

PHASE II INVESTIGATION REPORT

AREA B: PARCEL B21
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of EnviroAnalytics Group (EAG), 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 B21 (the Site). Parcel B21 is comprised of 60.5 acres of the approximately 3,100-acre former steel making facility (**Figure 1**). The Site is bounded to the southwest by a locomotive shop (within Parcel B23), to the northwest by the Tin Mill Canal (TMC), to the east by the former Continuous Sheet Mills inside the greater Finishing Mills Area (within Parcel B22), and to the south by a slab storage area and parking lot (within Parcel B2).

The Phase II Investigation was performed in accordance with procedures outlined in the approved Phase II Investigation Work Plan – Area B: Parcel B21. This Work Plan (Revision 1 dated June 28, 2018) was approved by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) on July 11, 2018. This Work Plan was completed 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.

An application to enter the full Tradepoint Atlantic property (3,100 acres) into the Maryland Department of the Environment 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. Parcel B21 is also part of the acreage that remains subject to the requirements of 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.

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.

Parcel B21 was formerly occupied by a portion of the Finishing Mills Area (consisting primarily of the Continuous Tin Mill) containing numerous steel making facilities. Several iron and steel work processes were completed within the boundary of Parcel B21. The No. 3 Pickler included five pickling tanks used to remove scale from the steel bands. The 48” Tandem Mill reduced the steel strip in thickness, produced a smooth/dense surface, and developed the required metallurgical properties. The No. 6 Washer was used to clean strips from the Tandem Mill with a caustic solution before annealing. The Box Annealing facility annealed coils to varying degrees of hardness determined by the customer’s end use. The No. 5 Continuous Anneal combined the caustic cleaning process with continuous annealing. Product from the No. 5 Continuous Anneal and the batch Box Annealing operation was delivered to the No. 6 Skin Pass Mill. The No. 6 Skin Pass Mill reduced the gauge, tempered the steel, and prepared the surface of the strip for finishing. The No. 3 Duo Mill was used to reduce the thickness of the annealed strip and temper the steel. Three Coil Preparation Lines were used in the Tin Mill to prepare the final product for packaging and shipping. The No. 1 Tin Plate Line applied a tin coating to a prepared coil. The No. 2 Tin Plate Line also applied a tin coating to a prepared coil through a very similar process. In the No. 8 Chrome Line, the strip was plated with chrome. Additional information regarding historic iron and steel work processes can be found in the Parcel B21 Phase II Investigation Work Plan (Revision 1 dated June 28, 2018).

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 boring 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 Work Plan for Parcel B21, groundwater at the Site was investigated as described in the separate Area B Groundwater Investigation Work Plan (Revision 3 dated October 6, 2015), and the Finishing Mills Groundwater Investigation Work Plan (Revision 1 dated July 7, 2016). The final versions of these Work Plans were approved by the agencies on October 5, 2015 and June 28, 2016, respectively. The Area B Groundwater Phase II Investigation Report (Revision 0 dated September 30, 2016) and the Finishing Mills Groundwater Phase II Investigation Report (Revision 0 dated November 30, 2016) have been submitted to the agencies and discuss the detailed findings of each groundwater investigation.

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 Environmental Site Assessment (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.

According to topographic maps provided by EAG, the surface elevations within Parcel B21 range between approximately 8 and 12 feet above mean sea level (amsl). The elevations across the Site appear to be relatively uniform in most areas. Beyond the northern parcel boundary and most of the western parcel boundary, the land surface elevations slope sharply downward to the adjacent TMC. According to Figure B-2 of the Stormwater Pollution Prevention Plan (SWPPP) Revision 6 dated February 22, 2018, surface waters that are collected in the TMC and treated at the Humphrey Creek Wastewater Treatment Plant (HCWWTP) ultimately flow through National Pollutant Discharge Elimination System (NPDES) permitted Outfall 014, which discharges off-site to Bear Creek.

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 35% natural soils and 65% 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 interbedded non-native fill materials (sand, gravel, cobbles, slag, wood, and brick) and natural soils, which included fine-grained sediments (clays and silts) and coarse-grained sediments (sands and gravels). Non-native fill materials were encountered at depths of up to 20 feet below the ground surface (bgs). In addition, drilling refusals were encountered at many of the soil boring locations due to variable thicknesses of concrete. The shallow groundwater table was observed in soil borings at depths ranging from 6 to 16.5 feet bgs across the Site; however, groundwater was not encountered at every boring location. Soil boring observation logs are provided in **Appendix B**. Please note that unless otherwise indicated, 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 140 soil samples (from 68 boring locations) were collected for analysis between July 16, 2018 and September 7, 2018 as part of the Parcel B21 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 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 B21 Work Plan (Revision 1 dated June 28, 2018), and the QAPP.

All site characterization activities were conducted under the property-wide Health and Safety Plan (HASP) provided as Appendix F 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, at least two borings were placed at or around its location using GIS software (ArcMap Version 10.4.1).

Sampling targets included, as applicable, 1) Recognized Environmental Conditions (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. The following RECs were identified in the Parcel B21 Work Plan: Halogen Lines Trenches/Sumps (undesignated REC, Finding 43, also listed as SWMU 88) and Tin Mill Trenches/Sumps (REC 1R, Finding 39, also listed as SWMU 84). There were no additional SWMUs identified at the Site based on the DCC Report, besides those already cross-listed as RECs. The following AOCs in Parcel B21 were identified in the DCC Report: Former 1988 PCB Spill Area (AOC B) and Former 1991 Acid Leak Area (AOC I). All of the identified RECs and AOCs are described in further detail within the Parcel B21 Work Plan.

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 on to the ground. Only drip legs which were located greater than 100 feet from the nearest Phase II Investigation proposed soil boring were included as sampling targets. 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 that included the following: Fuel Shop, Hydraulic Repair Shops, Oil House, Oil Heater, Palm Oil Cooker Aisle, Possible PCB-Contaminated Areas, Chromium Pits, Electric Sub-Stations and Transformers, and numerous Tanks (acid, oil/petrosan/hydraulic, and plating). A summary of the areas that were investigated, along with the applicable boring identification numbers and the analyses performed, has been provided as **Appendix A**. Additional sample locations were distributed to fill in large spatial gaps between proposed borings to provide complete coverage of the Site. During the completion of fieldwork, it was necessary to shift some borings from the approved locations given in the Work Plan, primarily due to access restrictions and/or refusal. **Table 2** provides the identification numbers of the 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. As defined in the Work Plan, Parcel B21 contained a total of 9.4 acres without engineered barriers and 51.1 acres with engineered barriers. In accordance with the relevant sampling density requirements, a minimum of 10 soil boring locations were required to cover the area without engineered barriers, and a minimum of 13 soil boring locations were required to cover areas with engineered barriers. A total of 23 borings were required to meet the density specification; however, 73 borings were advanced during this Phase II Investigation, with analytical samples successfully collected from 68 locations. The number of completed borings and any deviations from the original sampling plan are further described in Section 3.2.

3.2. SOIL INVESTIGATION

Continuous core soil borings were advanced at 73 locations across the Site to assess the presence or absence of soil contamination, and to assess the vertical distribution of any encountered contamination (**Figure 3**). Analytical soil samples were successfully collected from 68 of the completed locations. The 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). At each of the completed 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**. Unless otherwise indicated, all USCS group symbols provided on the attached boring logs are from visual observations.

Due to the presence of thick concrete slabs across much of the Site, numerous boring locations encountered equipment refusal while using the Geoprobe® direct push unit. A concrete-coring subcontractor was engaged to core through the slabs to facilitate the collection of analytical samples at the locations where refusal was encountered at the surface. B21-037-SB was not able to be cored by the subcontractor due to the presence of soil overlying thick concrete, and this location was not completed. In addition, analytical samples were not able to be collected from five locations that were cored by the subcontractor (B21-041-SB, B21-042-SB, B21-056-SB, B21-061-SB, and B21-062-SB) due to equipment refusal and/or lack of recovery below the cored hole. The specific conditions which prevented sample collection can be viewed on the boring logs in **Appendix B**.

In each boring, one shallow sample was collected from the 0 to 1 foot depth interval. If a concrete slab or surface cover materials (such as paving or gravel) were present, the first 1 foot of soil beneath this layer was collected as the shallow sample. In many cases, the “shallow” soil samples were collected from depths that were deeper than is typical for other similar investigations on the property due to the thicknesses of the concrete slabs present in the former Continuous Tin Mill. In many cases, the shallow samples that are usually collected from the 0 to 1 foot depth interval were collected from depths of 2 or 3 feet bgs, or in a few select cases as deep as 4 feet bgs. The adjusted shallow samples were analyzed in accordance with the usual requirements for shallow soil samples.

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 samples was also collected from the 9 to 10 foot depth interval if groundwater had not been encountered. It should be noted that soil samples were not collected from a depth that was below the water table. The 10-foot bgs samples may have been held by the laboratory prior to analysis in accordance with the requirements given in the Parcel B21 Work Plan. These project-specific requirements for the analysis of 10-foot bgs samples are further described below.

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. Down-hole soil sampling equipment was decontaminated after soil sampling had been concluded at a 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 may have been held prior to analysis in accordance with the Parcel B21 Work Plan. Excluding these deep samples, the

remaining soil samples were analyzed for Target Compound List (TCL) semi-volatile organic compounds (SVOCs) via USEPA Methods 8270 and 8270 SIM, 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. 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. Additionally, the 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. As noted above, several of the shallow samples were collected from depths that were deeper than is typical due to the presence of thick concrete slabs. Select locations in the vicinity of the historical PCB spill designated as AOC B were analyzed for PCBs at additional sample depths. Sample containers, preservatives, and holding times for the sample analyses are listed in the QAPP Worksheet 19 & 30 – Sample Containers, Preservation, and Holding Times.

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 0 to 1 and 4 to 5 foot bgs (or field adjusted interval) samples. If the 9 to 10 foot bgs interval exhibited a sustained PID reading of 10 ppm, this sample was released to be analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, and Oil & Grease. However, the samples for metals and cyanide were 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.

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, composite samples were gathered with aliquots from each of the Parcel B21 Phase II IDW soil drums for waste characterization. Following the analysis of each sample, the waste soil 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 were characterized by preparing composite samples from randomly selected

drums. Each composite sample 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. Following the analysis of each sample, the aqueous waste was 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 the 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 are summarized and compared to the PALs in **Table 5** (Organics) and **Table 6** (Inorganics). 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

As provided in **Table 5**, several VOCs were identified above the laboratory's method detection limits (MDLs) in the soil samples collected from across the Site. 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 polynuclear aromatic hydrocarbons (PAHs) have been adjusted upward based on revised toxicity data published in the USEPA RSL Composite Worker Soil Table. Therefore, exceedances for PAHs are based on the adjusted PALs rather than those presented in the QAPP. Five SVOCs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and hexachlorobenzene) were detected above their PAL. Benzo[a]pyrene was the most common exceedance and was detected above the PAL in 20 soil samples with a maximum detection of 32.8 mg/kg in sample B21-003-SB-5. The SVOC PAL exceedance locations and results are provided on **Figure S1**.

Shallow soil samples collected across the Site from the 0 to 1 foot bgs (or adjusted) interval were analyzed for PCBs. Numerous shallow soil sample intervals required shifting to greater sampling depths due to surficial concrete. As previously stated, select locations in the vicinity of the historical PCB spill designated as AOC B were analyzed for PCBs at additional sample depths. **Table 5** provides a summary of PCBs detected above the laboratory's MDLs. Two PCB mixtures (Aroclor 1248 and Aroclor 1260) and total PCBs were detected above the specified PALs. The maximum PCB detection was 15.9 mg/kg of Aroclor 1260 (and total PCBs) in B21-039-SB-2. The PCB PAL exceedance locations and results are provided on **Figure S2**.

Table 5 provides a summary of the TPH/Oil & Grease detections above the laboratory's MDLs in the soil samples collected in the parcel. Exceedances of the Oil & Grease PAL (6,200 mg/kg) were noted in two shallow samples: B21-012-SB-1 with a detection of 19,200 mg/kg and B21-060-SB-1 with a detection of 12,400 mg/kg. Both of these locations had underlying soil samples (above the observed water table) which had significantly lower detections of Oil & Grease that did not exceed the PAL. The 5-foot sample at B21-012-SB had an Oil & Grease detection of 215 mg/kg, and the 4-foot sample at B21-060-SB had an Oil & Grease detection of 470 mg/kg, both of which are significantly below the PAL. There were no PAL exceedances of TPH-DRO or TPH-GRO in any of the soil samples collected at the Site. No physical evidence of non-aqueous phase liquid (NAPL) was noted in the soil cores collected from B21-012-SB or B21-060-SB, or any other soil borings completed under this investigation. Given the lack of physical evidence of NAPL in B21-012-SB and B21-060-SB, and the lack of significant Oil & Grease impacts at greater soil depths, further delineation was not warranted. The Oil & Grease PAL exceedance locations and results are provided on **Figure S3**.

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. Six inorganic compounds (arsenic, hexavalent chromium, lead, manganese, thallium, and vanadium) were detected above their respective PALs. Arsenic was by far the most common inorganic exceedance. It was detected above its PAL of 3 mg/kg in 104 soil samples collected from the Site, with a maximum detection of 40.1 mg/kg at B21-045-SB-3.5. The remaining inorganic exceedances in soil were less common by comparison. Hexavalent chromium was detected above its PAL in two samples with a maximum detection of 14.9 mg/kg in B21-036-SB-5. Lead was detected above its PAL in three samples with a maximum detection of 1,610 mg/kg in B21-048-SB-1. Manganese was detected above its PAL in 20 samples with a maximum detection of 74,300 mg/kg in B21-072-SB-1. Thallium was detected above its PAL in 22 samples with a maximum detection of 178 mg/kg in B21-014-SB-8. Vanadium was detected above its PAL in two samples with a maximum detection of 13,400 mg/kg in B21-013-SB-5. The inorganic PAL exceedance locations and results are provided on **Figure S4**.

4.1.3. Soil Conditions: Results Summary

Table 5 and **Table 6** provide summaries of the detected organic and inorganic compounds in the soil samples submitted for laboratory analysis, and **Figure S1** through **Figure S4** present the soil boring locations and sample results that exceeded the PALs. **Table 7** provides a summary of results for all PAL exceedances in soil, including maximum values and detection frequencies. **Table 8** indicates which soil impacts (PAL exceedances) are associated with the specific targets listed in the Parcel B21 Work Plan. Exceedances of the PALs among the Parcel B21 soil samples consisted of five SVOCs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene,

dibenz[a,h]anthracene, and hexachlorobenzene), two PCB mixtures (Aroclor 1248 and Aroclor 1260) and total PCBs, Oil & Grease, and six inorganics (arsenic, hexavalent chromium, lead, manganese, thallium, and vanadium). There were no detections of VOCs or TPH-DRO/GRO above the applicable PALs. No physical evidence of NAPL was observed in the soil cores from any soil borings completed under this investigation.

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. There were two shallow soil samples where detections of Oil & Grease exceeded the PAL of 6,200 mg/kg: B21-012-SB-1 and B21-060-SB-1. Both identified boring locations should be considered for proximity to proposed utilities in any future development plans. Physical evidence of petroleum (i.e., NAPL or sheen) was not observed in any boring at the Site.

4.2. GROUNDWATER CONDITIONS – AREA B AND FINISHING MILLS INVESTIGATIONS

As specified in the approved Parcel B21 Work Plan, groundwater at the Site was investigated as described in the separate Area B Groundwater Investigation Work Plan (dated October 6, 2015) and the separate Finishing Mills Groundwater Investigation Work Plan (dated July 7, 2016). A separate Area B Groundwater Phase II Investigation Report (Revision 0 dated September 30, 2016) and Finishing Mills Groundwater Phase II Investigation Report (Revision 0 dated November 30, 2016) have been submitted to discuss the detailed findings of these groundwater investigations. Groundwater results obtained during these investigations were screened against the PALs established in the QAPP (or other direct guidance from the agencies) to determine exceedances. The complete findings of the groundwater investigations, including detection summary tables and exceedance figures, were provided in the respective Phase II Investigation Reports. A figure summarizing the shallow aqueous PAL exceedances (for all classes of compounds) within or proximate to Parcel B21 is provided as **Appendix E**. The groundwater results obtained from the intermediate and lower hydrogeologic zones are not relevant for this Parcel B21 investigation but can be reviewed in the separate groundwater reports.

Regarding shallow groundwater exceedances, some of the PALs have been updated since the submission of the Area B Groundwater Phase II Investigation Report and the Finishing Mills Groundwater Phase II Investigation Report. In particular, the aqueous screening levels for some PAH constituents 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 within or proximate to Parcel B21 consisted of four VOCs (1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, and chloroform), three SVOCs (1,4-dioxane, benz[a]anthracene, and naphthalene), five total/dissolved metals (cobalt, iron, manganese, thallium, and vanadium), cyanide, and DRO. For simplicity, the inorganic PAL exceedances shown on the figure do not include duplicate exceedances of total and dissolved metals at relevant sample locations. If both total and dissolved concentrations exceeded the PAL for a specific compound, the value for total metals is displayed on the figure for each sample.

Each permanent well or temporary groundwater sample collection point sampled during the Area B Groundwater Investigation or the Finishing Mills 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 groundwater sample points completed under either investigation.

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 $1E-5$ or Target Hazard Quotient (THQ) of 1) as determined by the Vapor Intrusion Screening Level (VISL) Calculator version 3.5 (<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. Total cyanide had previously been identified as a potential VI hazard in the Finishing Mills Groundwater Phase II Investigation Report at several locations within and proximate to Parcel B21, but the screening level for cyanide has since been adjusted upward by the USEPA, eliminating this concern at all but one location near the western boundary of the Site (SW-081-MWS). Supplemental sampling has since been conducted at the identified location (outside of the scope of the Finishing Mills Groundwater Investigation) to determine the speciation of cyanide, and the results have indicated that available cyanide is not present at concentrations that could pose a potential VI 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, Oil & Grease, or TPH-DRO/GRO) 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 most current USEPA RSLs) or based on other direct guidance from the agencies, to identify the presence of 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 submitted for analysis to support the data validation:

- Trip Blank – at a rate of one per cooler with VOC samples
 - 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 Chain of Custody forms 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 and/or checked once per day. The logs have been provided in **Appendix C** (PID calibration log).

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% of the environmental sample analyses performed by PACE 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 QAPP 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 evaluation. The soil results that were rejected are given in **Table 9**. Data completeness (the proportion of valid data) is discussed 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 collection of soil 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% of sample results which were randomly selected for validation.

A total of four analytes (1,1,2,2-tetrachloroethane, 1,4-dioxane, benzaldehyde, and hexavalent chromium) did not meet the completeness goal of 90% for soils in Parcel B21. Benzaldehyde had a completeness value of 46% among 57 validated samples. The maximum rejected result of benzaldehyde was 1.9 mg/kg, which is significantly below the PAL of 120,000 mg/kg. The full dataset for 1,4-dioxane which underwent validation was rejected (with only three samples undergoing validation). Among the results reported by the laboratory (including those which did not undergo validation), there was a single detection of 1,4-dioxane at 0.38 mg/kg, which is also well below the PAL of 24 mg/kg. There were no detections of 1,1,2,2-tetrachloroethane (67% completeness with one rejected result out of three validated samples) throughout the Site. Hexavalent chromium had a completeness value of 35% among 57 validated samples. According to the validation report, severe interferences and/or digestion issues caused hexavalent chromium non-detects to be rejected and detections to be marked with a J- flag, indicating a result that is considered biased low. Hexavalent chromium had two detections that exceeded the PAL of 6.3 mg/kg (14.9 mg/kg and 7.1 mg/kg), and the largest rejected (non-detect) hexavalent chromium result was only 1.6 mg/kg.

