense, dark brown, moist, no plasticity, no cohesion	SM/GW	
7		0.1		(6.5-11') CLAY with trace SLAG COBBLES, very firm, reddish yellow and yellowish brown, dry, low plasticity, cohesive	CL	
8	100	5.8				
9		19.1	B9-014-SB-10			
10		3.0			CL	
11		23.6		(11-13') CLAY with SAND and SILT, soft, dark brown and reddish brown, very moist, low plasticity, cohesive		
12	100	14.6				
13		125.8		(13-14') CLAYEY SAND, medium dense, gray, wet, non-plastic, non-cohesive	SC	Wet at 11' bgs Pungent odor at 12.5' bgs Wood fragments 12.5-13' bgs
14		102.9		(14-15') CLAY with SAND, soft, light brown and grayish brown with reddish yellow, very moist, low plasticity, cohesive	CL	
15				End of Boring		
16						

Total Borehole Depth: 15' bgs due to water.



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/26/2020
 Weather : Sunny, 70's

Northing (US ft) : 564276.65
 Easting (US ft) : 1461945.99

Boring ID: B9-015-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-015-SB-1	(0-1.2') SILTY SAND with some SLAG GRAVEL, loose to medium dense, light gray then dark brown at 1.2' bgs, dry, no plasticity, no cohesion	SM	Wet at 7' bgs
1		0.0		(1.2-5.7') SLAG, SAND and GRAVEL sized, with 1" CLAY lense at 4.5' bgs, dense, light gray to gray, dry then very moist to wet at 2.7' bgs, no plasticity, no cohesion	SW/GW	
2	80	0.1				
3		0.0			SW/GW	
4		0.0	B9-015-SB-5			
5		0.0			CL	
6		0.0		(5.7-6.8') CLAY, soft to very firm, with trace SAND, reddish yellow, moist, low plasticity, cohesive		
7	90	0.0		(6.8-7.4') CLAYEY SAND, dense, yellowish red and light grayish brown, moist then wet at 7' bgs, no plasticity, no cohesion	SC	
8		0.1		(7.4-8.5') SAND with CLAY, dense yellowish red and light grayish brown, wet, no plasticity, no cohesion	SW-SC	
9		0.0		(8.5-10') SAND, fine to medium, with trace GRAVEL at 8.5' bgs, medium dense, yellowish red then very pale brown at 9' bgs, wet, no plasticity, no cohesion	SW	
10				End of Boring		
11						

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/27/2020
 Weather : Cloudy, 70's

Northing (US ft) : 564325.22
 Easting (US ft) : 1462149.92

Boring ID: B9-016-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-016-SB-1	(0-4') SLAG GRAVEL with some SAND-sized SLAG and SILT, medium dense to dense, dark brown to grayish brown with gray at depth, dry then very moist at 2.5' bgs, no plasticity, no cohesion	GW	
1		0.0				
2	76	0.1				
3		0.0				
4		0.0	B9-016-SB-5	(4-6.4') CLAY, soft then hard at 4.6' bgs, dark gray to brownish gray then reddish yellow and pale brown at 4.6' bgs, low plasticity, cohesive	CL	
5		-				
6		0.0		(6.4-7.7') CLAYEY SAND, dense, yellowish red and pale brown, very moist then wet at 7' bgs	SC	Wet at 7' bgs
7	82	0.0				
8		0.0		(7.7-8.3') CLAY, very firm, yellowish red and pale brown, moist, low plasticity, cohesive	CL	
9		0.0		(8.3-9.6') SAND, fine to medium, with trace CLAY, yellowish red, wet, no plasticity, no cohesion	SW	
10		0.0		(9.6-10') CLAY, firm, reddish yellow and pale brown, moist, low plasticity, cohesive	CL	
End of Boring						
11						

Total Borehole Depth: 10' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/27/2020
 Weather : Cloudy, 70's

Northing (US ft) : 564061.98
 Easting (US ft) : 1461866.53

Boring ID: B9-017-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-017-SB-1	(0-10') Non-native SAND and SLAG, SAND and GRAVEL sized, with CLAY lens at 9' bgs, medium dense to dense, dark brown with gray, dry then moist at 9.5' bgs	SW/GW	
	88	0.6				
		0.1				
		0.1				
		1.2	B9-017-SB-5			
5		0.0				
		1.6				
	96	1.2				
		0.4				
		0.1	B9-017-SB-10			
10		-		(10-12') SLAG GRAVEL, fine to coarse, dark brown, wet, no plasticity, no cohesion	GW	Wet at 11.5' bgs
		-				
	70	0.0		(12-12.5') CLAY with SAND, soft, pale brown and dark gray, wet, low pasticity, cohesive	CL	
		0.0		(12.5-15') SLAG, SAND and GRAVEL sized, with SILT, medium dense, very dark brown, wet, no plasticity, no cohesion, with light gray soft CLAY at depth	SW/GW	
		0.0				
15	End of Boring					