Overall, the soil data can be used as intended, and significant data gaps were not identified. While a limited set of compounds did not meet the completeness goal of 90%, based on the infrequency and low magnitude of soil detections these do not appear to represent significant data gaps at the Site.

6.0 FINDINGS AND RECOMMENDATIONS

The objective of this Phase II Investigation was to characterize the nature and extent of contamination at the Site. During the Phase II Investigation, a total of 140 soil samples (all locations/depths) were collected and analyzed to define the nature and extent of contamination in Parcel B21. 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. Soil samples were analyzed for TCL-VOCs, TCL-SVOCs, Oil & Grease, TPH-DRO/GRO, TAL-Metals, hexavalent chromium, cyanide, and/or PCBs based on 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 of VOCs or TPH-DRO/GRO, indicating that these compounds are not significant contaminants in soil at the Site. Exceedances of the soil PALs within Parcel B21 were limited to six inorganics (arsenic, hexavalent chromium, lead, manganese, thallium, and vanadium), five SVOCs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and hexachlorobenzene), two PCB mixtures (Aroclor 1248 and Aroclor 1260) and total PCBs, and Oil & Grease.

Arsenic was detected in 81% of the analyzed soil samples, with 104 total PAL exceedances and a maximum detection of 40.1 mg/kg in B21-045-SB-3.5. Hexavalent chromium was detected above its PAL in two samples with a maximum detection (14.9 mg/kg) at B21-036-SB-5. Lead was detected above its PAL in three samples with a maximum detection (1,610 mg/kg) at B21-048-SB-1. Manganese was detected above its PAL in 20 samples with a maximum detection (74,300 mg/kg) at B21-072-SB-1. Thallium was detected above its PAL in 22 samples with a maximum detection (178 mg/kg) at B21-014-SB-8. Vanadium was detected above its PAL in two samples with a maximum detection (13,400 mg/kg) at B21-013-SB-5. Benzo[a]pyrene was the most common SVOC exceedance and was detected in 20 soil samples with a maximum detection of 32.8 mg/kg in B21-003-SB-5. The maximum PCB detection was 15.9 mg/kg of Aroclor 1260 (which matched the reported concentration of total PCBs) in B21-039-SB-2.

Elevated concentrations of Oil & Grease were identified above the PAL (6,200 mg/kg) in two shallow samples (B21-012-SB-1 and B21-060-SB-1) with detections of 19,200 mg/kg and 12,400 mg/kg, respectively. However, no physical evidence of NAPL was noted in these soil cores and Oil & Grease detections in the underlying soil samples (above the water table) were

significantly below the PAL. There were no PAL exceedances of TPH-DRO or TPH-GRO in any of the soil samples collected at the Site. No physical evidence of petroleum (i.e., NAPL or sheen) was noted in any soil borings completed under this investigation.

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 and Finishing Mills Groundwater Phase II Investigations which include the groundwater data obtained within and proximate to Parcel B21 are presented within the Area B Groundwater Phase II Investigation Report (Revision 0 dated September 30, 2016) and the Finishing Mills Groundwater Phase II Investigation Report (Revision 0 dated November 30, 2016), which were submitted to the agencies for review. An aqueous PAL exceedance figure is provided in **Appendix E** to indicate the locations of any shallow groundwater exceedances from either 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 and Finishing Mills Groundwater Investigations, there were no potential VI risks identified from the permanent monitoring wells or temporary groundwater sample collection points located within or proximate to Parcel B21. Total cyanide had previously been identified as a potential VI hazard at several locations, but the screening level for cyanide has since been adjusted upward by the USEPA, eliminating this concern at all but one location (SW-081-MWS). Supplemental sampling has since been conducted at the identified location (outside of the scope of the Finishing Mills Groundwater Investigation) to determine the speciation of cyanide, and the results have indicated that available cyanide is not present at concentrations that could pose a potential VI concern.

6.3. RECOMMENDATIONS

Sufficient remedial investigation data has been collected to evaluate the nature and extent of possible constituents of concern in Parcel B21. The presence and absence of soil impacts within Parcel B21 have been adequately described and further investigation is not warranted to characterize overall conditions. Recommendations for the parcel are as follows:

- Soil borings with elevated Oil & Grease concentrations (B21-012-SB and B21-060-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 Response and Development Work Plan.

7.0 REFERENCES

- ARM Group Inc. (2016). *Area B Groundwater Phase II Investigation Report*. Revision 0. September 30, 2016.
- ARM Group Inc. (2016). *Finishing Mills Groundwater Phase II Investigation Report*. Revision 0. November 30, 2016.
- ARM Group Inc. (2015). *Phase II Investigation Work Plan: Area B Groundwater Investigation*. Revision 3. October 6, 2015.
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- ARM Group Inc. (2016). *Quality Assurance Project Plan: Sparrows Point Terminal Site*. Revision 3. April 5, 2016.
- ARM Group Inc. (2018). *Stormwater Pollution Prevention Plan (SWPPP)*. Revision 6. February 22, 2018.
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- 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

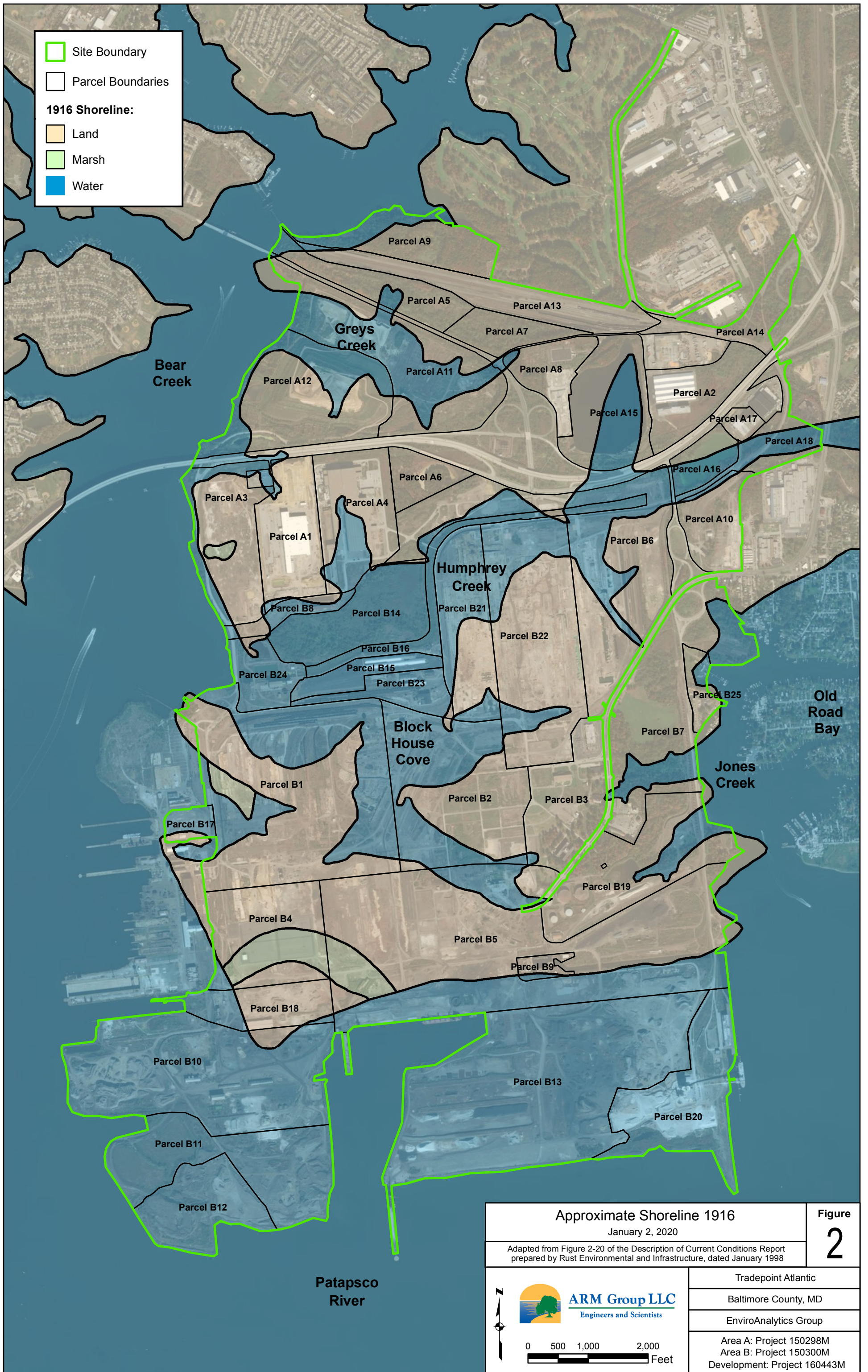
January 2, 2020

Figure
1



ARM Group LLC
 Engineers and Scientists

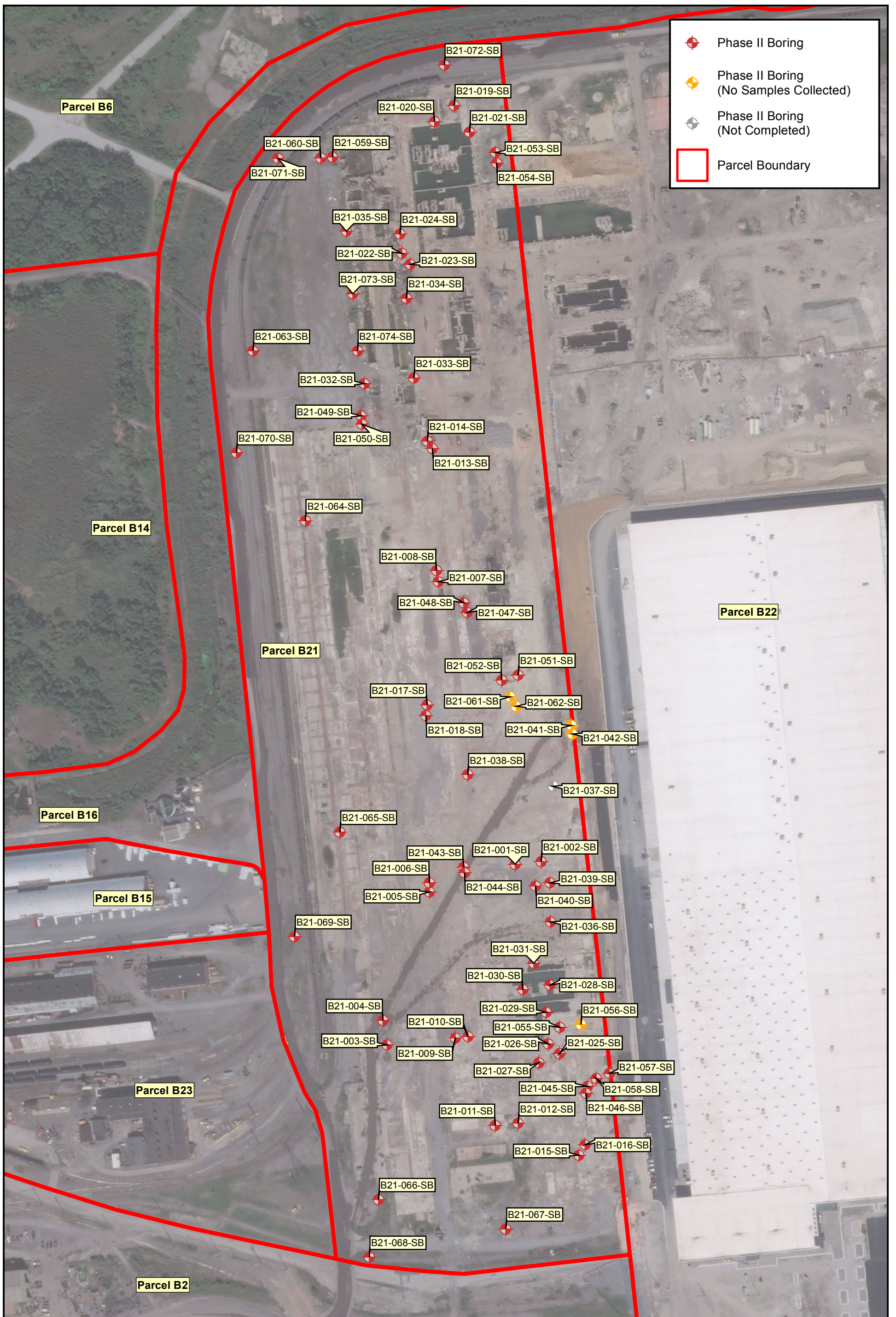
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 Feet





Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
Area A: Project 150298M Area B: Project 150300M Development: Project 160443M





Site Boundary
 Parcel Boundaries
1916 Shoreline:
 Land
 Marsh
 Water

Approximate Shoreline 1916 January 2, 2020		Figure 2
Adapted from Figure 2-20 of the Description of Current Conditions Report prepared by Rust Environmental and Infrastructure, dated January 1998		
	Tradepoint Atlantic Baltimore County, MD	
	EnviroAnalytics Group	
	Area A: Project 150298M Area B: Project 150300M Development: Project 160443M	



-  Phase II Boring
-  Phase II Boring (No Samples Collected)
-  Phase II Boring (Not Completed)
-  Parcel Boundary

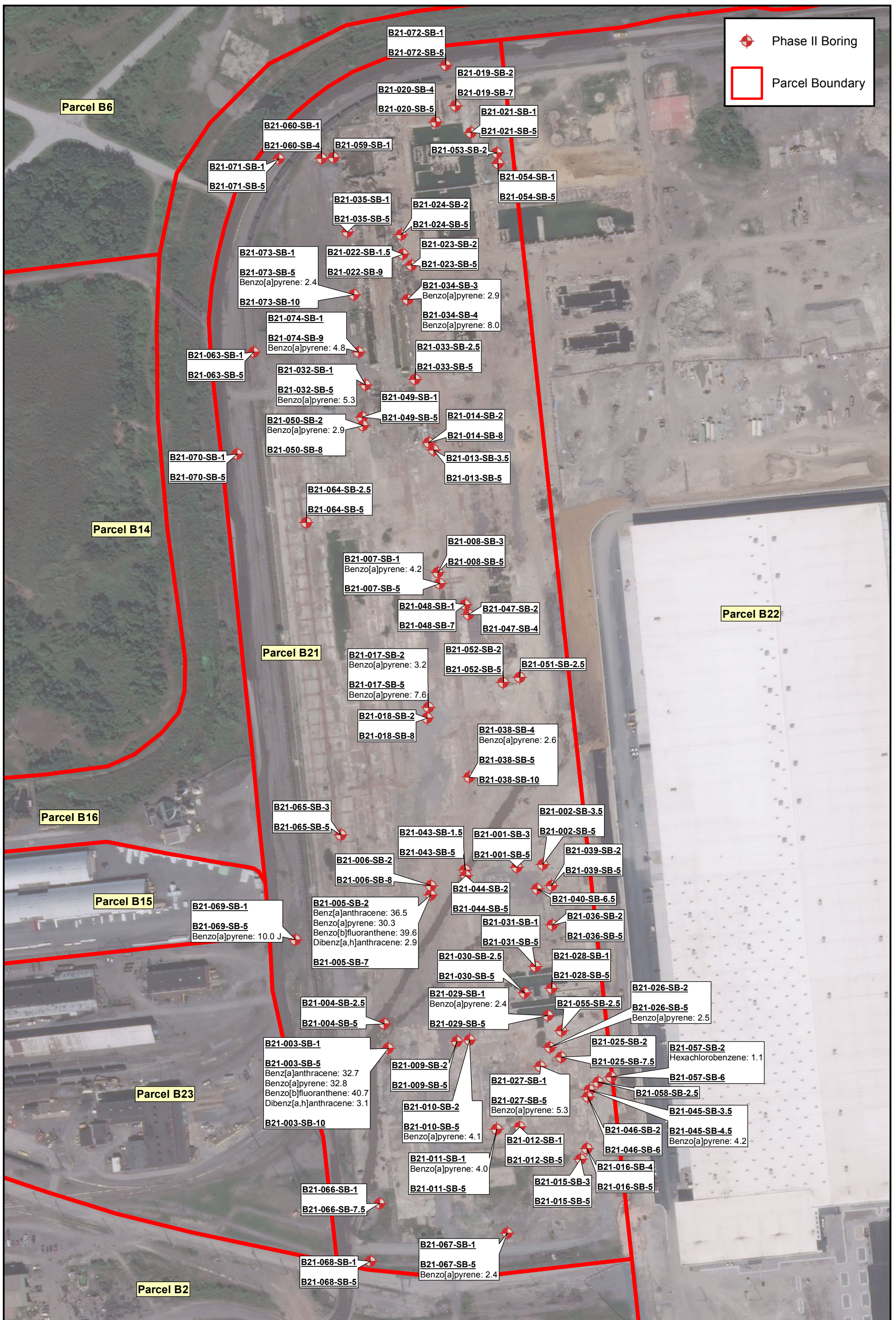
ARM Group LLC
Engineers and Scientists

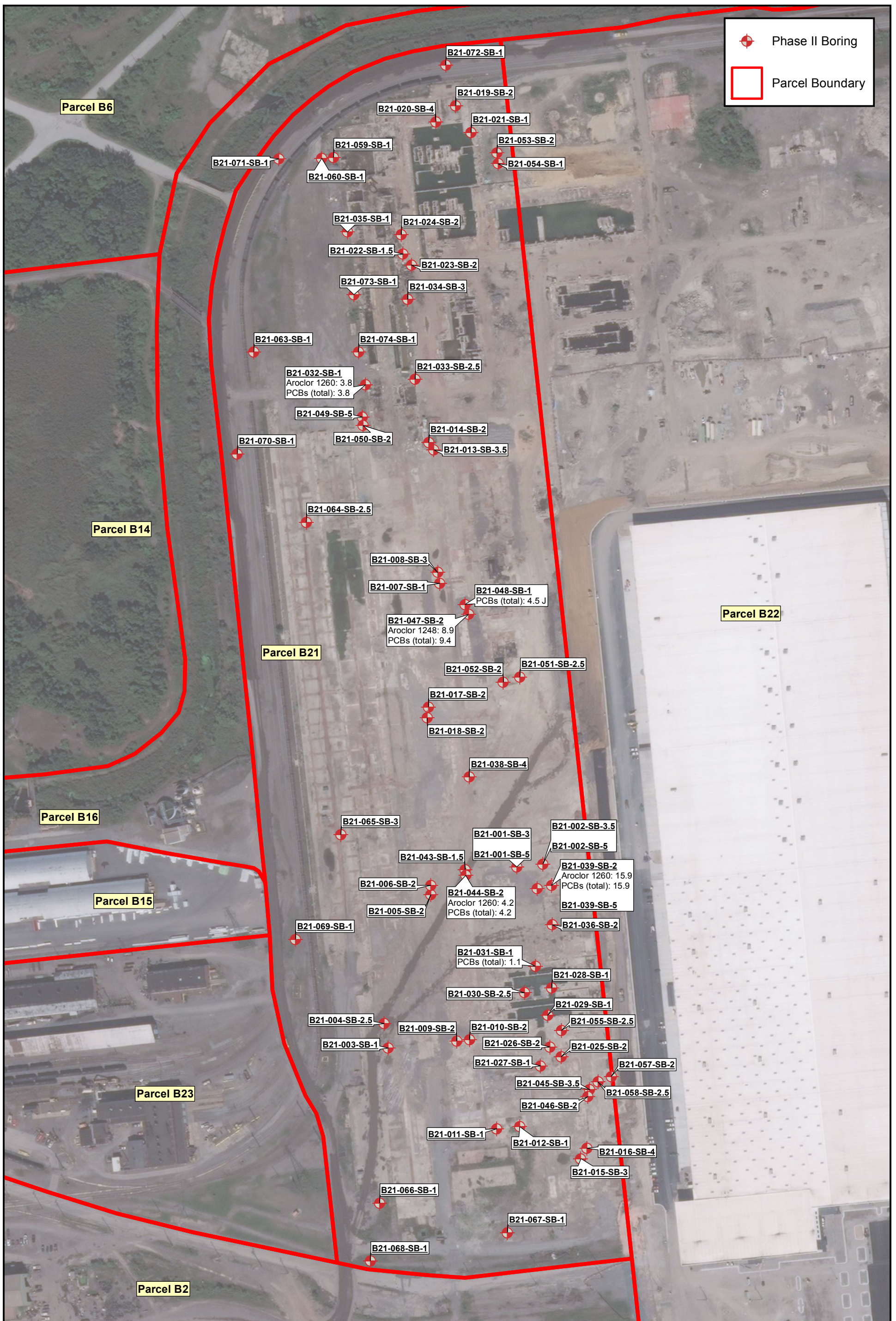
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Parcel B21
Soil Sample Locations
January 14, 2020


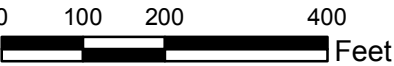
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-19

Figure
3





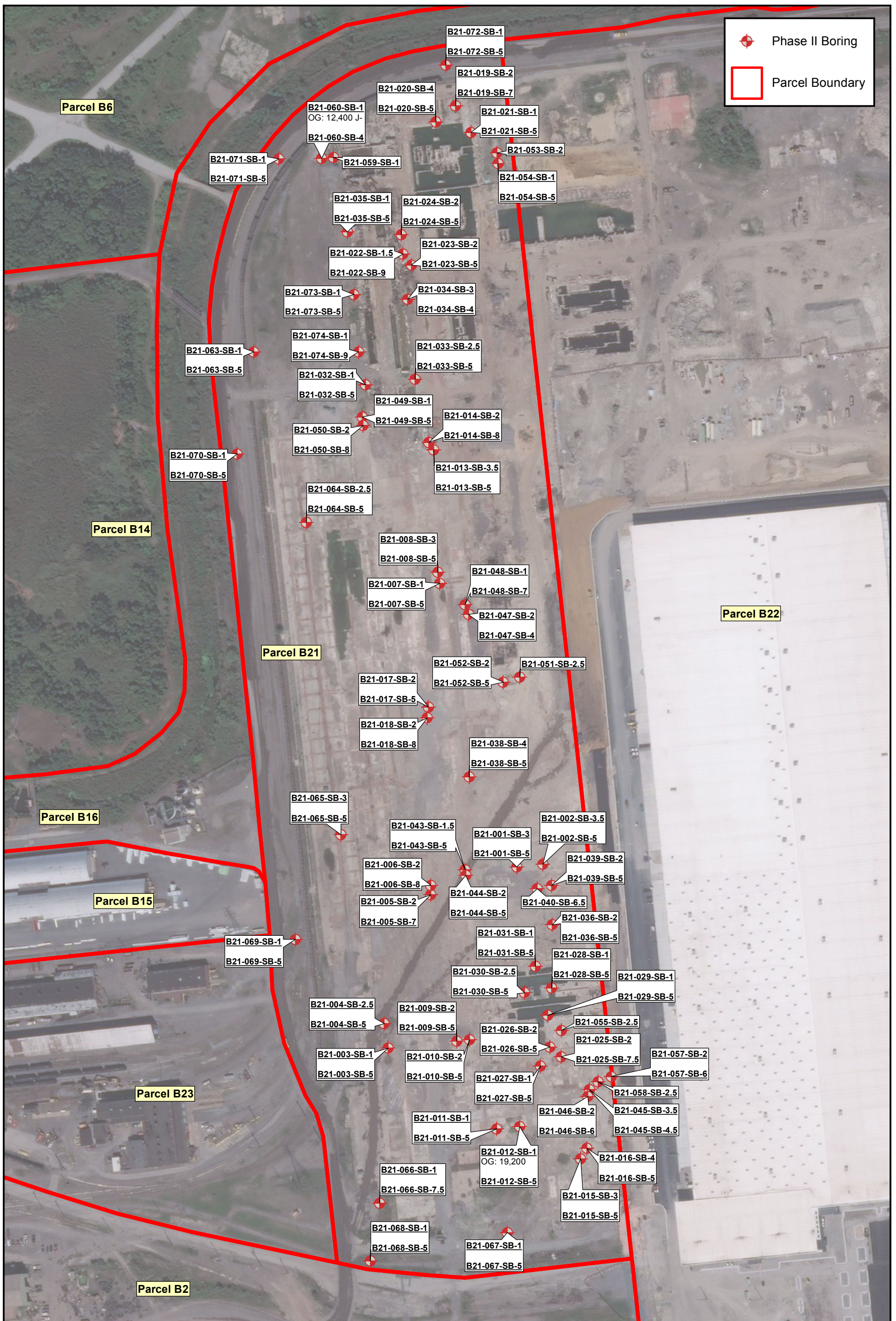
 Phase II Boring
 Parcel Boundary




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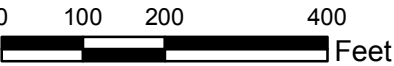
Parcel B21
Soil Sample Locations
PCB PAL Exceedances (mg/kg)
 January 14, 2020

Tradepoint Atlantic
 Baltimore County, MD
 EnviroAnalytics Group
 ARM Project 150300M-19

Figure
S2



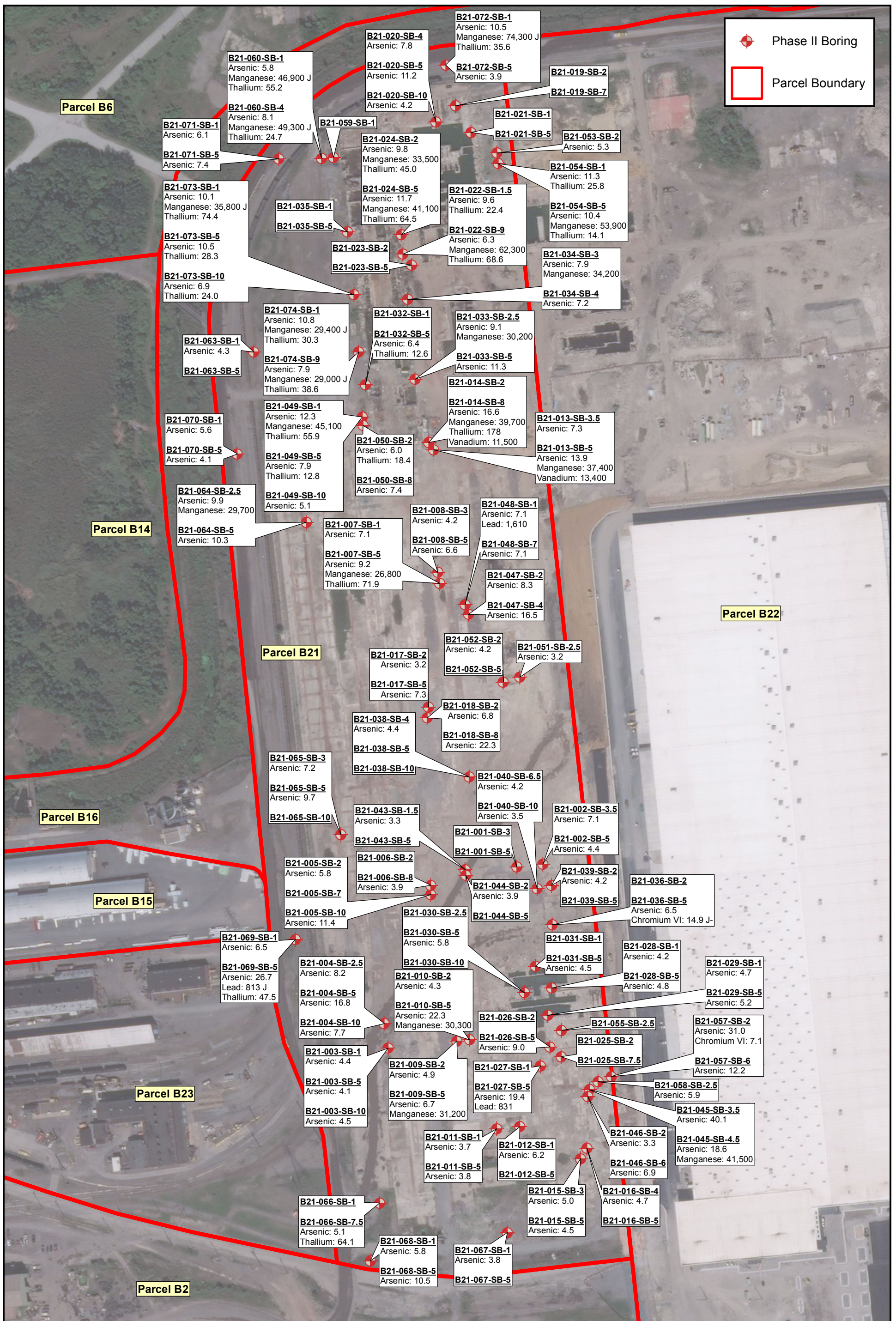
 Phase II Boring
 Parcel Boundary


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Parcel B21
Soil Sample Locations
O&G PAL Exceedances (mg/kg)
 January 14, 2020

Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-19

Figure
S3



TABLES

**Table 1 - Parcel B21
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.)	5034	6/23/1958	3/19/1982
		5040	6/15/1958	3/19/1982
		5045	9/21/1959	3/19/1982
		5050	<i>Unknown</i>	3/18/1982
Plant Index	Roads, water bodies, demolished buildings/structures, electric lines, above-ground pipelines	5134	<i>Unknown</i>	1/8/2008
		5140	<i>Unknown</i>	8/15/2008
		5145	<i>Unknown</i>	8/18/2008
		5150	<i>Unknown</i>	8/18/2008
Plant Sewer Lines	Same as above plus trenches, sumps, underground piping (includes pipe materials)	5534	8/28/1959	3/19/1976
		5540	6/15/1958	7/14/1991
		5545	9/21/1959	6/6/1985
		5550	9/16/1959	3/5/1976
Drip Legs	Coke Oven Gas Drip Legs Locations	5886B	<i>Unknown</i>	Sept. 1988
		5888	<i>Unknown</i>	Sept. 1988

**Table 2 - Parcel B21
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>		
B21-006-SB	Drip Legs	569,232	1,460,459	569,241	1,460,460	9	N
B21-011-SB	Hydraulic Repair Shop	568,606	1,460,634	568,593	1,460,635	12	SE
B21-012-SB	Hydraulic Repair Shop	568,614	1,460,692	568,598	1,460,697	16	SE
B21-026-SB	Possible PCB-Contaminated Area	568,817	1,460,769	568,811	1,460,777	10	SE
B21-027-SB	Possible PCB-Contaminated Area	568,757	1,460,740	568,760	1,460,752	12	NE
B21-029-SB	Possible PCB-Contaminated Area	568,883	1,460,770	568,895	1,460,771	12	N
B21-043-SB	Transformer	569,273	1,460,560	569,282	1,460,551	12	NW
B21-046-SB	Transformer	568,679	1,460,884	568,679	1,460,876	7	W
B21-052-SB	Hydro Oil Reclaim Tank	569,791	1,460,669	569,781	1,460,653	19	SW
B21-063-SB	Parcel B21 Coverage	570,844	1,460,033	570,658	1,459,989	191	SW
B21-070-SB	Parcel B21 Coverage	570,324	1,459,967	570,387	1,459,946	68	NW

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

**Table 3 - Parcel B21
Characterization Results for Solid IDW**

Sample ID	Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	LOQ (mg/L)
B21 Waste Disposal 8/17/2018	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	0.1	7.5	no	U	0.1
	2,4,5-Trichlorophenol	0.25	400	no	U	0.25
	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	0.1	200	no	U	0.1
	3&4-Methylphenol(m&p Cresol)	0.2	200	no	U	0.2
	Arsenic	0.025	5	no	U	0.025
	Barium	0.21	100	no		0.05
	Benzene	0.05	0.5	no	U	0.05
	Cadmium	0.015	1	no	U	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	0.025	5	no	U	0.025
	Hexachlorobenzene	0.1	0.13	no	U	0.1
	Hexachloroethane	0.1	3	no	U	0.1
	Lead	0.05	5	no	U	0.05
	Mercury	0.001	0.2	no	U	0.001
	Nitrobenzene	0.1	2	no	U	0.1
	Pentachlorophenol	0.25	100	no	U	0.25
	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 B21
Characterization Results for Solid IDW**

Sample ID	Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	LOQ (mg/L)
B21 Waste Disposal 10/30/18	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	0.073	100	no	B	0.05
	Benzene	0.05	0.5	no	U	0.05
	Cadmium	0.015	1	no	U	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	0.025	5	no	U	0.025
	Hexachlorobenzene	0.1	0.13	no	U	0.1
	Hexachloroethane	0.2	3	no	U	0.2
	Lead	0.025	5	no	U	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

U: The analyte was not detected in the sample. The 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 B21
Characterization Results for Liquid IDW**

Sample ID	Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	LOQ (mg/L)
Water Disposal 8/17/2018	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	0.0025	400	no	U	0.0025
	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)	0.151	200	no		0.05
	2-Methylphenol	0.00073	200	no	J	0.001
	3&4-Methylphenol(m&p Cresol)	0.00067	200	no	J	0.002
	Arsenic	0.0038	5	no	J	0.005
	Barium	0.101	100	no		0.01
	Benzene	0.0993	0.5	no		0.005
	Cadmium	0.0304	1	no		0.003
	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	0.0066	5	no		0.005
	Hexachlorobenzene	0.001	0.13	no	U	0.001
	Hexachloroethane	0.001	3	no	U	0.001
	Lead	0.0396	5	no		0.005
	Mercury	0.0002	0.2	no	U	0.0002
	Nitrobenzene	0.001	2	no	U	0.001
	Pentachlorophenol	0.0025	100	no	U	0.0025
	Selenium	0.008	1	no	U	0.008
	Silver	0.0013	5	no	J	0.006
	Tetrachloroethene	0.005	0.7	no	U	0.005
	Trichloroethene	0.0028	0.5	no	J	0.005
	Vinyl chloride	0.005	0.2	no	U	0.005

**Table 4 - Parcel B21
Characterization Results for Liquid IDW**

Sample ID	Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	LOQ (mg/L)
Water Waste 10/31/18	1,1-Dichloroethene	0.001	0.7	no	U	0.001
	1,2-Dichloroethane	0.0014	0.5	no		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	0.00099	2	no	U	0.001
	2,4-Dinitrotoluene	0.00099	0.13	no	U	0.001
	2-Butanone (MEK)	0.01	200	no	U	0.01
	2-Methylphenol	0.00099	200	no	U	0.001
	3&4-Methylphenol(m&p Cresol)	0.00023	200	no	J	0.002
	Arsenic	0.005	5	no	U	0.005
	Barium	0.0677	100	no		0.01
	Benzene	0.0663	0.5	no		0.001
	Cadmium	0.003	1	no	U	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	0.0249	5	no		0.005
	Hexachlorobenzene	0.00099	0.13	no	U	0.001
	Hexachloroethane	0.00099	3	no	U	0.001
	Lead	0.0103	5	no		0.005
	Mercury	0.0002	0.2	no	U	0.0002
	Nitrobenzene	0.00099	2	no	U	0.001
	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	0.001	0.5	no	U	0.001
	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 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-001-SB-3*	B21-001-SB-5*	B21-002-SB-3.5	B21-002-SB-5	B21-003-SB-1	B21-003-SB-5	B21-003-SB-10*	B21-004-SB-2.5
			9/4/2018	9/4/2018	9/5/2018	9/5/2018	7/17/2018	7/17/2018	7/17/2018	7/17/2018
Metals										
Aluminum	mg/kg	1,100,000	7,890	6,090	5,140	9,520	9,170	13,200	N/A	3,170
Antimony	mg/kg	470	2.4 U	2.6 U	2.5 UJ	2.7 UJ	2.3 UJ	2.8 UJ	N/A	2.7 UJ
Arsenic	mg/kg	3	2.9	2.1 U	7.1	4.4	4.4	4.1	4.5	8.2
Barium	mg/kg	220,000	57.2	48	55.2 J	280 J	65.8 J	130 J	N/A	40.9 J
Beryllium	mg/kg	2,300	0.32 J	0.29 J	0.85 U	0.24 J	0.3 J	0.68 J	N/A	0.33 J
Cadmium	mg/kg	980	1.2 U	1.3 U	0.58 J	0.57 J	1.2 U	1.4 U	N/A	1.3 U
Chromium	mg/kg	120,000	957	1,010	1,020	545	361	46.2	N/A	29.1
Chromium VI	mg/kg	6.3	1 U	1.1 U	1.1 U	1.1 U	1 R	1.1 R	N/A	1.1 R
Cobalt	mg/kg	350	1.7 J	4.3 U	1.2 J	3.6 J	3.5 J	4.2 J	N/A	14
Copper	mg/kg	47,000	32.7	28.8	24.8	84	50.5	66.5	N/A	164
Iron	mg/kg	820,000	159,000	161,000	147,000	73,600	71,100 J	15,000 J	N/A	61,200 J
Lead	mg/kg	800	15.5	9.9	16.9	37.6	87.5	73.5	N/A	14.8
Manganese	mg/kg	26,000	23,100	24,000	22,700	12,000	10,400	1,530	N/A	712
Mercury	mg/kg	350	0.1 U	0.13	0.009 J	0.1 J	0.064 J	0.23	N/A	0.014 J
Nickel	mg/kg	22,000	10.5	22.2	12.5	24	21.4	23.2	N/A	46.7
Selenium	mg/kg	5,800	3.2 U	3.4 U	3 J	3.6 U	3.1 UJ	3.7 UJ	N/A	3.6 UJ
Silver	mg/kg	5,800	2.4 U	2.6 U	23.8	17.5	1.2 J	2.8 U	N/A	2.7 U
Thallium	mg/kg	12	7.9 U	8.5 U	8.5 UJ	9 UJ	7.7 U	9.4 U	N/A	8.9 U
Vanadium	mg/kg	5,800	552	692	634	330	197 J	21.2 J	N/A	24 J
Zinc	mg/kg	350,000	28.3	20	26.5	117	156	157	N/A	65.2
Other										
Cyanide	mg/kg	150	0.62 J	0.48 J	0.57 J-	0.55 J-	0.52 J-	0.76 J-	N/A	1.1 UJ

Detections in bold

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

N/A indicates that the 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.