Total Borehole Depth: 15' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 05/27/2020
 Weather : Sunny, 70's
 Northing (US ft) : 564044.18
 Easting (US ft) : 1461851.77

Boring ID: B9-018-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.1	B9-018-SB-1	(0-1.7') Non-native SILTY SAND with some fine SLAG GRAVEL, loose to medium dense, dark brown, dry, no plasticity, no cohesion	SM	
	90	0.4		(1.7-3') SLAG GRAVEL, fine to coarse with CLAY and some SAND, medium dense, dark brown with reddish yellow, dry, no plasticity, no cohesion	GW-GC	
		0.3		(3-4') Non-native SAND and GRAVEL, medium dense, pale green, dry, no plasticity, no cohesion, possible foundation/concrete - drillers used macro-core to get through	SW/GW	
		1.0		(4-6') Non-native coarse GRAVEL with CLAY and some SAND, dark gray and brown, dry, no plasticity, no cohesion, possible foundation	GP-GC	
5		-				
	74	0.4		(6-11') SLAG, SAND and GRAVEL sized, dark brown and reddish yellow, dry, no plasticity, no cohesion		
		29.0	B9-018-SB-8			
		1.3			SW/GW	
		1.5	B9-018-SB-10			
10		-				
	70	-		(11-14.8') SAND with SILT and fine GRAVEL, fine to coarse, medium dense, weak red then very dark brown at 14.2' bgs, wet, no plasticity, no cohesion		Wet at 11.5' bgs
		0.0			SW-SM	
		0.6				
		0.0				
15				(14.8-15') SAND, fine to medium, light gray, wet, no plasticity, no cohesion	SW	
				End of Boring		

Total Borehole Depth: 15' bgs due to water



Client : Tradepoint Atlantic
 ARM Project No. : 20010209
 Project Description : Sparrows Point - Parcel B9
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : GSI/Connelly
 Driller : D. Marchese/R. Mohler
 Drilling Equipment : Geoprobe 7822DT/Sonic

Date : 05/27/2020; 10/08/2020
 Weather : Sunny, 70's
 Northing (US ft) : 564011.51
 Easting (US ft) : 1462144.92

Boring ID: B9-019-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B9-019-SB-1	(0-2.1') SILTY SAND with some fine SLAG GRAVEL, medium dense, dark brown with trace light gray, dry, no plasticity, no cohesion	SM	Trace metal shards 2-5' bgs
1		0.0				
2	92	4.4		(2.1-3') SILT with very fine SAND, soft, dark brown with white mottling, very moist, no plasticity, no cohesion	ML	
3		4.0		(3-5') SILTY SAND with SLAG GRAVEL, loose to medium dense, brown to dark brown, moist to very moist, non-plastic, non-cohesive	SM/GW	
4		16.1	B9-019-SB-5			
5		-		(5-10') Large METAL SHARDS		
6		-				
7	0	-				
8		-				
9		-				
10		-		(10-15') NO RECOVERY		
11		-				
12	0	-				
13		-				
14		-				
15		-				Wet at 15' bgs
16		0.9		(15-17') SLAG, GRAVEL-sized, with some SAND-sized, loose, brown, wet, non-plastic, non-cohesive	GW	
17		117.4				
18	100	97.8		(17-20') CONCRETE FOUNDATION, grayish green, dry		
19		63.2			NA	
20		91.2				
21				End of Boring		

Total Borehole Depth: 20' bgs due to water.