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

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-004-SB-5	B21-004-SB-10*	B21-005-SB-2*	B21-005-SB-7*	B21-005-SB-10*	B21-006-SB-2*	B21-006-SB-8*	B21-007-SB-1*
			7/17/2018	7/17/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018
Metals										
Aluminum	mg/kg	1,100,000	8,450	N/A	15,500	13,400	18,500	35,800	16,200	5,920
Antimony	mg/kg	470	2.6 UJ	N/A	2.8 U	2.9 U	3 U	2.1 U	2.8 U	2.8 U
Arsenic	mg/kg	3	16.8	7.7	5.8	2.4 U	11.4	2.2	3.9	7.1
Barium	mg/kg	220,000	106 J	N/A	65.4	52.3	63.9	340	52.5	174
Beryllium	mg/kg	2,300	0.83 J	N/A	0.64 J	0.55 J	1.1	4	0.74 J	0.37 J
Cadmium	mg/kg	980	1.3 U	N/A	1.4 U	1.5 U	1.5 U	1.1 U	1.4 U	1.4
Chromium	mg/kg	120,000	32.5	N/A	22.6	18.4	38.7	23.1	25.3	122
Chromium VI	mg/kg	6.3	1.1 R	N/A	1.2 U	1.2 U	N/A	1.1 U	1.3 U	1.3
Cobalt	mg/kg	350	13.5	N/A	5.9	4.6 J	7.7	2.8 J	6	5.6
Copper	mg/kg	47,000	192	N/A	10.9	5.4	17.6	23.1	10.9	258
Iron	mg/kg	820,000	40,400 J	N/A	16,300	13,700	29,700	19,700	12,700	29,400
Lead	mg/kg	800	49.8	N/A	17.9	14	17.9	24.7	17.9	361
Manganese	mg/kg	26,000	1,090	N/A	276	42	86.6	3,000	66.3	2,940
Mercury	mg/kg	350	0.03 J	N/A	0.0075 J	0.11 U	0.23	0.014 J	0.11 U	0.26
Nickel	mg/kg	22,000	40.9	N/A	13.5	8.4 J	15.8	4.8 B	12.7	29
Selenium	mg/kg	5,800	3.5 UJ	N/A	3.7 U	3.9 U	4 U	2.8 U	3.7 U	3.7 U
Silver	mg/kg	5,800	2.6 U	N/A	2.8 U	2.9 U	3 U	2.1 U	2.8 U	2.8 U
Thallium	mg/kg	12	8.8 U	N/A	9.3 U	9.8 U	9.9 U	7.1 U	9.3 U	4.6 J
Vanadium	mg/kg	5,800	28.2 J	N/A	29.4	28.9	49.8	17.6	23.5	276
Zinc	mg/kg	350,000	189	N/A	52.5	26.4	60.3	64.3	42.6	2,990
Other										
Cyanide	mg/kg	150	1.2 J-	N/A	0.31 J	1.1 U	1.1 U	0.44 J	1.1 U	2.2

Detections in bold

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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.

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

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-007-SB-5*	B21-008-SB-3*	B21-008-SB-5*	B21-009-SB-2	B21-009-SB-5	B21-010-SB-2*	B21-010-SB-5*	B21-011-SB-1
			7/23/2018	9/6/2018	9/6/2018	7/17/2018	7/17/2018	7/18/2018	7/18/2018	7/17/2018
Metals										
Aluminum	mg/kg	1,100,000	6,890	5,390	10,400	26,700	22,100	11,800	17,300	25,900
Antimony	mg/kg	470	2.4 U	2.7 U	2.4 U	3.1 UJ	2.8 UJ	2.9 U	4.2 U	2.5 UJ
Arsenic	mg/kg	3	9.2	4.2	6.6	4.9	6.7	4.3	22.3	3.7
Barium	mg/kg	220,000	157	159	33	210 J	93.6 J	207	101	467 J
Beryllium	mg/kg	2,300	0.5 J	0.89 U	0.29 J	1.2	0.85 J	0.81 J	0.78 J	2.6
Cadmium	mg/kg	980	1.2 U	1.5	0.83 J	0.53 J	1.6	0.43 J	2.1 U	0.63 J
Chromium	mg/kg	120,000	806	111	50.1	101	201	67.7	240	45.3
Chromium VI	mg/kg	6.3	1.1 U	1.1 U	1 U	1.2 R	1.3 R	1.1 U	1.4 U	1.1 R
Cobalt	mg/kg	350	15.5	7.2	6.9	10.5	17.7	4.5 J	54.9	4.7
Copper	mg/kg	47,000	176	213	76.4	138	225	131	600	364
Iron	mg/kg	820,000	137,000	32,000	31,500	51,900 J	136,000 J	17,900	81,000	22,900 J
Lead	mg/kg	800	90.1	134	158	232	38.8	269	149	211
Manganese	mg/kg	26,000	26,800	2,740	1,140	5,610	31,200	810	30,300	4,570
Mercury	mg/kg	350	0.018 J	2	0.047 J	0.09 J	0.15	1.7	0.44	0.28
Nickel	mg/kg	22,000	46.2	16.7	23.4	41	56.9	15.6	313	13.5
Selenium	mg/kg	5,800	3.3 U	3.6 U	3.2 U	4.2 UJ	3.7 UJ	3.8 U	5.7 U	3.3 UJ
Silver	mg/kg	5,800	2.4 U	5.4	3	3.1 U	5	2.9 U	4.8	0.53 J
Thallium	mg/kg	12	71.9	8.9 U	8 U	10.4 U	9.2 U	9.6 U	14.2 U	8.3 U
Vanadium	mg/kg	5,800	4,680	366	85.1	63.8 J	270 J	20.2	46.2	65.6 J
Zinc	mg/kg	350,000	249	876	316	6,750	127	541	920	235
Other										
Cyanide	mg/kg	150	0.27 J	2.9	0.36 J	1.1 UJ	0.33 J-	0.56 J	0.2 J	1 J-

Detections in bold

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

N/A indicates that the 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.

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

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-011-SB-5	B21-012-SB-1	B21-012-SB-5	B21-013-SB-3.5	B21-013-SB-5	B21-014-SB-2*	B21-014-SB-8*	B21-015-SB-3*
			7/17/2018	7/17/2018	7/17/2018	9/5/2018	9/5/2018	7/23/2018	7/23/2018	9/4/2018
Metals										
Aluminum	mg/kg	1,100,000	53,600	36,300	58,400	10,100	12,700	23,200	9,740	2,320
Antimony	mg/kg	470	3.7 UJ	3 UJ	3.1 UJ	2.7 UJ	2.4 UJ	2.5 U	2.5 U	13.9
Arsenic	mg/kg	3	3.8	6.2	2.6 U	7.3	13.9	2.1 U	16.6	5
Barium	mg/kg	220,000	169 J	418 J	218 J	161 J	171 J	131	182	23.8
Beryllium	mg/kg	2,300	2.1	4.4	2.2	0.91 U	0.8 U	2.7	1	0.15 J
Cadmium	mg/kg	980	1.8 U	0.73 J	1.6 U	2.5	1.1 J	0.43 J	1.2 U	1.2 U
Chromium	mg/kg	120,000	469	74.4	200	290	2,020	12.1	2,570	82.1
Chromium VI	mg/kg	6.3	1.6 R	1.2 R	1.3 R	1.2 U	1.1 U	1 U	2	1 U
Cobalt	mg/kg	350	27.9	7.6	9	9.7	3.8 J	2.6 J	6.6	22.5
Copper	mg/kg	47,000	53.4	239	25.1	129	86.1	6.6	75.2	195
Iron	mg/kg	820,000	49,000 J	56,200 J	12,900 J	46,100	89,400	9,490	117,000	137,000
Lead	mg/kg	800	7.4	139	5.3	361	223	5.5	127	74.4
Manganese	mg/kg	26,000	1,570	5,780	774	6,090	37,400	812	39,700	1,500
Mercury	mg/kg	350	0.013 J	0.026 J	0.13 U	0.15	0.061 J	0.11 U	0.057 J	0.096 U
Nickel	mg/kg	22,000	214	34.5	63.2	30.7	21.2	6.9 J	29	29.6
Selenium	mg/kg	5,800	4.7 J-	4 UJ	5.2	3.6 U	4.1	3.3 U	3.3 U	3.2 U
Silver	mg/kg	5,800	3.7 U	3 U	3.1 U	11.1	65.5	2.5 U	2.7	2.4 U
Thallium	mg/kg	12	12.3 U	10 U	10.4 U	9.1 UJ	8 UJ	8.3 U	178	7.9 U
Vanadium	mg/kg	5,800	21.5 J	184 J	11.3 J	1,160	13,400	26.7	11,500	38.3
Zinc	mg/kg	350,000	14	578	2.8 J	1,620	1,160	22.3	185	26.9
Other										
Cyanide	mg/kg	150	0.85 J-	0.24 J-	1.2 UJ	0.48 J-	0.22 J-	0.96 U	0.63 J	0.95 U

Detections in bold

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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.

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

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-015-SB-5*	B21-016-SB-4*	B21-016-SB-5*	B21-017-SB-2*	B21-017-SB-5*	B21-018-SB-2*	B21-018-SB-8*	B21-019-SB-2*
			9/4/2018	9/4/2018	9/4/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018	7/20/2018
Metals										
Aluminum	mg/kg	1,100,000	45,600	31,400	46,000	17,600	16,700	13,400	15,100	40,200
Antimony	mg/kg	470	3 U	2.6 U	2.5 U	2.8 U	3.1 U	3.6 U	3 U	2.5 U
Arsenic	mg/kg	3	4.5	4.7	2.1 U	3.2	7.3	6.8	22.3	2.1 U
Barium	mg/kg	220,000	1,700	567	946	72.2	182	79.4	28	319
Beryllium	mg/kg	2,300	4	1.8	2.7	0.79 J	0.69 J	0.71 J	0.63 J	7.3
Cadmium	mg/kg	980	1.5 U	1.3 U	1.3 U	1.4 U	1.5 U	7.5	1.5 U	1.3 U
Chromium	mg/kg	120,000	147	147	118	22.6	195	28.8	38.4	3.8
Chromium VI	mg/kg	6.3	1.3 U	1.1 U	1.1 U	1.2 U	1.3 U	1.2 U	0.6 J	1.1 U
Cobalt	mg/kg	350	9.7	65.8	13.3	6.5	60.1	12.8	2.5 J	4.2 U
Copper	mg/kg	47,000	51.2	180	27.1	8.8	227	26.9	14.8	4.2 U
Iron	mg/kg	820,000	14,100	56,600	13,200	14,700	72,200	19,400	26,900	7,260
Lead	mg/kg	800	66.7	20.4	7.1	15.6	39.3	40.7	15.2	3.4
Manganese	mg/kg	26,000	12,100	3,610	4,690	83.5	1,290	476	43	1,970
Mercury	mg/kg	350	0.13 U	0.11 U	0.1 U	0.014 J	0.066 J	0.058 J	0.11 U	0.11 U
Nickel	mg/kg	22,000	49.4	141	62	15.5	384	20.8	7.5 J	8.4 U
Selenium	mg/kg	5,800	3.6 J	3.5 U	5.5	3.7 U	4.1 U	4.8 U	4 U	3.4 U
Silver	mg/kg	5,800	3 U	2.6 U	2.5 U	2.8 U	3.1 U	3.6 U	3 U	2.5 U
Thallium	mg/kg	12	9.8 U	8.7 U	8.3 U	9.3 U	10.2 U	11.9 U	10 U	8.4 U
Vanadium	mg/kg	5,800	24.3	55.8	11.1	25.2	28.8	32.9	45.5	28.2
Zinc	mg/kg	350,000	122	60.8	30.6	72	1,950	4,550	104	4.2 U
Other										
Cyanide	mg/kg	150	2.2	1.6	1.6	1 U	7.9	0.21 J	1.1 U	0.29 J

Detections in bold

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-019-SB-7*	B21-020-SB-4*	B21-020-SB-5*	B21-020-SB-10*	B21-021-SB-1*	B21-021-SB-5*	B21-022-SB-1.5*	B21-022-SB-9*
			7/24/2018	9/6/2018	9/6/2018	9/6/2018	7/24/2018	7/24/2018	7/23/2018	7/23/2018
Metals										
Aluminum	mg/kg	1,100,000	40,700	8,610	5,620	N/A	32,700	6,040	10,700	6,940
Antimony	mg/kg	470	2.5 U	2.4 U	2.4 U	N/A	2.7 U	2.5 U	2.4 U	2.5 U
Arsenic	mg/kg	3	2.1 U	7.8	11.2	4.2	2.2 U	2.1 U	9.6	6.3
Barium	mg/kg	220,000	310	99.3	90.8	N/A	360	27.4	106	72
Beryllium	mg/kg	2,300	6.6	0.8 U	0.79 U	N/A	3.7	0.19 J	0.96	0.53 J
Cadmium	mg/kg	980	1.3 U	0.67 J	0.79 J	N/A	1.3 U	1.3 U	0.49 J	1.2 U
Chromium	mg/kg	120,000	11.6	752	1,070	N/A	73.5	9.6	693	1,100
Chromium VI	mg/kg	6.3	1.1 U	1 U	1 U	N/A	1.1 U	1.1 U	1 U	1.1
Cobalt	mg/kg	350	4.2 U	27.6	11.7	N/A	1.8 J	2 J	3.7 J	4.1 U
Copper	mg/kg	47,000	4.2 U	64.7	138	N/A	14.7	5.9	54.9	29.8
Iron	mg/kg	820,000	7,950	197,000	222,000	N/A	17,200	7,160	131,000	170,000
Lead	mg/kg	800	7.4	126	103	N/A	29.4	7.1	134	20.9
Manganese	mg/kg	26,000	1,320	13,600	21,900	N/A	4,260	70	19,700	62,300
Mercury	mg/kg	350	0.11 U	0.1 U	0.1 U	N/A	0.057 J	0.02 J	0.07 J	0.097 U
Nickel	mg/kg	22,000	1.1 J	54.3	145	N/A	8.1 J	4.7 J	42.3	10.2
Selenium	mg/kg	5,800	3.3 U	3.2 U	3.1 J	N/A	3.6 U	3.4 U	3.2 U	3.3 U
Silver	mg/kg	5,800	2.5 U	36.2	52.3	N/A	2.7 U	2.5 U	2.4 U	2.3 J
Thallium	mg/kg	12	8.3 U	8 U	7.9 U	N/A	9 U	8.4 U	22.4	68.6
Vanadium	mg/kg	5,800	59.3	1,650	2,330	N/A	180	15.3	1,590	4,900
Zinc	mg/kg	350,000	9	157	204	N/A	58.2	16.8	845	63.9
Other										
Cyanide	mg/kg	150	0.32 J	0.51 J	0.39 J	N/A	0.59 J	1.1 U	0.5 J	0.13 J

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-023-SB-2*	B21-023-SB-5*	B21-024-SB-2*	B21-024-SB-5*	B21-025-SB-2*	B21-025-SB-7.5*	B21-026-SB-2*	B21-026-SB-5*
			7/23/2018	7/23/2018	7/23/2018	7/23/2018	7/18/2018	7/18/2018	7/18/2018	7/18/2018
Metals										
Aluminum	mg/kg	1,100,000	52,000	53,100	16,200	12,000	50,700	20,900	10,100	24,500
Antimony	mg/kg	470	2.5 U	2.6 U	2.6 U	2.4 U	2.6 U	2.5 U	2.1 U	2.7 U
Arsenic	mg/kg	3	2.1 U	2.2 U	9.8	11.7	2.6	2.8	1.7 J	9
Barium	mg/kg	220,000	551	600	181	225	949	123	157	162
Beryllium	mg/kg	2,300	6.8	6.7	1.7	1.2	5.2	0.98	1.1	1.4
Cadmium	mg/kg	980	1.3 U	1.3 U	1.3 U	0.79 J	1.3 U	0.33 J	1.1 U	0.87 J
Chromium	mg/kg	120,000	3	3	1,010	1,270	20.3	102	18	216
Chromium VI	mg/kg	6.3	1.1 U	1.1 U	1.1 U	1 U	1 U	1.3 U	1 U	1.2 U
Cobalt	mg/kg	350	4.2 U	4.3 U	4.3 J	4 J	3.8 J	12.3	1.7 J	10.4
Copper	mg/kg	47,000	4.2 U	6.9	70.8	54.7	24	76.3	35.3	205
Iron	mg/kg	820,000	6,320	4,840	124,000	166,000	27,200	23,500	9,890	42,100
Lead	mg/kg	800	3	3.6	84.2	164	22	97.6	36.6	251
Manganese	mg/kg	26,000	1,960	1,570	33,500	41,100	7,960	760	1,180	3,440
Mercury	mg/kg	350	0.1 U	0.1 U	0.069 J	0.017 J	0.047 J	0.06 J	0.04 J	0.1 J
Nickel	mg/kg	22,000	8.4 U	8.6 U	19.6	22.5	6.5 J	49.5	6 J	41.8
Selenium	mg/kg	5,800	3.3 U	3.5 U	3.5 U	3.2 U	3.4 U	3.3 U	2.8 U	3.6 U
Silver	mg/kg	5,800	2.5 U	2.6 U	2.6 U	1.5 J	2.6 U	2.5 U	2.1 U	0.76 J
Thallium	mg/kg	12	8.4 U	8.6 U	45	64.5	8.6 U	8.3 U	7 U	8.9 U
Vanadium	mg/kg	5,800	19.1	19.6	3,110	4,550	105	23.6	15.4	41
Zinc	mg/kg	350,000	3.6 B	0.92 B	384	586	32	306	53.4	1,110
Other										
Cyanide	mg/kg	150	0.23 J	0.96 U	0.6 J	0.61 J	0.42 J	0.99 J	0.85 J	1.2 U

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-027-SB-1*	B21-027-SB-5*	B21-028-SB-1	B21-028-SB-5	B21-029-SB-1*	B21-029-SB-5*	B21-030-SB-2.5*	B21-030-SB-5*
			7/18/2018	7/18/2018	7/19/2018	7/19/2018	7/18/2018	7/18/2018	9/4/2018	9/4/2018
Metals										
Aluminum	mg/kg	1,100,000	2,360	19,300	20,600	24,400 J	15,000	33,900	19,600	15,100
Antimony	mg/kg	470	2.4 U	3 U	2.5 UJ	2.7 UJ	2.4 U	2.7 U	2.7 U	2.9 U
Arsenic	mg/kg	3	2 U	19.4	4.2	4.8	4.7	5.2	2.2 U	5.8
Barium	mg/kg	220,000	17.6	123	163 J	208 J	113	430	356	174
Beryllium	mg/kg	2,300	0.25 J	0.88 J	1.7	2.6	1.2	4.2	1.9	0.55 J
Cadmium	mg/kg	980	1.2 U	2.4	0.95 J	0.35 J	1.2 U	0.84 J	1.3 U	1.4 U
Chromium	mg/kg	120,000	29.7	177	229	97.8 J	154	103	119	23.1
Chromium VI	mg/kg	6.3	0.54 J	1.3 U	1.1 R	1.2 R	1.1 U	1.1 U	1.2 U	1.3 U
Cobalt	mg/kg	350	5.3	15.8	3.3 J	5.5	2.2 J	7.3	49	7.3
Copper	mg/kg	47,000	92.4	125	28.5	25.5	21.3	36.1	23.1	8
Iron	mg/kg	820,000	22,500	53,300	47,700	34,500 J	32,200	40,500	13,100	16,800
Lead	mg/kg	800	69.5	831	43.5	52 J	47.2	91.6	40.6	13.5
Manganese	mg/kg	26,000	202	4,770	5,650 J	3,600	4,070	5,180	1,620	94.8
Mercury	mg/kg	350	0.31	0.068 J	0.23	0.091 J	0.47	0.15	0.014 J	0.013 J
Nickel	mg/kg	22,000	11.9	85.8	19.6	19.9 J	14.3	23.4	24.2	14.2
Selenium	mg/kg	5,800	3.2 U	3.9 U	3.3 U	3.7 U	3.2 U	3.6 U	3.6 U	3.9 U
Silver	mg/kg	5,800	2.4 U	1.8 J	2.5 U	2.7 U	2.4 U	0.44 J	2.7 U	2.9 U
Thallium	mg/kg	12	8.1 U	9.9 U	8.3 U	9.2 U	3.2 J	9.1 U	8.9 U	9.6 U
Vanadium	mg/kg	5,800	17.4	41.4	207	92.3 J	252	121	16.3	33.6
Zinc	mg/kg	350,000	167	1,890	332	196 J	351	269	65	36.2
Other										
Cyanide	mg/kg	150	0.15 J	0.45 J	0.71 J-	0.68 J-	0.65 J	0.53 J	2.9	0.4 J