APPENDIX C

Parcel B9 - PID Calibration Log

PROJECT NAME: Area B, Parcel B9 Phase II				SAMPLER NAME: L. Perrin			
PROJECT NUMBER: 20010209				DATE: May 2020 - October 2020		PAGE <u>1</u> of <u>1</u>	
DATE/TIME	SAMPLER INITIALS	PID SERIAL #	FRESH AIR CAL	STANDARD	STANDARD CONCENTRATION	METER READING	COMMENTS
5/26/2020 10:00	LLP	592-913262	0.0	Isobutylene	100 ppm	100.0	-
5/27/2020 8:45	LLP	592-913262	0.0	Isobutylene	100 ppm	100.0	-
5/29/2020 9:50	LLP	592-913262	0.0	Isobutylene	100 ppm	100.0	-
6/1/2020 8:50	LLP	592-913262	0.0	Isobutylene	100 ppm	100.0	-
10/8/2020 8:15	LLP	592-910776	0.0	Isobutylene	100.3 ppm	100.0	-
10/12/2020 8:00	LLP	592-910776	0.0	Isobutylene	100 ppm	100.0	-

APPENDIX D

Parcel B9 - IDW Drum Log

Drum Identification Number	Designation	Activity/Phase	Contents	Open Date
1405-Soil-5/26/20-B9	Non-Haz	Parcel B9 Phase II Investigation	Soil	5/26/2020
1406-Decon water-5/26/20-B9	Non-Haz	Parcel B9 Phase II Investigation	Water	5/26/2020
1433-Decon Water-10/5/2020-B11/B17/B9/B20	Non-Haz	Parcel B9 Phase II Investigation	Water	10/5/2020
1434-Soil-10/8/2020-B9	Non-Haz	Parcel B9 Phase II Investigation	Soil	10/8/2020

APPENDIX E



Parcel B19

SW-073-MWS
VOC
SVOC
 Benz[a]anthracene: 0.043 J
 Naphthalene: 0.42
TPH
 DRO: 929 J
Inorganic

SW16-PZM003
VOC
SVOC
TPH
 DRO: 225 J
Inorganic
 Beryllium (T): 5.1
 Cobalt (T): 158
 Manganese (T): 2,360

Parcel B9

**Pennwood
 Power
 Station**

SW-037-MWS
VOC
 Chloroform: 3
SVOC
TPH
 DRO: 345 J
PCB
Inorganic

Parcel B5

SW-039-MWS
VOC
SVOC
 Pentachlorophenol: 1 J
TPH
 DRO: 598 J
PCB
Inorganic
 Thallium (T): 4.1 J

SW-038-MWS
VOC
SVOC
TPH
 DRO: 489 J
PCB
Inorganic
 Chromium VI (T): 5 J
 Vanadium (T): 111

Parcel B13

Area B GW Well
 Fmr. Building
 Parcel Boundary
 (T) = Total Metals

Parcel B9: Area B Shallow Groundwater PAL Exceedances (ug/L) December 4, 2020		Appx. E
ARM Group LLC Engineers and Scientists		Tradepoint Atlantic
		Sparrows Point
		Baltimore County, MD
		ARM Project 20010209

0 75 150 300 Feet

APPENDIX F

QA/QC Tracking Log

Trip Blank:	Date:	Sample IDs:		
TB1	5/26/2020	1) B9-012-SB-1		
		2) B9-012-SB-5		
		3) B9-011-SB-2		
		4) B9-011-SB-5		
		5) B9-010-SB-1.5		
		6) B9-010-SB-5		
		7) B9-015-SB-1		Duplicate: B9-012-SB-5
		8) B9-015-SB-5		Date: 5/26/2020
TB1	5/27/2020	9) B9-016-SB-1	MS/MSD: B9-015-SB-1	
		10) B9-016-SB-5	Date: 5/26/2020	
		11) B9-017-SB-1	Field Blank:	
		12) B9-017-SB-5	Date: 5/26/2020	
		13) B9-017-SB-10	Eq. Blank:	
		14) B9-018-SB-1	Date: 5/26/2020	
		15) B9-018-SB-8		
		16) B9-018-SB-10		
		17) B9-019-SB-1		
		18) B9-014-SB-1		
		19) B9-014-SB-5		
		20) B9-013-SB-1		

Trip Blank:	Date:	Sample IDs:		
TB1	10/8/2020	1) B9-013-SB-9		
		2) B9-013-SB-10		
TB1	10/12/2020	3) B9-009-SB-1		
		4) B9-009-SB-6		
		5)		
		6)		
		7)		Duplicate: B9-009-SB-6
		8)		Date: 10/12/2020
		9)	MS/MSD: B9-013-SB-9	
		10)	Date: 10/8/2020	
		11)	Field Blank:	
		12)	Date: 10/12/2020	
		13)	Eq. Blank:	
		14)	Date: 10/12/2020	
		15)		
		16)		
		17)		
		18)		
		19)		
		20)		

TB1	5/27/2020	1) B9-008-SB-1		
		2) B9-008-SB-5		
TB1	5/29/2020	3) B9-006-SB-1		
		4) B9-006-SB-8		
		5) B9-005-SB-1		
		6) B9-005-SB-4		
		7) B9-003-SB-1	Duplicate: B9-005-SB-1	
		8) B9-003-SB-5	Date: 5/29/2020	
		9) B9-004-SB-1	MS/MSD: B9-006-SB-8	
		10) B9-004-SB-4	Date: 5/29/2020	
		11) B9-001-SB-1	Field Blank:	
		12) B9-001-SB-5	Date: 5/29/2020	
TB1	6/1/2020	13) B9-002-SB-1.5	Eq. Blank:	
		14) B9-002-SB-5	Date: 5/29/2020	
		15) B9-002-SB-10		
		16) B9-007-SB-1		
17) B9-007-SB-5				
18) B9-007-SB-10				
TB1	10/8/2020	19) B9-014-SB-10		
		20) B9-019-SB-5		

	5/26/2020	1) B9-012-SB-1	QA/QC for PAH Soil Data
		2) B9-012-SB-5	
		3) B9-011-SB-2	
		4) B9-011-SB-5	
		5) B9-010-SB-1.5	
		6) B9-010-SB-5	
	5/27/2020	7) B9-015-SB-1	Duplicate: B9-012-SB-1
		8) B9-015-SB-5	Date: 5/26/2020
		9) B9-016-SB-1	MS/MSD: B9-011-SB-5
		10) B9-016-SB-5	Date: 5/26/2020
		11) B9-017-SB-1	Field Blank:
		12) B9-017-SB-5	Date: 5/26/2020
		13) B9-017-SB-10	Eq. Blank:
		14) B9-018-SB-1	Date: 5/26/2020
		15) B9-018-SB-8	
		16) B9-018-SB-10	
		17) B9-019-SB-1	
		18) B9-014-SB-1	
		19) B9-014-SB-5	
		20) B9-013-SB-1	

Soil samples with a sustained PID reading of 10 ppm or greater were collected for VOCs. VOC samples were placed in a cooler with a trip blank.

QA/QC Tracking Log

<u>Trip</u> Blank:	<u>Date:</u>	<u>Sample IDs:</u>		
	5/27/2020	1) B9-008-SB-1	QA/QC for PAH Soil Data	
		2) B9-008-SB-5		
		3) B9-006-SB-1		
		4) B9-006-SB-8		
		5) B9-005-SB-1		
		6) B9-005-SB-4		
		7) B9-003-SB-1		Duplicate: B9-006-SB-1
		8) B9-003-SB-5		Date: 5/29/2020
	5/29/2020	9) B9-004-SB-1	MS/MSD: B9-005-SB-4	
		10) B9-004-SB-4	Date: 5/29/2020	
		11) B9-001-SB-1	Field Blank:	
		12) B9-001-SB-5	Date: 5/29/2020	
		13) B9-002-SB-1.5	Eq. Blank:	
		14) B9-002-SB-5	Date: 5/29/2020	
		15) B9-002-SB-10		
	6/1/2020	16) B9-007-SB-1		
		17) B9-007-SB-5		
		18) B9-007-SB-10		
	10/8/2020	19) B9-014-SB-10		
		20) B9-019-SB-5		

<u>Trip</u> Blank:	<u>Date:</u>	<u>Sample IDs:</u>	
		1)	
		2)	
		3)	
		4)	
		5)	
		6)	
		7)	Duplicate:
		8)	Date:
		9)	MS/MSD:
		10)	Date:
		11)	Field Blank:
		12)	Date:
		13)	Eq. Blank:
		14)	Date:
		15)	
		16)	
		17)	
		18)	
		19)	
		20)	

	10/8/2020	1) B9-013-SB-9	QA/QC for PAH Soil Data
		2) B9-013-SB-10	
	10/12/2020	3) B9-009-SB-1	
		4) B9-009-SB-6	
		5)	
		6)	
		7)	Duplicate: B9-009-SB-6
		8)	Date: 10/12/2020
		9)	MS/MSD: B9-013-SB-9
		10)	Date: 10/8/2020
		11)	Field Blank:
		12)	Date: 10/12/2020
		13)	Eq. Blank:
		14)	Date: 10/12/2020
		15)	
		16)	
		17)	
		18)	
		19)	
		20)	

		1)	
		2)	
		3)	
		4)	
		5)	
		6)	
		7)	Duplicate:
		8)	Date:
		9)	MS/MSD:
		10)	Date:
		11)	Field Blank:
		12)	Date:
		13)	Eq. Blank:
		14)	Date:
		15)	
		16)	
		17)	
		18)	
		19)	
		20)	