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Table 6 - Parcel B21
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	B21-030-SB-10*	B21-031-SB-1	B21-031-SB-5	B21-032-SB-1	B21-032-SB-5	B21-033-SB-2.5*	B21-033-SB-5*	B21-034-SB-3*
			9/4/2018	7/19/2018	7/19/2018	7/25/2018	7/25/2018	9/6/2018	9/6/2018	9/6/2018
Metals										
Aluminum	mg/kg	1,100,000	N/A	15,000	6,340	34,400	15,700	12,000	8,200	8,180
Antimony	mg/kg	470	N/A	2.3 UJ	2.6 UJ	2.7 UJ	2.8 UJ	4.3	2.6	2.2 J
Arsenic	mg/kg	3	2.5 U	1.9 J	4.5	2.9	6.4	9.1	11.3	7.9
Barium	mg/kg	220,000	N/A	77.5 J	53.3 J	366 J	133 J	127	75.3	63.4
Beryllium	mg/kg	2,300	N/A	0.57 J	0.67 J	6	1.4	0.83 U	0.83 U	0.83 U
Cadmium	mg/kg	980	N/A	1.2 U	1.3 U	1.3 U	1.4 U	0.85 J	1.2 J	0.91 J
Chromium	mg/kg	120,000	N/A	24.1	32.6	213	468	1,070	976	980
Chromium VI	mg/kg	6.3	N/A	1.1 R	1.1 R	1.1 R	1.2 R	1.1 U	1.1 U	1.1 U
Cobalt	mg/kg	350	N/A	5.3	2.8 J	2.2 J	3.2 J	6.8	6.3	4.9
Copper	mg/kg	47,000	N/A	6.5	18.4	55 J	51 J	28.4	68.2	28.2
Iron	mg/kg	820,000	N/A	11,500	15,400	42,300 J	109,000 J	133,000	124,000	172,000
Lead	mg/kg	800	N/A	8.8	35.1	58.5 J	65.3 J	120	123	58.7
Manganese	mg/kg	26,000	N/A	43.2 J	308 J	7,490 J	14,800 J	30,200	25,200	34,200
Mercury	mg/kg	350	N/A	0.0059 J	0.065 J	0.068 J	0.036 J	0.052 J	1.8	0.022 J
Nickel	mg/kg	22,000	N/A	13.1	6.6 J	13.5 J	15.3 J	13.2	26	14.5
Selenium	mg/kg	5,800	N/A	3.1 U	3.5 U	3.5 UJ	3.8 UJ	6.5	4	5.4
Silver	mg/kg	5,800	N/A	2.3 U	2.6 U	2.7 U	2.8 U	96.4	74.4	91.2
Thallium	mg/kg	12	N/A	7.8 U	8.6 U	5.9 J	12.6	8.3 U	8.3 U	8.3 U
Vanadium	mg/kg	5,800	N/A	20.8	43.6	449	894	3,540	2,280	3,980
Zinc	mg/kg	350,000	N/A	40.4	40.7	132 J	271 J	234	423	285
Other										
Cyanide	mg/kg	150	N/A	0.96 UJ	1.1 UJ	1.3 J-	2.4 J-	0.28 J	0.76 J	0.4 J

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-034-SB-4*	B21-035-SB-1	B21-035-SB-5	B21-036-SB-2	B21-036-SB-5	B21-038-SB-4	B21-038-SB-5	B21-038-SB-10*
			9/6/2018	7/25/2018	7/25/2018	7/19/2018	7/19/2018	9/5/2018	9/5/2018	9/4/2018
Metals										
Aluminum	mg/kg	1,100,000	6,560	40,800	41,700	37,500	14,800	33,500	9,380	N/A
Antimony	mg/kg	470	2.1 J	2.5 UJ	2.7 UJ	3.2 UJ	2.7 UJ	2.8 UJ	2.9 UJ	N/A
Arsenic	mg/kg	3	7.2	2.6	2.2 U	2.6 U	6.5	4.4	2.4 U	2.4 U
Barium	mg/kg	220,000	90.5	382 J	401 J	463 J	154 J	749 J	47.9 J	N/A
Beryllium	mg/kg	2,300	0.81 U	6.7	7.3	1.9	0.43 J	3.5	0.38 J	N/A
Cadmium	mg/kg	980	1.2 J	1.3 U	1.3 U	1.6 U	1.4 U	0.59 J	1.4 U	N/A
Chromium	mg/kg	120,000	675	158	105	130	609	110	16.7	N/A
Chromium VI	mg/kg	6.3	1.1 U	1.1 R	1.2 R	1.2 R	14.9 J-	1.3 U	1.2 U	N/A
Cobalt	mg/kg	350	6.8	4.2 U	4.5 U	2.6 J	9	9.7	5.8	N/A
Copper	mg/kg	47,000	45.8	12.5 J	3.1 J	13.5	14.1	50.8	107	N/A
Iron	mg/kg	820,000	110,000	24,300 J	13,100 J	7,740	14,600	33,800	13,500	N/A
Lead	mg/kg	800	97.4	11.8 J	2.6 J	57.4	8.1	32.1	19.2	N/A
Manganese	mg/kg	26,000	21,300	5,300 J	3,140 J	1,560 J	400 J	6,490	273	N/A
Mercury	mg/kg	350	0.0063 J	0.11 U	0.11 U	0.14	0.047 J	0.2	0.056 J	N/A
Nickel	mg/kg	22,000	21	3.4 J	1.5 J	10.7	30.2	28.7	10.1	N/A
Selenium	mg/kg	5,800	3 J	3.4 UJ	3.6 UJ	4.2 U	3.6 U	3.8 U	3.9 U	N/A
Silver	mg/kg	5,800	66.3	2.5 U	2.7 U	3.2 U	2.7 U	14.5	3	N/A
Thallium	mg/kg	12	8.1 U	5 J	9 U	10.5 U	9 U	9.5 UJ	9.7 UJ	N/A
Vanadium	mg/kg	5,800	2,250	271	90.1	19.6	27	192	23.1	N/A
Zinc	mg/kg	350,000	402	37 J	1.2 J	29	101	155	74.7	N/A
Other										
Cyanide	mg/kg	150	1.1	2.3 J-	1.1 J-	1.6 J-	0.23 J-	0.3 J-	1.1 UJ	N/A

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-039-SB-2	B21-039-SB-5	B21-040-SB-6.5*	B21-040-SB-10*	B21-043-SB-1.5*	B21-043-SB-5*	B21-044-SB-2	B21-044-SB-5
			7/19/2018	7/19/2018	9/4/2018	9/4/2018	7/20/2018	7/20/2018	7/19/2018	7/19/2018
Metals										
Aluminum	mg/kg	1,100,000	60,200	15,400	20,800	N/A	10,700	13,700	15,600	12,800
Antimony	mg/kg	470	3.3 UJ	3.1 UJ	3 U	N/A	2.5 U	3.3 U	2.4 UJ	2.8 UJ
Arsenic	mg/kg	3	4.2	2.6 U	4.2	3.5	3.3	2.7 U	3.9	2.3 U
Barium	mg/kg	220,000	651 J	40.6 J	75.5	N/A	113	106	54.8 J	56 J
Beryllium	mg/kg	2,300	4.8	0.43 J	1.1	N/A	1.2	0.61 J	0.52 J	0.43 J
Cadmium	mg/kg	980	1.7 U	1.6 U	1.5 U	N/A	1.2 U	1.6 U	1.2 U	1.4 U
Chromium	mg/kg	120,000	185	17.4	24.2	N/A	12.2	15.9	19.3	12.9
Chromium VI	mg/kg	6.3	1.5 R	0.79 J-	1.3 U	N/A	1.2 U	0.88 J	1.2 R	0.79 J-
Cobalt	mg/kg	350	3.9 J	2.5 J	4.9 J	N/A	19.1	2.1 J	6.5	2.7 J
Copper	mg/kg	47,000	30.6	4.7 J-	11.4	N/A	7.1	7.8	6	4.2 J-
Iron	mg/kg	820,000	12,400	18,700	17,800	N/A	9,890	5,220	14,400	6,940
Lead	mg/kg	800	16.2	8.2	16.6	N/A	11.3	14.1	8.1	11.4
Manganese	mg/kg	26,000	3,490 J	23.6 J	35	N/A	777	14.3	88.1 J	26.4 J
Mercury	mg/kg	350	0.055 J	0.13	0.032 J	N/A	0.033 J	0.12 U	0.041 J	0.007 J
Nickel	mg/kg	22,000	28.2	6.7 J	14.5	N/A	16	7.6 J	11.8	5.4 J
Selenium	mg/kg	5,800	4.4 U	4.2 U	3.9 U	N/A	3.3 U	4.3 U	3.2 U	3.7 U
Silver	mg/kg	5,800	3.3 U	3.1 U	3 U	N/A	2.5 U	3.3 U	2.4 U	2.8 U
Thallium	mg/kg	12	11.1 U	10.4 U	9.8 U	N/A	8.3 U	10.9 U	8 U	9.2 U
Vanadium	mg/kg	5,800	16.9	21.8	29.1	N/A	19.5	12.3	28.8	14.9
Zinc	mg/kg	350,000	54.5	18.4	24.6	N/A	73.5	12.2	125	18.3
Other										
Cyanide	mg/kg	150	17.3 J-	1.1 UJ	1.2 U	N/A	1.1 U	1.1 U	1.1 UJ	0.93 UJ

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-045-SB-3.5*	B21-045-SB-4.5*	B21-046-SB-2*	B21-046-SB-6*	B21-047-SB-2*	B21-047-SB-4*	B21-048-SB-1*
			9/4/2018	9/4/2018	7/18/2018	7/18/2018	7/23/2018	7/23/2018	7/23/2018
Metals									
Aluminum	mg/kg	1,100,000	22,400	23,100	16,700	16,500	6,270	10,300	9,190
Antimony	mg/kg	470	2.6 U	2.6 U	2.4 U	2.3 U	2.8 U	2.8 U	2.7 U
Arsenic	mg/kg	3	40.1	18.6	3.3	6.9	8.3	16.5	7.1
Barium	mg/kg	220,000	259	397	252	285	86.9	109	106
Beryllium	mg/kg	2,300	2.1	1.7	1.2	1.1	0.42 J	0.66 J	0.29 J
Cadmium	mg/kg	980	1.3 U	0.46 J	1.6	1.1 U	1.8	1.9	1.7
Chromium	mg/kg	120,000	73.4	195	34	171	124	116	762
Chromium VI	mg/kg	6.3	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.4
Cobalt	mg/kg	350	50.5	40.9	3.6 J	16	6.7	19.7	3.6 J
Copper	mg/kg	47,000	538	321	160	474	75	180	118
Iron	mg/kg	820,000	118,000	36,100	15,500	78,300	29,400	105,000	124,000
Lead	mg/kg	800	101	107	113	82.1	242	267	1,610
Manganese	mg/kg	26,000	4,290	41,500	1,570	2,590	3,570	5,640	15,400
Mercury	mg/kg	350	0.071 J	0.076 J	0.062 J	0.089 J	0.078 J	0.1 J	0.55
Nickel	mg/kg	22,000	44.2	84.4	11.6	58.8	21	66.2	27.3
Selenium	mg/kg	5,800	3.5 U	3.2 J	3.2 U	2.6 J	3.7 U	3 J	3.5 U
Silver	mg/kg	5,800	2.6 U	2.6 U	2.4 U	0.48 J	2.8 U	2.8 U	1.3 J
Thallium	mg/kg	12	8.8 U	8.7 U	7.9 U	7.5 U	6.2 J	6.9 J	8.9 U
Vanadium	mg/kg	5,800	61.5	40.1	15.4	68.3	385	460	380
Zinc	mg/kg	350,000	357	287	520	193	547	693	341
Other									
Cyanide	mg/kg	150	0.51 J	1	0.19 J	1.4	0.67 J	0.4 J	0.94 J

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-048-SB-7*	B21-049-SB-1*	B21-049-SB-5*	B21-049-SB-10	B21-050-SB-2*	B21-050-SB-8*	B21-051-SB-2.5	B21-052-SB-2*
			7/23/2018	7/24/2018	7/24/2018	7/24/2018	7/24/2018	7/24/2018	7/24/2018	9/5/2018
Metals										
Aluminum	mg/kg	1,100,000	10,400	8,790	5,630	N/A	18,400	14,400	33,300	28,800
Antimony	mg/kg	470	3.3 U	2.5 U	2.8 U	N/A	2.6 U	2.8 U	2.4 UJ	2.6 U
Arsenic	mg/kg	3	7.1	12.3	7.9	5.1	6	7.4	3.2	4.2
Barium	mg/kg	220,000	202	116	107	N/A	200	57.3	371 J	280
Beryllium	mg/kg	2,300	1 J	0.77 J	0.3 J	N/A	1.9	0.66 J	5.6	3.1
Cadmium	mg/kg	980	0.42 J	1.2 U	1.4 U	N/A	0.32 J	1.4 U	0.46 J	0.77 J
Chromium	mg/kg	120,000	77.7	1,990	411	N/A	357	34.4	308	193
Chromium VI	mg/kg	6.3	1.5 U	1 U	1.2 U	N/A	1.1 U	0.82 J	1.1 U	1 U
Cobalt	mg/kg	350	5.9	4.1 U	19.7	N/A	4.5	4.8	30.5	2.5 J
Copper	mg/kg	47,000	92.7	36.3	111	N/A	56.1	12.6	30.6	49.8
Iron	mg/kg	820,000	16,600	133,000	59,100	N/A	54,300	22,000	11,300	31,500
Lead	mg/kg	800	144	51.4	112	N/A	188	25.5	27.1	350
Manganese	mg/kg	26,000	816	45,100	5,050	N/A	15,600	194	2,200	4,370
Mercury	mg/kg	350	0.048 J	0.022 J	0.16	N/A	0.044 J	0.024 J	0.013 J	0.27
Nickel	mg/kg	22,000	29.5	16.2	121	N/A	14.8	9.1 J	7.4 J	19.8
Selenium	mg/kg	5,800	4.4 U	3.3 U	3.8 U	N/A	3.4 U	3.7 U	5	3.5 U
Silver	mg/kg	5,800	3.3 U	1.5 J	2.8 U	N/A	2.6 U	2.8 U	12.4	2.6 U
Thallium	mg/kg	12	11.1 U	55.9	12.8	9.8 U	18.4	9.3 U	8.1 UJ	8.8 U
Vanadium	mg/kg	5,800	28.4	4,030	859	N/A	1,280	107	21.4	101
Zinc	mg/kg	350,000	200	152	411	N/A	1,190	43.5	90.9	218
Other										
Cyanide	mg/kg	150	6.2	1.5	1.9	N/A	0.82 J	0.19 J	1.1 UJ	1

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-052-SB-5*	B21-053-SB-2*	B21-054-SB-1*	B21-054-SB-5*
			7/20/2018	9/6/2018	7/24/2018	7/24/2018
Metals						
Aluminum	mg/kg	1,100,000	35,800	15,800	24,700	22,300
Antimony	mg/kg	470	3 U	2.5 U	2.9 U	2.7 U
Arsenic	mg/kg	3	2.5 U	5.3	11.3	10.4
Barium	mg/kg	220,000	349	154	345	245
Beryllium	mg/kg	2,300	3.9	1.5	2.7	1.6
Cadmium	mg/kg	980	1.5 U	1.1 J	1.5 U	1.3 U
Chromium	mg/kg	120,000	29.3	835	523	1,630
Chromium VI	mg/kg	6.3	1 U	1 U	1.2 U	1.1 U
Cobalt	mg/kg	350	3.7 J	9.8	25.5	4.4 U
Copper	mg/kg	47,000	17.6	46.9	69.6	33.6
Iron	mg/kg	820,000	29,700	123,000	154,000	114,000
Lead	mg/kg	800	16.7	58.6	133	76.7
Manganese	mg/kg	26,000	4,230	21,200	19,600	53,900
Mercury	mg/kg	350	0.022 J	0.098 U	0.11 J	0.1 U
Nickel	mg/kg	22,000	4.4 J	25.7	49.2	10.3
Selenium	mg/kg	5,800	4 U	3.5	3.9 U	3.5 U
Silver	mg/kg	5,800	3 U	22.9	2.9 U	4.3
Thallium	mg/kg	12	10 U	8.3 U	25.8	14.1
Vanadium	mg/kg	5,800	34.5	656	1,740	1,530
Zinc	mg/kg	350,000	19.7	216	174	145
Other						
Cyanide	mg/kg	150	0.17 J	0.92 J	0.62 J	0.19 J

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-055-SB-2.5*	B21-057-SB-2*	B21-057-SB-6*	B21-058-SB-2.5*	B21-059-SB-1*	B21-060-SB-1
			9/4/2018	7/18/2018	7/18/2018	9/4/2018	9/6/2018	7/25/2018
Metals								
Aluminum	mg/kg	1,100,000	18,500	6,750	17,500	12,700	36,400	7,610
Antimony	mg/kg	470	2.6 U	3.8	2.1 J	2.5 U	2.5 U	2.5 UJ
Arsenic	mg/kg	3	2.1 U	31	12.2	5.9	2.1 U	5.8
Barium	mg/kg	220,000	207	303	287	199	331	79.9 J
Beryllium	mg/kg	2,300	2	1.2	1.5	1.1	6.4	0.71 J
Cadmium	mg/kg	980	1.3 U	0.79 J	3	1.2 J	0.43 J	1.2 U
Chromium	mg/kg	120,000	55.1	146	137	28.1	179	734
Chromium VI	mg/kg	6.3	1.1 U	7.1	1.2 U	1.1 U	1.1 U	1 R
Cobalt	mg/kg	350	40.6	19.4	8.4	37	3.7 J	12.3
Copper	mg/kg	47,000	30.4	906	725	482	8	50.4 J
Iron	mg/kg	820,000	15,600	193,000	39,900	38,000	34,800	86,400 J
Lead	mg/kg	800	17.1	494	332	631	18	28.3 J
Manganese	mg/kg	26,000	6,360	1,390	3,540	2,400	6,000	46,900 J
Mercury	mg/kg	350	0.1 U	0.95	0.087 J	0.43	0.11 U	0.013 J-
Nickel	mg/kg	22,000	5.2 J	71.1	35.6	20.9	4.1 J	12.2 J
Selenium	mg/kg	5,800	2.6 J	3.2 U	3.3 U	3.4 U	4.4	3.3 UJ
Silver	mg/kg	5,800	2.6 U	2.4 U	1.4 J	2.5 U	12	2.8
Thallium	mg/kg	12	8.6 U	8 U	8.3 U	8.5 U	8.5 U	55.2
Vanadium	mg/kg	5,800	518	79.5	94.1	50.6	110	2,390
Zinc	mg/kg	350,000	33.4	851	938	227	17.7	90.4 J
Other								
Cyanide	mg/kg	150	0.63 J	0.23 J	0.92 J	0.35 J	6.6	16.8 J-

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-060-SB-4	B21-063-SB-1	B21-063-SB-5	B21-064-SB-2.5	B21-064-SB-5	B21-065-SB-3
			7/25/2018	9/7/2018	9/7/2018	9/5/2018	9/5/2018	9/5/2018
Metals								
Aluminum	mg/kg	1,100,000	14,200	38,000	465	19,200	12,700	11,500
Antimony	mg/kg	470	2.6 UJ	2.5 UJ	2.4 UJ	2.6 UJ	2.5 UJ	2.6 UJ
Arsenic	mg/kg	3	8.1	4.3	2 U	9.9	10.3	7.2
Barium	mg/kg	220,000	136 J	445	3.7 J	232 J	137 J	185 J
Beryllium	mg/kg	2,300	0.72 J	5.7	0.81 U	1.1	0.85 U	0.9
Cadmium	mg/kg	980	1.3 U	1.2 J	1.2 U	1.2 J	1.8	1.4
Chromium	mg/kg	120,000	1,120	106	3.9	698	850	44.3
Chromium VI	mg/kg	6.3	1.1 R	1.1 U	1 U	1.1 U	1.1 U	1.1 U
Cobalt	mg/kg	350	2.3 J	4.8	4 U	17	14.8	24.9
Copper	mg/kg	47,000	43.9 J	34.8	4 U	65.9	338	398
Iron	mg/kg	820,000	101,000 J	37,300	1,080	80,500	130,000	39,400
Lead	mg/kg	800	41.5 J	60	2 U	88.8	262	163
Manganese	mg/kg	26,000	49,300 J	3,850	26.9	29,700	24,500	1,450
Mercury	mg/kg	350	0.11 UJ	0.013 J	0.097 U	0.059 J	0.11	0.089 J
Nickel	mg/kg	22,000	10.2 J	19.2	2.1 J	15.9	32.2	35.1
Selenium	mg/kg	5,800	3.4 UJ	5.1	3.2 U	4.5	3.4 U	3.5 U
Silver	mg/kg	5,800	3.6	13.9	0.49 J	55.6	47.2	7.8
Thallium	mg/kg	12	24.7	8.5 U	8.1 U	8.7 UJ	8.5 UJ	8.8 UJ
Vanadium	mg/kg	5,800	1,360	184	6.6	1,290	1,100	109
Zinc	mg/kg	350,000	184 J	228	6.4	234	1,010	347
Other								
Cyanide	mg/kg	150	1.8 J-	1.2	0.95 U	1.1 J-	1 J-	0.59 J-

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-065-SB-5	B21-065-SB-10*	B21-066-SB-1	B21-066-SB-7.5	B21-067-SB-1	B21-067-SB-5	B21-068-SB-1
			9/5/2018	9/4/2018	7/16/2018	7/16/2018	7/16/2018	7/16/2018	7/16/2018
Metals									
Aluminum	mg/kg	1,100,000	5,980	N/A	40,700	26,800	39,500	14,400	26,000
Antimony	mg/kg	470	2.9 UJ	N/A	2.4 UJ	2.9 UJ	2.2 UJ	3 UJ	2 UJ
Arsenic	mg/kg	3	9.7	2.2	2	5.1	3.8	2.5 U	5.8
Barium	mg/kg	220,000	106 J	N/A	430 J	295 J	527 J	50.6 J	256 J
Beryllium	mg/kg	2,300	0.52 J	N/A	4.9	3.2	4.2	0.41 J	3.8
Cadmium	mg/kg	980	0.38 J	N/A	0.41 J	0.71 J	1.3	1.5 U	0.77 J
Chromium	mg/kg	120,000	19.8	N/A	56.7	593	26	19.4	154
Chromium VI	mg/kg	6.3	1.2 U	N/A	1 R	0.68 J-	1 R	1.4 R	1 R
Cobalt	mg/kg	350	11.1	N/A	5.1	2 J	2.5 J	1.7 J	5.5
Copper	mg/kg	47,000	960	N/A	24.5	43.5	130	5.2	68.1
Iron	mg/kg	820,000	59,500	N/A	28,000 J	56,000 J	13,700 J	9,010 J	68,700 J
Lead	mg/kg	800	203	N/A	49.8	153	81.1	13.6	110
Manganese	mg/kg	26,000	340	N/A	6,940	18,500	6,390	15.8	5,230
Mercury	mg/kg	350	0.052 J	N/A	0.019 J	0.022 J	0.066 J	0.018 J	0.067 J
Nickel	mg/kg	22,000	26	N/A	5.8 B	13.5	11.5	5.2 B	25
Selenium	mg/kg	5,800	3.8 U	N/A	3.1 UJ	3.9 UJ	2.9 UJ	4 UJ	2.7 UJ
Silver	mg/kg	5,800	2.8 J	N/A	2.4 U	2.9 U	2.2 U	3 U	0.39 J
Thallium	mg/kg	12	9.6 UJ	N/A	7.8 U	64.1	7.2 U	10.1 U	6.7 U
Vanadium	mg/kg	5,800	27.8	N/A	94.9 J	3,940 J	53.3 J	20.3 J	126 J
Zinc	mg/kg	350,000	102	N/A	84.9	919	240	17.7	426
Other									
Cyanide	mg/kg	150	1.2 UJ	N/A	0.45 J-	0.3 J-	0.16 J-	0.47 J-	1.1 J-

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**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-068-SB-5	B21-069-SB-1	B21-069-SB-5	B21-070-SB-1	B21-070-SB-5	B21-071-SB-1	B21-071-SB-5
			7/16/2018	7/25/2018	7/25/2018	9/7/2018	9/7/2018	7/25/2018	7/25/2018
Metals									
Aluminum	mg/kg	1,100,000	9,770	16,200	8,600	30,700	27,500	23,500	22,100
Antimony	mg/kg	470	2.5 UJ	2.5 UJ	2.6 UJ	2.4 UJ	2.7 UJ	2.5 UJ	2.6 UJ
Arsenic	mg/kg	3	10.5	6.5	26.7	5.6	4.1	6.1	7.4
Barium	mg/kg	220,000	204 J	229 J	138 J	346	359	246 J	420 J
Beryllium	mg/kg	2,300	0.68 J	2.3	0.65 J	4.8	3	3.5	2.4
Cadmium	mg/kg	980	1.2 U	1 J	3.3	2.3	1.4	4.5	1.1 J
Chromium	mg/kg	120,000	59.4	164	2,010	220	117	436	405
Chromium VI	mg/kg	6.3	1.1 R	1.1 R	1.1 J-	1.1 U	1.1 U	1.1 R	1.1 R
Cobalt	mg/kg	350	8.3	7.9	16.6	6.6	12.6	4.6	9.6
Copper	mg/kg	47,000	70.7	50.5 J	496 J	50.6	41.2	47.2 J	82.6 J
Iron	mg/kg	820,000	47,800 J	114,000 J	175,000 J	60,300	34,900	87,400 J	77,100 J
Lead	mg/kg	800	73.1	119 J	813 J	131	99.5	154 J	140 J
Manganese	mg/kg	26,000	1,100	4,580 J	18,500 J	5,700	5,790	12,800 J	13,300 J
Mercury	mg/kg	350	0.087 J	0.034 J-	0.083 J-	0.048 J	0.0069 J	0.046 J-	1.6 J-
Nickel	mg/kg	22,000	32.5	25.8 J	103 J	21.8	54.4	17.9 J	35.2 J
Selenium	mg/kg	5,800	3.3 UJ	3.4 UJ	3.5 UJ	3.4	3.2 J	3.4 UJ	3.5 UJ
Silver	mg/kg	5,800	2.5 U	2.5 U	2.4 J	22.4	21.5	1.1 J	1.1 J
Thallium	mg/kg	12	3.2 J	2.9 J	47.5	8 U	9 U	11.5	9.1
Vanadium	mg/kg	5,800	133 J	169	3,000	389	305	916	795
Zinc	mg/kg	350,000	132	516 J	1,440 J	861	243	677 J	402 J
Other									
Cyanide	mg/kg	150	0.45 J-	0.92 J-	0.24 J-	1.1	1.1	0.87 J-	0.68 J-

Detections in bold

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

N/A indicates that the 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.

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

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

**Table 6 - Parcel B21
Summary of Inorganics Detected in Soil**

Parameter	Units	PAL	B21-072-SB-1	B21-072-SB-5	B21-073-SB-1	B21-073-SB-5	B21-073-SB-10*	B21-074-SB-1	B21-074-SB-9
			7/25/2018	7/25/2018	7/25/2018	7/25/2018	7/25/2018	7/25/2018	7/25/2018
Metals									
Aluminum	mg/kg	1,100,000	10,400	41,600	9,790	13,700	N/A	10,100	11,000
Antimony	mg/kg	470	2.6 UJ	2.6 UJ	2.5 UJ	2.5 UJ	N/A	2.5 UJ	2.8 UJ
Arsenic	mg/kg	3	10.5	3.9	10.1	10.5	6.9	10.8	7.9
Barium	mg/kg	220,000	82.7 J	390 J	73.6 J	111 J	N/A	84.8 J	87.3 J
Beryllium	mg/kg	2,300	0.55 J	5.9	0.84 J	0.95	N/A	0.65 J	0.76 J
Cadmium	mg/kg	980	1.3 U	1.3 U	1.3 U	1.3 U	N/A	1.3 U	1.4 U
Chromium	mg/kg	120,000	1,830	210	1,260	897	N/A	795	907
Chromium VI	mg/kg	6.3	1.1 R	1.1 R	1.1 R	1.1 R	N/A	1.1 R	1.2 R
Cobalt	mg/kg	350	4.3 U	4.3 U	23.3	4.6	N/A	3.8 J	1.5 J
Copper	mg/kg	47,000	34.4 J	13.2 J	82.5 J	1,540 J	N/A	66.8 J	59.1 J
Iron	mg/kg	820,000	105,000 J	32,100 J	142,000 J	146,000 J	N/A	164,000 J	142,000 J
Lead	mg/kg	800	26.4 J	16.6 J	77.7 J	358 J	N/A	89.3 J	94.3 J
Manganese	mg/kg	26,000	74,300 J	12,600 J	35,800 J	18,200 J	N/A	29,400 J	29,000 J
Mercury	mg/kg	350	0.1 UJ	0.11 UJ	0.063 J	0.11	N/A	6.6	0.055 J
Nickel	mg/kg	22,000	9.4 J	4.3 J	66.6 J	48.1 J	N/A	19.3 J	53.6 J
Selenium	mg/kg	5,800	3.4 UJ	3.5 UJ	3.4 UJ	3.3 UJ	N/A	3.4 UJ	3.7 UJ
Silver	mg/kg	5,800	5.2	0.83 J	2.5 U	0.96 J	N/A	1 J	0.45 J
Thallium	mg/kg	12	35.6	4.7 J	74.4	28.3	24	30.3	38.6
Vanadium	mg/kg	5,800	1,870	510	3,010	1,740	N/A	2,210	2,730
Zinc	mg/kg	350,000	182 J	70.3 J	156 J	348 J	N/A	313 J	221 J
Other									
Cyanide	mg/kg	150	0.76 J-	0.13 J-	3.4 J-	1.5 J-	N/A	4 J-	2.6 J-

Detections in bold

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

N/A indicates that the 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.

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

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

**Table 7 - Parcel B21
Summary of Soil PAL Exceedances**

Parameter	CAS #	Frequency of Detections (%)*	Frequency of Exceedances (%)*	Sample ID of Max Result	Max Result	PAL Solid	Unit
Aroclor 1248	12672-29-6	16	1	B21-047-SB-2	8.9	0.94	mg/kg
Aroclor 1260	11096-82-5	37	4	B21-039-SB-2	15.9	0.99	mg/kg
Arsenic	7440-38-2	81	74	B21-045-SB-3.5	40.1	3	mg/kg
Benz[a]anthracene	56-55-3	84	2	B21-005-SB-2	36.5	21	mg/kg
Benzo[a]pyrene	50-32-8	87	15	B21-003-SB-5	32.8	2.1	mg/kg
Benzo[b]fluoranthene	205-99-2	89	2	B21-003-SB-5	40.7	21	mg/kg
Chromium VI	18540-29-9	15	2	B21-036-SB-5	14.9	6.3	mg/kg
Dibenz[a,h]anthracene	53-70-3	76	2	B21-003-SB-5	3.1	2.1	mg/kg
Hexachlorobenzene	118-74-1	1	1	B21-057-SB-2	1.1	0.96	mg/kg
Lead	7439-92-1	99	2	B21-048-SB-1	1,610	800	mg/kg
Manganese	7439-96-5	100	15	B21-072-SB-1	74,300	26,000	mg/kg
Oil & Grease	O&G	100	2	B21-012-SB-1	19,200	6,200	mg/kg
PCBs (total)	1336-36-3	49	9	B21-039-SB-2	15.9	0.97	mg/kg
Thallium	7440-28-0	25	17	B21-014-SB-8	178	12	mg/kg
Vanadium	7440-62-2	100	2	B21-013-SB-5	13,400	5,800	mg/kg

*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 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>
Former 1988 PCB Spill Area	B21-002-SB	3.5	Arsenic	3	7.1	
		5	Arsenic	3	4.4	
Former 1988 Acid Leak Area	B21-003-SB	1	Arsenic	3	4.4	
		5	Arsenic	3	4.1	
			Benz[a]anthracene	21	32.7	
			Benzo[a]pyrene	2.1	32.8	
			Benzo[b]fluoranthene	21	40.7	
	Dibenz[a,h]anthracene	2.1	3.1			
	10	Arsenic	3	4.5		
	B21-004-SB	2.5	Arsenic	3	8.2	
5		Arsenic	3	16.8		
10		Arsenic	3	7.7		
Drip Legs	B21-005-SB	2	Arsenic	3	5.8	
			Benz[a]anthracene	21	36.5	
			Benzo[a]pyrene	2.1	30.3	
			Benzo[b]fluoranthene	21	39.6	
		Dibenz[a,h]anthracene	2.1	2.9		
	10	Arsenic	3	11.4		
B21-006-SB	8	Arsenic	3	3.9		
Fuel Shop	B21-007-SB	1	Arsenic	3	7.1	
			Benzo[a]pyrene	2.1	4.2	
		5	Arsenic	3	9.2	
			Manganese	26,000	26,800	
	B21-008-SB	3	Arsenic	3	4.2	
		5	Arsenic	3	6.6	

**Table 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>
Hydraulic Repair Shops	B21-009-SB	2	Arsenic	3	4.9	
		5	Arsenic	3	6.7	
			Manganese	26,000	31,200	
	B21-010-SB	2	Arsenic	3	4.3	
		5	Arsenic	3	22.3	
			Benzo[a]pyrene	2.1	4.1	
	B21-011-SB	1	Arsenic	3	3.7	
			Benzo[a]pyrene	2.1	4	
		5	Arsenic	3	3.8	
	B21-012-SB	1	Arsenic	3	6.2	
Oil & Grease			6,200	19,200		
Oil Houses	B21-013-SB	3.5	Arsenic	3	7.3	
		5	Arsenic	3	13.9	
			Manganese	26,000	37,400	
			Vanadium	5,800	13,400	
	B21-014-SB	8	Arsenic	3	16.6	
			Manganese	26,000	39,700	
			Thallium	12	178	
Vanadium	5,800		11,500			
Oil Heater	B21-015-SB	3	Arsenic	3	5	
		5	Arsenic	3	4.5	
	B21-016-SB	4	Arsenic	3	4.7	
Palm Oil Cooker Aisle	B21-017-SB	2	Arsenic	3	3.2	
			Benzo[a]pyrene	2.1	3.2	
		5	Arsenic	3	7.3	
			Benzo[a]pyrene	2.1	7.6	
	B21-018-SB	2	Arsenic	3	6.8	
8		Arsenic	3	22.3		

**Table 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>
Possible PCB-Contaminated Areas	B21-020-SB	4	Arsenic	3	7.8	
		5	Arsenic	3	11.2	
		10	Arsenic	3	4.2	
	B21-022-SB	1.5	Arsenic	3	9.6	
			Thallium	12	22.4	
		9	Arsenic	3	6.3	
			Manganese	26,000	62,300	
	B21-024-SB	2	Thallium	12	68.6	
			Arsenic	3	9.8	
			Manganese	26,000	33,500	
		5	Thallium	12	45	
			Arsenic	3	11.7	
			Manganese	26,000	41,100	
	B21-026-SB	5	Thallium	12	64.5	
			Arsenic	3	9	
	B21-027-SB	5	Benzo[a]pyrene	2.1	2.5	
			Arsenic	3	19.4	
			Lead	800	831	
	B21-028-SB	1	Arsenic	3	4.2	
		5	Arsenic	3	4.8	
	B21-029-SB	1	Arsenic	3	4.7	
Benzo[a]pyrene			2.1	2.4		
B21-030-SB	5	Arsenic	3	5.2		
		Arsenic	3	5.8		
Chromium Pits	B21-031-SB	1	PCBs (total)	0.97	1.1	
		5	Arsenic	3	4.5	

**Table 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>
Halogen Lines Trenches/Sumps	B21-032-SB	1	Aroclor 1260	0.99	3.8	
			PCBs (total)	0.97	3.8	
		5	Arsenic	3	6.4	
			Benzo[a]pyrene	2.1	5.3	
			Thallium	12	12.6	
		B21-033-SB	2.5	Arsenic	3	9.1
	Manganese			26,000	30,200	
	5		Arsenic	3	11.3	
	B21-034-SB	3	Arsenic	3	7.9	
			Benzo[a]pyrene	2.1	2.9	
			Manganese	26,000	34,200	
		4	Arsenic	3	7.2	
	Benzo[a]pyrene		2.1	8		
	B21-073-SB	1	Arsenic	3	10.1	
			Manganese	26,000	35,800	J
			Thallium	12	74.4	
		5	Arsenic	3	10.5	
			Benzo[a]pyrene	2.1	2.4	
			Thallium	12	28.3	
		10	Arsenic	3	6.9	
	Thallium		12	24		
	B21-074-SB	1	Arsenic	3	10.8	
			Manganese	26,000	29,400	J
			Thallium	12	30.3	
9		Arsenic	3	7.9		
		Benzo[a]pyrene	2.1	4.8		
		Manganese	26,000	29,000	J	
Thallium	12	38.6				

**Table 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>	
Tin Mill Trenches/Sumps	B21-036-SB	5	Arsenic	3	6.5		
			Chromium VI	6.3	14.9	J-	
	B21-038-SB	4	Arsenic	3	4.4		
			Benzo[a]pyrene	2.1	2.6		
Electric Sub-Station/ Transformer	B21-039-SB	2	Aroclor 1260	0.99	15.9		
			Arsenic	3	4.2		
			PCBs (total)	0.97	15.9		
	B21-040-SB	6.5	Arsenic	3	4.2		
10		Arsenic	3	3.5			
Transformer	B21-043-SB	1.5	Arsenic	3	3.3		
	B21-044-SB	2	Aroclor 1260	0.99	4.2		
			Arsenic	3	3.9		
			PCBs (total)	0.97	4.2		
	B21-045-SB	3.5	Arsenic	3	40.1		
		4.5	Arsenic	3	18.6		
			Benzo[a]pyrene	2.1	4.2		
			Manganese	26,000	41,500		
	B21-046-SB	2	Arsenic	3	3.3		
		6	Arsenic	3	6.9		
	B21-047-SB	2	Aroclor 1248	0.94	8.9		
			Arsenic	3	8.3		
			PCBs (total)	0.97	9.4		
	B21-048-SB	1	4	Arsenic	3	16.5	
			7	Arsenic	3	7.1	
Lead				800	1,610		
PCBs (total)				0.97	4.5	J	
			Arsenic	3	7.1		

**Table 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>
Acid Tank	B21-049-SB	1	Arsenic	3	12.3	
			Manganese	26,000	45,100	
			Thallium	12	55.9	
		5	Arsenic	3	7.9	
			Thallium	12	12.8	
		10	Arsenic	3	5.1	
	B21-050-SB	2	Arsenic	3	6	
			Benzo[a]pyrene	2.1	2.9	
			Thallium	12	18.4	
8	Arsenic	3	7.4			
Hydro Oil Reclaim Tank	B21-051-SB	2.5	Arsenic	3	3.2	
	B21-052-SB	2	Arsenic	3	4.2	
Tank Cluster-Oil, Petrosan, Hydraulic	B21-053-SB	2	Arsenic	3	5.3	
	B21-054-SB	1	Arsenic	3	11.3	
			Thallium	12	25.8	
		5	Arsenic	3	10.4	
			Manganese	26,000	53,900	
			Thallium	12	14.1	

**Table 8 - Parcel B21
Soil PAL Exceedances for Specific Targets**

<u>Target Feature</u>	<u>Boring ID</u>	<u>Sample Depth (ft)</u>	<u>Parameter</u>	<u>PAL (mg/kg)</u>	<u>Result (mg/kg)</u>	<u>Final Flag</u>
Chrome Plating Tank	B21-057-SB	2	Arsenic	3	31	
			Chromium VI	6.3	7.1	
			Hexachlorobenzene	0.96	1.1	
		6	Arsenic	3	12.2	
	B21-058-SB	2.5	Arsenic	3	5.9	
Pickler Acid Plate Tank	B21-060-SB	1	Arsenic	3	5.8	
			Manganese	26,000	46,900	J
			Oil & Grease	6,200	12,400	J-
			Thallium	12	55.2	
		4	Arsenic	3	8.1	
	Manganese		26,000	49,300	J	
Thallium	12		24.7			

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.