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EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs Total Results

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
Cyanide	CN	Soil	mg/kg	20	20	0	20	100.00%
Aluminum	Metal	Soil	mg/kg	20	20	0	20	100.00%
Antimony	Metal	Soil	mg/kg	20	2	0	20	100.00%
Arsenic	Metal	Soil	mg/kg	20	18	0	20	100.00%
Barium	Metal	Soil	mg/kg	20	20	0	20	100.00%
Beryllium	Metal	Soil	mg/kg	20	20	0	20	100.00%
Cadmium	Metal	Soil	mg/kg	20	19	0	20	100.00%
Chromium	Metal	Soil	mg/kg	20	20	0	20	100.00%
Chromium VI	Metal	Soil	mg/kg	20	1	15	5	25.00%
Cobalt	Metal	Soil	mg/kg	20	20	0	20	100.00%
Copper	Metal	Soil	mg/kg	20	20	0	20	100.00%
Iron	Metal	Soil	mg/kg	20	20	0	20	100.00%
Lead	Metal	Soil	mg/kg	20	20	0	20	100.00%
Manganese	Metal	Soil	mg/kg	20	20	0	20	100.00%
Mercury	Metal	Soil	mg/kg	20	16	0	20	100.00%
Nickel	Metal	Soil	mg/kg	20	20	0	20	100.00%
Selenium	Metal	Soil	mg/kg	20	0	0	20	100.00%
Silver	Metal	Soil	mg/kg	20	1	0	20	100.00%
Thallium	Metal	Soil	mg/kg	20	10	0	20	100.00%
Vanadium	Metal	Soil	mg/kg	20	20	0	20	100.00%
Zinc	Metal	Soil	mg/kg	20	20	0	20	100.00%
Aroclor 1016	PCB	Soil	mg/kg	12	0	0	12	100.00%
Aroclor 1221	PCB	Soil	mg/kg	12	0	0	12	100.00%
Aroclor 1232	PCB	Soil	mg/kg	12	3	0	12	100.00%
Aroclor 1242	PCB	Soil	mg/kg	12	0	0	12	100.00%
Aroclor 1248	PCB	Soil	mg/kg	12	0	0	12	100.00%
Aroclor 1254	PCB	Soil	mg/kg	12	3	0	12	100.00%
Aroclor 1260	PCB	Soil	mg/kg	12	3	0	12	100.00%
Aroclor 1262	PCB	Soil	mg/kg	12	0	0	12	100.00%
Aroclor 1268	PCB	Soil	mg/kg	12	0	0	12	100.00%
PCBs (total)	PCB	Soil	mg/kg	12	1	0	12	100.00%
1,1-Biphenyl	SVOC	Soil	mg/kg	20	6	0	20	100.00%
1,2,4,5-Tetrachlorobenzene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
2,3,4,6-Tetrachlorophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2,4,5-Trichlorophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2,4,6-Trichlorophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2,4-Dichlorophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2,4-Dimethylphenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2,4-Dinitrophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2,4-Dinitrotoluene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
2,6-Dinitrotoluene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
2-Chloronaphthalene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
2-Chlorophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2-Methylnaphthalene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
2-Methylphenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
2-Nitroaniline	SVOC	Soil	mg/kg	20	0	0	20	100.00%
3&4-Methylphenol(m&p Cresol)	SVOC	Soil	mg/kg	20	1	5	15	75.00%
3,3'-Dichlorobenzidine	SVOC	Soil	mg/kg	20	0	1	19	95.00%
4-Chloroaniline	SVOC	Soil	mg/kg	20	0	0	20	100.00%
4-Nitroaniline	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Acenaphthene	SVOC	Soil	mg/kg	20	17	0	20	100.00%
Acenaphthylene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Acetophenone	SVOC	Soil	mg/kg	20	6	0	20	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs Total Results

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
Anthracene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Benz[a]anthracene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Benzaldehyde	SVOC	Soil	mg/kg	20	6	4	16	80.00%
Benzo[a]pyrene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Benzo[b]fluoranthene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Benzo[g,h,i]perylene	SVOC	Soil	mg/kg	20	19	0	20	100.00%
Benzo[k]fluoranthene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
bis(2-chloroethoxy)methane	SVOC	Soil	mg/kg	20	0	0	20	100.00%
bis(2-Chloroethyl)ether	SVOC	Soil	mg/kg	20	0	0	20	100.00%
bis(2-Chloroisopropyl)ether	SVOC	Soil	mg/kg	20	0	0	20	100.00%
bis(2-Ethylhexyl)phthalate	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Caprolactam	SVOC	Soil	mg/kg	20	9	0	20	100.00%
Carbazole	SVOC	Soil	mg/kg	20	7	0	20	100.00%
Chrysene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Dibenz[a,h]anthracene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Diethylphthalate	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Di-n-butylphthalate	SVOC	Soil	mg/kg	20	4	0	20	100.00%
Di-n-octylphthalate	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Fluoranthene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Fluorene	SVOC	Soil	mg/kg	20	18	0	20	100.00%
Hexachlorobenzene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Hexachlorobutadiene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Hexachlorocyclopentadiene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Hexachloroethane	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Indeno[1,2,3-c,d]pyrene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Isophorone	SVOC	Soil	mg/kg	20	0	0	20	100.00%
Naphthalene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Nitrobenzene	SVOC	Soil	mg/kg	20	0	0	20	100.00%
N-Nitroso-di-n-propylamine	SVOC	Soil	mg/kg	20	0	0	20	100.00%
N-Nitrosodiphenylamine	SVOC	Soil	mg/kg	20	1	0	20	100.00%
Pentachlorophenol	SVOC	Soil	mg/kg	20	0	5	15	75.00%
Phenanthrene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Phenol	SVOC	Soil	mg/kg	20	2	5	15	75.00%
Pyrene	SVOC	Soil	mg/kg	20	20	0	20	100.00%
Diesel Range Organics	TPH	Soil	mg/kg	20	20	0	20	100.00%
Gasoline Range Organics	TPH	Soil	mg/kg	20	1	0	20	100.00%
Oil & Grease	TPH	Soil	mg/kg	20	15	0	20	100.00%
1,1,1-Trichloroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,1,2,2-Tetrachloroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,1,2-Trichloro-1,2,2-Trifluoroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,1,2-Trichloroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,1-Dichloroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,1-Dichloroethene	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2,3-Trichlorobenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2,4-Trichlorobenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2-Dibromo-3-chloropropane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2-Dibromoethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2-Dichlorobenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2-Dichloroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2-Dichloroethene (Total)	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,2-Dichloropropane	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,3-Dichlorobenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,4-Dichlorobenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs Total Results

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
2-Butanone (MEK)	VOC	Soil	mg/kg	3	0	0	3	100.00%
2-Hexanone	VOC	Soil	mg/kg	3	0	0	3	100.00%
4-Methyl-2-pentanone (MIBK)	VOC	Soil	mg/kg	3	0	0	3	100.00%
Acetone	VOC	Soil	mg/kg	3	0	0	3	100.00%
Benzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Bromodichloromethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Bromoform	VOC	Soil	mg/kg	3	0	0	3	100.00%
Bromomethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Carbon disulfide	VOC	Soil	mg/kg	3	1	0	3	100.00%
Carbon tetrachloride	VOC	Soil	mg/kg	3	0	0	3	100.00%
Chlorobenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Chloroethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Chloroform	VOC	Soil	mg/kg	3	0	0	3	100.00%
Chloromethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
cis-1,2-Dichloroethene	VOC	Soil	mg/kg	3	0	0	3	100.00%
cis-1,3-Dichloropropene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Cyclohexane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Dibromochloromethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Dichlorodifluoromethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Ethylbenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Isopropylbenzene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Methyl Acetate	VOC	Soil	mg/kg	3	0	0	3	100.00%
Methyl tert-butyl ether (MTBE)	VOC	Soil	mg/kg	3	0	0	3	100.00%
Methylene Chloride	VOC	Soil	mg/kg	3	0	0	3	100.00%
Styrene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Tetrachloroethene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Toluene	VOC	Soil	mg/kg	3	0	0	3	100.00%
trans-1,2-Dichloroethene	VOC	Soil	mg/kg	3	0	0	3	100.00%
trans-1,3-Dichloropropene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Trichloroethene	VOC	Soil	mg/kg	3	0	0	3	100.00%
Trichlorofluoromethane	VOC	Soil	mg/kg	3	0	0	3	100.00%
Vinyl chloride	VOC	Soil	mg/kg	3	0	0	3	100.00%
Xylenes	VOC	Soil	mg/kg	3	0	0	3	100.00%
1,4-Dioxane	VOC/SVOC	Soil	mg/kg	3	0	3	0	0.00%

Data validation has been completed for a representative 30% of all samples