Site-wide borings providing general coverage are not included on this table.



Parcel B21 - Table 9

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
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Sample: **B21-002-SB-3.5**

2,3,4,6-Tetrachlorophenol	0.072	mg/kg	25,000	no	R
2,4,5-Trichlorophenol	0.18	mg/kg	82,000	no	R
2,4,6-Trichlorophenol	0.072	mg/kg	210	no	R
2,4-Dichlorophenol	0.072	mg/kg	2,500	no	R
2,4-Dimethylphenol	0.072	mg/kg	16,000	no	R
2,4-Dinitrophenol	0.18	mg/kg	1,600	no	R
2-Chlorophenol	0.072	mg/kg	5,800	no	R
2-Methylphenol	0.072	mg/kg	41,000	no	R
3&4-Methylphenol(m&p Cresol)	0.14	mg/kg	41,000	no	R
Benzaldehyde	0.072	mg/kg	120,000	no	R
Pentachlorophenol	0.18	mg/kg	4	no	R
Phenol	0.072	mg/kg	250,000	no	R

Sample: **B21-003-SB-1**

Benzaldehyde	0.68	mg/kg	120,000	no	R
Chromium VI	1	mg/kg	6.3	no	R

Sample: **B21-003-SB-5**

Benzaldehyde	1.5	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-004-SB-2.5**

Chromium VI	1.1	mg/kg	6.3	no	R
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Sample: **B21-004-SB-5**

2,4-Dinitrophenol	0.19	mg/kg	1,600	no	R
3,3'-Dichlorobenzidine	0.077	mg/kg	5.1	no	R
4-Chloroaniline	0.077	mg/kg	11	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
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Sample: *B21-009-SB-2*

Benzaldehyde	0.076	mg/kg	120,000	no	R
Chromium VI	1.2	mg/kg	6.3	no	R

Sample: *B21-009-SB-5*

Benzaldehyde	0.086	mg/kg	120,000	no	R
Chromium VI	1.3	mg/kg	6.3	no	R

Sample: *B21-011-SB-1*

Benzaldehyde	0.7	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: *B21-011-SB-5*

Benzaldehyde	0.1	mg/kg	120,000	no	R
Chromium VI	1.6	mg/kg	6.3	no	R

Sample: *B21-012-SB-1*

Benzaldehyde	0.077	mg/kg	120,000	no	R
Chromium VI	1.2	mg/kg	6.3	no	R

Sample: *B21-012-SB-5*

Benzaldehyde	0.088	mg/kg	120,000	no	R
Chromium VI	1.3	mg/kg	6.3	no	R

Sample: *B21-028-SB-1*

Chromium VI	1.1	mg/kg	6.3	no	R
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Sample: *B21-028-SB-5*

Chromium VI	1.2	mg/kg	6.3	no	R
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Sample: *B21-031-SB-1*

Chromium VI	1.1	mg/kg	6.3	no	R
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Sample: *B21-031-SB-5*

Chromium VI	1.1	mg/kg	6.3	no	R
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Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
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Sample: **B21-032-SB-1**

Benzaldehyde	0.75	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-032-SB-5**

Benzaldehyde	0.79	mg/kg	120,000	no	R
Chromium VI	1.2	mg/kg	6.3	no	R

Sample: **B21-035-SB-1**

Benzaldehyde	0.073	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-035-SB-5**

Benzaldehyde	0.077	mg/kg	120,000	no	R
Chromium VI	1.2	mg/kg	6.3	no	R

Sample: **B21-036-SB-2**

Chromium VI	1.2	mg/kg	6.3	no	R
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Sample: **B21-039-SB-2**

2,3,4,6-Tetrachlorophenol	0.094	mg/kg	25,000	no	R
2,4,5-Trichlorophenol	0.24	mg/kg	82,000	no	R
2,4,6-Trichlorophenol	0.094	mg/kg	210	no	R
2,4-Dichlorophenol	0.094	mg/kg	2,500	no	R
2,4-Dimethylphenol	0.094	mg/kg	16,000	no	R
2,4-Dinitrophenol	0.24	mg/kg	1,600	no	R
2-Chlorophenol	0.094	mg/kg	5,800	no	R
2-Methylphenol	0.094	mg/kg	41,000	no	R
3&4-Methylphenol(m&p Cresol)	0.19	mg/kg	41,000	no	R
Chromium VI	1.5	mg/kg	6.3	no	R
Pentachlorophenol	0.24	mg/kg	4	no	R
Phenol	0.094	mg/kg	250,000	no	R

Sample: **B21-044-SB-2**

Chromium VI	1.2	mg/kg	6.3	no	R
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Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
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Sample: *B21-060-SB-1*

Benzaldehyde	0.69	mg/kg	120,000	no	R
Chromium VI	1	mg/kg	6.3	no	R

Sample: *B21-060-SB-4*

1,1,2,2-Tetrachloroethane	0.0039	mg/kg	2.7	no	R
1,4-Dioxane	0.078	mg/kg	24	no	R
Benzaldehyde	0.72	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: *B21-066-SB-1*

Benzaldehyde	1.3	mg/kg	120,000	no	R
Chromium VI	1	mg/kg	6.3	no	R

Sample: *B21-066-SB-7.5*

1,4-Dioxane	0.11	mg/kg	24	no	R
Benzaldehyde	1.4	mg/kg	120,000	no	R

Sample: *B21-067-SB-1*

Benzaldehyde	1.3	mg/kg	120,000	no	R
Chromium VI	1	mg/kg	6.3	no	R

Sample: *B21-067-SB-5*

Benzaldehyde	1.9	mg/kg	120,000	no	R
Chromium VI	1.4	mg/kg	6.3	no	R

Sample: *B21-068-SB-1*

Benzaldehyde	1.4	mg/kg	120,000	no	R
Chromium VI	1	mg/kg	6.3	no	R

Sample: *B21-068-SB-5*

Benzaldehyde	1.5	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: *B21-069-SB-1*

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
-----------	--------	-------	-----	--------------	------

Sample: **B21-069-SB-1**

Benzaldehyde	0.74	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-069-SB-5**

Benzaldehyde	0.73	mg/kg	120,000	no	R
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Sample: **B21-071-SB-1**

Benzaldehyde	0.7	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-071-SB-5**

Benzaldehyde	0.75	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-072-SB-1**

Benzaldehyde	0.72	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-072-SB-5**

Benzaldehyde	0.073	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-073-SB-1**

Benzaldehyde	0.071	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-073-SB-5**

Benzaldehyde	0.72	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Sample: **B21-074-SB-1**

Benzaldehyde	0.72	mg/kg	120,000	no	R
Chromium VI	1.1	mg/kg	6.3	no	R

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
-----------	--------	-------	-----	--------------	------

Sample: **B21-074-SB-9**

1,4-Dioxane	0.094	mg/kg	24	no	R
Benzaldehyde	0.78	mg/kg	120,000	no	R
Chromium VI	1.2	mg/kg	6.3	no	R

APPENDIX A

**Parcel B21 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	RATIONALE	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Former 1988 PCB Spill Area	AOC B	DCC Figure 3-1/ Drawing 5040	On November 9, 1988, approximately 400 to 450 gallons of PCB oil spilled at the #10 Tin Line, when a transformer fell and ruptured. The area was promptly cleaned, and wipe samples indicated that concentrations were below the applicable cleanup standards. The area was sealed with epoxy paint, and no further action was proposed.	2	B21-001 and B21-002	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 (all depths)
Former 1991 Acid Leak Area	AOC I	DCC Figure 3-1	An overflow line leaked acid below process tanks within the Tin Mill into a trench that discharged to the Tin Mill Canal. The line was repaired shortly after the leak was detected, on June 23, 1991. Since the spill was a one-time incident and the leaking line was promptly repaired, no further action was proposed.	2	B21-003 and B21-004	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')
Drip Legs		Drip Leg Drawings 5886B and 5888	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 on to the ground.	2	B21-005 and B21-006	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')
Fuel Shop		Drawing 5045	Investigate potential impacts related to the fuel shop areas (potential leaks or releases).	2	B21-007 and B21-008	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')
Hydraulic Repair Shops (2)		Drawings 5040 and 5140	Investigate potential impacts related to the hydraulic repair shop (potential leaks or releases).	4	B21-009 through B21-012	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')

**Parcel B21 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	RATIONALE	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Oil House		Drawing 5145	Investigate potential impacts related to the oil house (potential leaks or releases).	2	B21-013 and B21-014	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')
Oil Heater		Drawing 5140	Investigate potential impacts related to the oil heater (potential leaks or releases).	2	B21-015 and B21-016	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')
Palm Oil Cooker Aisle		Drawing 5545	Investigate potential impacts related to the palm oil cooker aisle (potential leaks or releases).	2	B21-017 and B21-018	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')
Possible PCB-Contaminated Areas (4)		PCB Site Inventory Data/Map	Investigate potential impacts related to the storage and operation of PCB-containing equipment (potential leaks or releases).	12	B21-019 through B21-030	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')
Chromium Pits		Pit Outlines	Investigate potential impacts related to the chromium pits (potential leaks or releases). Note that the chromium pits are also targeted by multiple additional soil borings completed in the vicinity listed under other sampling targets.	1	B21-031	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')

**Parcel B21 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	RATIONALE	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Halogen Lines Trenches/ Sumps	REC (unidentified), Finding 43/ SWMU 88	DCC Figure 3-1/ Drawing 5545	The Halogen Lines are located in the northwestern corner of the Finishing Mills Area, within the Tin Mill. The trenches/sumps were designed to transport passivation wastewater and spent chemical solutions to the Tin Mill Canal discharge point. Separate trench and sump systems collected different types of discharges. Chromium-bearing wastes were sent to the Chromium HDS Plant, and oily wastewater and rinsewater were discharged to the Tin Mill Canal. Further evaluation was proposed regarding SWMU 88.	6	B21-032 through B21-035, B21-073 and B21-074	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')
Tin Mill Trenches/ Sumps	REC 1R, Finding 39/ SWMU 84	DCC Figure 3-1	The trenches/sumps in the Tin Mill Area were units designed to transport process wastewater to the Tin Mill Canal discharge point. These units consisted primarily of concrete and brick-lined concrete sewers, with some open/box trenches. They managed non-contact cooling water (discharged to the Tin Mill Canal) and pickling process wastewater (discharged to AOC W). Further evaluation was proposed regarding SWMU 84.	3* (2)	B21-036 through B21-038	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')

**Parcel B21 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	RATIONALE	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Electric Sub-Station / Transformer		Drawing 5040	Investigate potential impacts related to electric sub-stations (potential leaks or releases).	2	B21-039 and B21-040	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)
Transformer		Drawings 5040 and 5045	Investigate potential impacts related to transformers (potential leaks or releases).	8* (6)	B21-041 through B21-048	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')
Acid Tank		Drawing 5145	Investigate potential impacts related to acid and waste acid tanks (potential leaks or releases).	2	B21-049 and B21-050	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')
Hydro Oil Reclaim Tank		Drawing 5145	Investigate potential impacts related to the hydro oil reclaim tank (potential leaks or releases).	2	B21-051 and B21-052	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')
Tank Cluster - Oil, Petrosan, Hydraulic		Drawing 5050	Investigate potential impacts related to tanks containing rolling oil, petrosan, and hydraulic substances (potential leaks or releases).	2	B21-053 and B21-054	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')
Plating Tank Room		Drawing 5040	Investigate potential impacts related to the plating tank room (potential leaks or releases).	2* (1)	B21-055 and B21-056	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')
Chrome Plating Tank		Drawing 5040	Investigate potential impacts related to chrome plate tanks (potential leaks or releases).	2	B21-057 and B21-058	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')

**Parcel B21 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland**

Table 1 - Soil Sampling Summary

Source Area/ Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	RATIONALE	Number of Locations	Sample Locations	Boring Depth	Sample Depth	Analytical Parameters: Soil Samples
Pickler Acid Plate Tank		Drawing 5050	Investigate potential impacts related to pickler acid plate tanks (potential leaks or releases).	2	B21-059 and B21-060	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')
Plating Tank		Drawing 5145	Investigate potential impacts related to plating tanks (potential leaks or releases).	2* (0)	B21-061 and B21-062	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')
Parcel B21 Coverage			Investigate potential impacts related to unknown historical activities, and characterize soil in areas not previously sampled.	10	B21-063 through B21-072	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:				74* (68)				

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.

Engineered Barrier (41-70 acres): 1 boring per 4 acres with no less than 13.

No Engineered Barrier (9.1 acres) = **10 borings required, 11 completed**

Engineered Barrier (51.4 acres) = **13 borings required, 57 completed**

Parking/Roads (10.2 acres)

Buildings (41.2 acres)

* Soil borings B21-037-SB, B21-041-SB, B21-042-SB, B21-056-SB, B21-061-SB, and B21-062-SB were not able to be completed/sampled. See Phase II Report text for details.

VOC - Volatile Organic Compounds (Target Compound List)

SVOCs - Semivolatile Organic Compounds (Target Compound List)

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

DRO/GRO - Diesel Range Organics/Gasoline Range Organics

O&G - Oil & Grease

PCBs - Polychlorinated Biphenyls

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

bgs - Below Ground Surface

APPENDIX B



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 569289.37
 Easting (US ft) : 1460688.71

Boring ID: B21-001-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-2') CONCRETE	NA	
48	0.2		B21-001-SB-3	(2-6.5') Non-native SAND and fine GRAVEL, medium dense, light brown from 2.6-3' bgs then dark brown, dry then moist at 3.5' bgs, very moist 3.5-5' bgs, no plasticity, no cohesion	SW/GP	
	0.9					
5	75.8		B21-001-SB-5			
40	-			(6.5-10') BRICK and CONCRETE GRAVEL, fine to coarse, medium dense to dense, bluish gray and very dark brown with some yellow, wet, no plasticity, no cohesion	GW	Wet at 8' bgs
10				End of boring		

Total Borehole Depth: 10' bgs
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 569296.65
 Easting (US ft) : 1460757.96

Boring ID: B21-002-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
5.2	52	0.2	B21-002-SB-3.5	(1-10') Non-native SAND, BRICK, SLAG and CONCRETE GRAVEL, fine to coarse, with SILT, medium dense to dense, dark brown grading to very dark gray, dry then moist to very moist from 3.5-5' bgs then wet at 8.5' bgs, no plasticity, no cohesion	SW/GW	Wet at 8.5' bgs
5.4		0.2				
5.7		0.3	B21-002-SB-5			
10	30	5.3		End of boring		

Total Borehole Depth: 10' bgs,
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/17/18
 Weather : Sunny, 80s

Northing (US ft) : 568807.72
 Easting (US ft) : 1460346.91

Boring ID: B21-003-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	No water encountered
	50	0.4	B21-003-SB-1	(1-7') SAND with GRAVEL, medium to coarse, loose to dense, black to pale brown to pale yellow, moist, no plasticity, no cohesion	SW	
		-				
		3.7				
		0.7	B21-003-SB-5			
5		-				
		-				
	60	0.7		(7-8') BRICK	NA	
		0.0		(8-20') CLAY with SAND, very firm to slightly firm, black to bluish gray to yellowish red, moist, low plasticity, cohesive	CL	
		0.0	B21-003-SB-10			
		0.0				
	100	0.0				
		0.0				
		0.7				
		1.0				
		0.0				
		0.0				
15		-				
		0.4				
	80	0.8				
		0.1				
		0.1				
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/17/18
 Weather : Sunny, 80s

Northing (US ft) : 568873.25
 Easting (US ft) : 1460336.24

Boring ID: B21-004-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE		
50	3.4		B21-004-SB-2.5	(1-5') SAND with GRAVEL, medium, loose, black, dry, no plasticity, no cohesion	SP	METAL fragments from 2.5-5'
	-					
	0.0					
	0.3		B21-004-SB-5			
100	0.4			(5-20') CLAY with SAND, firm, pale gray to yellowish red, moist, low plasticity, cohesive		No water encountered
	0.3					
	1.7					
	0.1					
	0.6		B21-004-SB-10			
80	-				CL	
	0.2					
	0.2					
	0.4					
	0.5					
15	-					
	0.1					
	0.1					
	0.4					
	0.3					
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/20/18
 Weather : Sunny, 80s

Northing (US ft) : 569215.58
 Easting (US ft) : 1460460.26

Boring ID: B21-005-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
0.9			B21-005-SB-2	(1-20') CLAY with SAND, very firm to soft, pale brown to yellowish red, moist, low plasticity, low cohesion	CL	SAND lens at 14' bgs GRAVEL lens at 17' bgs
80		0.0				
		0.0				
		16.3				
5		10.2				
		108.4	B21-005-SB-7			
100		7.3				
		8.7				
		22.3	B21-005-SB-10			
10		0.0				
		16.3				
		25.9				
		19.5				
15		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
20		0.1		End of boring		No water encountered

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/20/18
 Weather : Sunny, 80s

Northing (US ft) : 569240.83
 Easting (US ft) : 1460460.29

Boring ID: B21-006-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	Wet at 12' bgs
	60	-	B21-006-SB-2	(1-3.5') GRAVEL, medium, dense, dark gray to black, moist, no plasticity, no cohesion	GP	
		88.5		(3.5-11') CLAY with SAND, firm, pale brown to yellowish red, moist, low plasticity, low cohesion	CL	
		3.2				
5		-		(11-13.5) CLAY with SAND and GRAVEL, soft, pale brown to reddish yellow, wet, low plasticity, low cohesion	CL	
	80	22.9	B21-006-SB-8			
		12.2				
		0.0				
10		-		(13.5-15') CLAY with SAND, pale brown to yellowish red, moist, soft, low plasticity, low cohesion	CL	
	60	0.2				
		0.2				
		0.4				
15				End of boring		

Total Borehole Depth: 15' bgs.
 Terminated at 15' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/23/18
 Weather : Cloudy, 80s
 Northing (US ft) : 570042.99
 Easting (US ft) : 1460484.02

Boring ID: B21-007-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-0.1') CONCRETE	NA	
		0.0	B21-007-SB-1	(0.1-0.6') SAND with CLAY and fine GRAVEL, loose, dark brown and reddish yellow, moist, no plasticity, no cohesion	SW-SC	
		-		(0.6-6.5') SAND with trace GRAVEL, medium dense, black, moist, no plasticity, no cohesion		
60		-				
		0.0			SW/GP	
		1.4	B21-007-SB-5			
5		-				
		-				
40		-		(6.5-10') BRICK GRAVEL, dense, yellowish brown, reddish yellow and dark brown, wet, no plasticity, no cohesion		
		4.1			GW	Wet at 8' bgs
		11.0				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/6/18
 Weather : Sunny, 90s
 Northing (US ft) : 570072.40
 Easting (US ft) : 1460478.70

Boring ID: B21-008-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-2') CONCRETE	NA	
	66	12.3	B21-008-SB-3	(2-2.5') Non-native SAND with SLAG GRAVEL and some SILT, fine to medium, medium dense, brown with gray, dry to moist, no plasticity, no cohesion	SW/GW GW	
		4.3		(2.5-2.9') GRAVEL, angular, with trace SAND, medium dense, light gray with some very pale brown, dry, no plasticity, no cohesion		
		0.1	B21-008-SB-5	(2.9-9') Non-native SAND with SLAG and BRICK GRAVEL and some SILT, with some large BRICK COBBLES, medium dense, dark brown, brown, and black with trace yellow and dark gray, dry with trace moisture, no plasticity, no cohesion		
5					SW/GW	Some GRAVEL has gray metallic luster, trace GRAVEL with black vitreous luster
	80	1.3				
		6.2				
		0.1		(9-10') SLAG and BRICK GRAVEL with some SILT, fine, medium dense to loose, dark brown with trace yellow and gray, wet, no plasticity, no cohesion	SW/GP	Wet at 9' bgs
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/17/18
 Weather : Rainy 70s
 Northing (US ft) : 568826.2492
 Easting (US ft) : 1460528.89

Boring ID: B21-009-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
60		4.3	B21-009-SB-2	(1-10') SLAG GRAVEL with SAND, medium to coarse, white to dark brown to black, dry to wet at 9' bgs, no plasticity, no cohesion	GW	Wet at 9' bgs
		-				
		0.8				
5		0.1	B21-009-SB-5			
		-				
40		-		(10-13.5') CLAY with SAND, firm to soft, pale brown to reddish yellow, wet, low plasticity, cohesive	CL	
		0.1				
10		0.0				
90		0.0		(13.5-15') CLAY with SAND, pale brown to yellowish red, moist, soft, low plasticity, low cohesion	CL	
		0.5				
15		0.0		End of boring		

Total Borehole Depth: 15' bgs.
 Terminated at 15' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny, 80s

Northing (US ft) : 568829.40
 Easting (US ft) : 1460563.18

Boring ID: B21-010-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		0.6	B21-010-SB-2	(1-6.5') SAND with GRAVEL, medium to fine, dry, pale gray to white, loose, no plasticity, no cohesion		
60		-				
		0.0			SW	
		0.0	B21-010-SB-5			
5		-				
		-				
		-		(6.5-9.5') SAND with GRAVEL, medium to fine, loose, pale gray to white, dry to wet at 9' bgs, no plasticity, no cohesion	SW	
40		-				
		0.0				
		0.5		(9.5-10') CLAY with SAND and GRAVEL, pale brown, wet, firm, low plasticity, low cohesion	CL	
10				End of boring		Wet at 9' bgs Odor at 9.5' bgs

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny, 80s

Northing (US ft) : 568593.48
 Easting (US ft) : 1460635.47

Boring ID: B21-011-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-011-SB-1	(0-1.8') SAND with SILT and GRAVEL, medium to fine, loose, medium brown, no plasticity, no cohesion	SW-SM	
		-		(1.8-3.2') BRICK	NA	
	60	0.2		(3.2-10') GRAVEL with SAND, coarse, very pale gray to bluish gray to reddish yellow, dense, slightly moist to wet at 7.5' bgs, no plasticity, no cohesion		
		0.6				
		0.1	B21-011-SB-5			
5		-				
		3.6			GP	
	80	1.2				Wet at 7.5' bgs
		0.1				
		0.0				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/17/18
 Weather : Sunny, 80s

Northing (US ft) : 568598.29
 Easting (US ft) : 1460696.78

Boring ID: B21-012-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0	B21-012-SB-1	(0-5.5') GRAVEL with SAND, medium to coarse, loose to medium dense, dark brown to black to very pale gray, no plasticity, no cohesion	GW	
		-				
80		0.1				
		1.4				
		0.4	B21-012-SB-5	(5.5-10') GRAVEL with SAND, medium to coarse, loose to medium dense, pale gray to bluish gray, moist to wet at 8' bgs, no plasticity, no cohesion	GW	Wet at 7.5' bgs
5		-				
		0.1				
80		0.5				
		0.1				
		0.1				
10	End of Boring					

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 570398.34
 Easting (US ft) : 1460467.99

Boring ID: B21-013-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	
1				(1-5.1') Non-native GRAVEL with SAND, fine to coarse, medium dense, brown and dark brown with trace gray and yellow, very moist from 2.2-2.4' bgs then dry, no plasticity, no cohesion		
2						
3	56	0.0	B21-013-SB-3.5		GW/SW	No water encountered
4		0.1				
5		0.0	B21-013-SB-5			
5	100	0.0		(5.1-5.2') CONCRETE GRAVEL, loose, grayish blue, dry, no plasticity, no cohesion	GP	
				End of boring		

Total Borehole Depth: 5.2' bgs
 Terminated at 5.2' due to refusals



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/23/18
 Weather : Cloudy, 80s
 Northing (US ft) : 570417.92
 Easting (US ft) : 1460454.80

Boring ID: B21-014-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	1-inch CONCRETE layer at 3' bgs
		1.6	B21-014-SB-2	(1-3') SAND with SLAG GRAVEL, fine to coarse, medium dense, pale brown and gray, dry, no plasticity, no cohesion	SW/GW	
76		10.6		(3-5.5') SAND, fine to coarse, with GRAVEL, medium dense, brown, dry, no plasticity, no cohesion	SW	
		3.4				
		12.2				
5		-		(5.5-7.6') CLAY with some SAND and trace GRAVEL, firm, grayish brown, dry, low plasticity, low cohesion	CL	
		9.4				
78		15.4	B21-014-SB-8	(7.6-10') SLAG GRAVEL, fine, with SAND, medium dense, dark brown, wet at 8.8' bgs, no plasticity, no cohesion	GP	Wet at 8.8' bgs
		1.9				
		0.0				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 568513.93
 Easting (US ft) : 1460858.89

Boring ID: B21-015-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-2') CONCRETE	NA	
50	1.2	B21-015-SB-3		(2-3') Non-native SAND with fine metallic SLAG GRAVEL, medium dense, very dark brown and very dark gray, dry, no plasticity, no cohesion	SW/GP	
	0.8			(3-10') SLAG, SAND and GRAVEL-sized, with trace CONCRETE GRAVEL and with some SILT at depth and trace green stained SLAG GRAVEL at 7.5-8' bgs, medium dense, very light gray and light brown, dry then wet at 8' bgs, no plasticity, no cohesion	SW/GW	Wet at 8' bgs
	12.5	B21-015-SB-5				
5		-				
	66	0.0			SW/GW	
		16.3				
		0.0				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 568541.36
 Easting (US ft) : 1460874.86

Boring ID: B21-016-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-3') CONCRETE		
100		-				
		0.0	B21-016-SB-4	(3-7') SLAG, SAND and GRAVEL-sized, loose, light gray and very pale brown with some red staining, dry, no plasticity, no cohesion	SW/GW	Wet at 8' bgs
		0.1	B21-016-SB-5			
5		-				
40		-		(7-10') SLAG GRAVEL, fine to coarse, loose to medium dense, light brown with trace red staining, wet, no plasticity, no cohesion		
		0.0			GW	
		14.1				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/20/18
 Weather : Sunny, 80s

Northing (US ft) : 569714.26
 Easting (US ft) : 1460453.76

Boring ID: B21-017-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	No water encountered
	80	16.8	B21-017-SB-2	(1-4') CLAY with SAND and GRAVEL, very firm, very pale brown to black, moist, low plasticity, cohesive	CL	
		-				
		20.7				
		21.6	B21-017-SB-5	(4-5') GRAVEL with SAND, medium, loose, black to bluish gray, moist, no plasticity, no cohesion	GP	
5		0.0		(5-20') CLAY with SAND, soft to firm, bluish gray to reddish yellow, moist, low plasticity, low cohesion		
		0.2				
	100	0.1				
		14.2				
		0.9				
10		4.4				
		2.7				
	100	1.6			CL	
		38.8				
		10.4				
15		1.1				
		0.7				
	100	5.3				
		13.1				
		14.7				
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/20/18
 Weather : Sunny, 80s

Northing (US ft) : 569685.49
 Easting (US ft) : 1460450.59

Boring ID: B21-018-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
	80	0.0	B21-018-SB-2	(1-10.5') CLAY with SAND and GRAVEL, medium firm, pale brown, moist, low plasticity, low cohesion	CL	Brick at 9' bgs
		-				
		61.3				
		28.2				
5		0.0				
		0.0				
	100	46.1	B21-018-SB-8			
		42.0				
		1.3				
10		-		(10.5-13.7) SAND with CLAY and GRAVEL, medium to fine, dense, pale brown, wet, no plasticity, no cohesion	SW-SC	Wet at 11' bgs
	80	0.0				
		0.0				
		24.2		(13.7-15') CLAY with SAND and GRAVEL, medium firm, pale brown, moist, low plasticity, low cohesion	CL	
15				End of boring		

Total Borehole Depth: 15' bgs.
 Terminated at 15' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/24/18
 Weather : Cloudy 80s
 Northing (US ft) : 571313.08
 Easting (US ft) : 1460526.15

Boring ID: B21-019-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		13.4	B21-019-SB-2	(1-8.7') SAND with GRAVEL, medium to fine, dense, pale gray to pale brown, slightly moist, no plasticity, no cohesion	SW	Wet at 9' bgs
80		12.5				
		10.7				
		12.8				
5		-		(8.7-10') GRAVEL with SAND, medium to coarse, dense, dark brown to black, moist to wet at 9' bgs, no plasticity, no cohesion	GW	
		14.3	B21-019-SB-7			
	80	4.6				
		4.4				
10		10.3				
End of boring						

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 9/6/18
 Weather : Sunny, 90s
 Northing (US ft) : 571270.37
 Easting (US ft) : 1460473.20

Boring ID: B21-020-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	Wet at 16.5' bgs
	40	-		(1-2.5') SLAG GRAVEL, fine, loose, light brownish gray, dry, no plasticity, no cohesion	GP	
		-		(2.5-5') Non-native SAND with some BRICK and SLAG GRAVEL, fine to coarse, medium dense, brown with gray and trace yellow, dry, no plasticity, no cohesion	SW	
		0.1	B21-020-SB-4			
		0.0	B21-020-SB-5			
5		0.0		(5-20') Non-native SAND and BRICK and SLAG GRAVEL with larger brick GRAVEL from 12-15' bgs, medium dense to dense, trace moisture from 12-14.5' bgs, moist from 14.5-15' bgs, wet at 16.5' bgs, no plasticity, no cohesion	SW/GW	
	90	0.2				
		0.2				
		0.1				
		0.3	B21-020-SB-10			
10		-				
	84	0.4				
		0.6				
		0.6				
		0.3				
15		1.9				
		0.1				
	100	0.1				
		-				
		-				
20				End of boring		

Total Borehole Depth: 20' bgs,
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/24/18
 Weather : Cloudy 80s

Northing (US ft) : 571242.60
 Easting (US ft) : 1460567.12

Boring ID: B21-021-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		2.1	B21-021-SB-1	(0-6') SILT with SAND and GRAVEL, firm, pale brown to pale gray, moist, low plasticity, low cohesion	ML	
40	-	-				
5		5.8	B21-021-SB-5	(6-10') CLAY with SAND and GRAVEL, medium firm to soft, pale brown to reddish yellow, moist to wet at 7.5' bgs, low plasticity, low cohesion	CL	Wet at 7.5' bgs
60	-	-				
	1.4					
	3.3					
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/23/18
 Weather : Cloudy 80s

Northing (US ft) : 570918.57
 Easting (US ft) : 1460386.05

Boring ID: B21-022-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-0.5') CONCRETE	NA	
		0.7	B21-022-SB-1.5	(0.5-10') Non-native SAND with some fine SLAG GRAVEL, fine to coarse, medium dense, brown, dry then wet at 9' bgs, no plasticity, no cohesion	SW	WOOD fragments at 4.5' bgs
		-				
50		-				
		0.4				
		1.9				
5		-				
		0.1				Trace purple SLAG at 7' bgs
	72	1.8				
		9.6	B21-022-SB-9			Wet at 9' bgs
		3.2				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/23/18
 Weather : Cloudy 80s

Northing (US ft) : 570889.57
 Easting (US ft) : 1460408.62

Boring ID: B21-023-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		0.0	B21-023-SB-2	(1-7') SAND, fine to coarse, with some fine SLAG GRAVEL, medium dense, light grayish brown, dry, no plasticity, no cohesion	SW	
70		0.0				
		0.0	B21-023-SB-5			
5		-		(7-8') SAND, fine to coarse, yellow, moist, no plasticity, no cohesion	SW	Wet at 8' bgs
		0.0		(8-10') SLAG GRAVEL, fine to coarse, with SAND, medium dense to dense, dark brown, wet, no plasticity, no cohesion	GW	
68		0.0				
		18.4				
		0.1				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/24/18
 Weather : Rainy 80s
 Northing (US ft) : 570970.13
 Easting (US ft) : 1460381.88

Boring ID: B21-024-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	
		0.0	B21-024-SB-2	(1-3.5') Non-native SAND with fine BRICK GRAVEL and SILT, medium dense, dark brown and yellow, wet grading to dry, no plasticity, no cohesion	SW/GW	
70		0.0				
		0.0		(3.5-6.5') SLAG and BRICK GRAVEL with SAND, loose, gray yellow and brown, dry, no plasticity, no cohesion		
		0.0	B21-024-SB-5			
5					GW/SW	No water encountered
33						
		0.0		End of boring		
10						

Total Borehole Depth: 6.5' bgs.
 Terminated at 6.5' bgs due to refusals



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 80s
 Northing (US ft) : 568784.88
 Easting (US ft) : 1460806.93

Boring ID: B21-025-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		0.7	B21-025-SB-2	(1-2') SAND with GRAVEL, medium to fine, loose, pale gray to brown, dry, no plasticity, no cohesion	SW	
	60	-		(2-2.3') BRICK	NA	
		1.4		(2.3-4.5') SAND with GRAVEL, medium to fine, loose, pale gray to brown, dry, no plasticity, no cohesion	SW	
		0.2		(4.5-5') BRICK	NA	
5		-		(5-7.5') SAND with GRAVEL and CLAY, fine to medium, loose, pale gray to brown, dry, no plasticity, no cohesion	SW	BRICK fragments from 6-8' bgs
		0.0				
	80	22.1	B21-025-SB-7.5			
		15.3		(7.5-10') GRAVEL with SAND, medium to coarse, dense, medium brown to black, moist to wet at 8' bgs, no plasticity, no cohesion	GW	Wet at 8' bgs
		0.2				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 90s
 Northing (US ft) : 568808.03
 Easting (US ft) : 1460777.62

Boring ID: B21-026-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		0.7	B21-026-SB-2	(1-1.7') SLAG GRAVEL, fine, with SAND, medium dense, black and yellowish red, dry, non-plastic, non-cohesive	GP/SW	
	74	0.8		(1.7-3.5') CLAY, firm, yellowish brown, slightly moist, low plasticity, cohesive	CL	
		0.4		(3.5-7.5') SAND with SLAG GRAVEL, fine to coarse, medium dense, gray to brown, dry, no plasticity, no cohesion		
		0.8	B21-026-SB-5			
5		-			SW/GW	
	50	0.1		(7.5-8.3') BRICK GRAVEL, loose, red, dry, non-plastic, non-cohesive	NA	Wet at 8.3' bgs
		0.5		(8.3-10') SILT, firm, brown with trace red, wet, non-plastic, non-cohesive	ML	
10		0.0		End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 80s
 Northing (US ft) : 568760.39
 Easting (US ft) : 1460751.90

Boring ID: B21-027-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.1	B21-027-SB-1	(0-2.2') SAND with GRAVEL, medium to fine, loose, pale gray to brownish red, dry, no plasticity, no cohesion	SW	
		-		(2.2-3.2') BRICK	NA	
50		0.4		(3.2-5.75') GRAVEL with SAND and SILT, medium to coarse, dense, pale brown to bluish gray, moist, no plasticity, no cohesion	GW	
		0.1	B21-027-SB-5		GW	
5		-		(5.75-10') GRAVEL with SAND, medium to coarse, dense, very pale gray to brownish red, moist to wet at 7' bgs, no plasticity, no cohesion		
		3.3			GW	
70		73.7			GW	
		0.1				
		0.1				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/19/18
 Weather : Sunny 80s
 Northing (US ft) : 568967.50
 Easting (US ft) : 1460781.64

Boring ID: B21-028-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		2.2	B21-028-SB-1	(0-2') SAND with GRAVEL, medium to fine, loose, dark brown, slightly moist, no plasticity, no cohesion	SW	
		-				
70		5.2		(2-6.5') CLAY with SAND and GRAVEL, pale brown to reddish yellow, moist, firm, low plasticity, cohesive		
		0.8				
		0.1	B21-028-SB-5		CL	
5		-				
		-				
40		-		(6.5-8.3') SAND with GRAVEL, medium to fine, dark brown, wet, dense, no plasticity, no cohesion	SW	Thin CLAY lens at 6.5' bgs Wet at 7' bgs
		4.8		(8.3-9.5') GRAVEL, coarse, dense, wet, no plasticity, no cohesion	GP	
		0.2		(9.5-10') SAND with GRAVEL, medium to fine, dense, dark brown, wet, no plasticity, no cohesion	SW	
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : K. Pumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 80s
 Northing (US ft) : 568894.76
 Easting (US ft) : 1460770.92

Boring ID: B21-029-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-029-SB-1	(0-3.3') SAND with GRAVEL, medium to fine, loose, pale brown to bluish gray, dry, no plasticity, no cohesion	SW	
	80	0.1				
		0.5				
		0.4		(3.3-6.5') GRAVEL with CLAY and SAND, coarse, dense, medium brown, moist, no plasticity, no cohesion		
		0.1	B21-029-SB-5		GP	
5		-				
		-				
	40	-		(6.5-10') GRAVEL with SAND, coarse to medium, dense, moist to wet at 8.5' bgs, pale gray, no plasticity, no cohesion		
		3.6			GW	Wet at 8.5' bgs
		7.3				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny, 80s
 Northing (US ft) : 568954.99
 Easting (US ft) : 1460709.09

Boring ID: B21-030-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1.5') CONCRETE	NA	No water encountered
	70	0.3	B21-030-SB-2.5	(1.5-2.7') SAND, fine to coarse, medium dense, reddish yellow, very moist, no plasticity, no cohesion	SW	
		2.9		(2.7-20) CLAY with trace SAND, hard then soft from 4-8' bgs then hard from 7.8-15' bgs then firm to soft from 15-20' bgs, very pale brown with reddish yellow then light greenish gray and dark brown from 9.9-10' bgs, then light brownish gray and reddish yellow mottling from 10-20' bgs, dry to very moist, low plasticity, low cohesion	CL	
		0.3				
		0.1	B21-030-SB-5			
5		-				
	64	-				
		5.2				
		0.0				
		0.0	B21-030-SB-10			
10		-				
	76	5.4				
		0.8				
		0.1				
		0.9				
15		3.1				
	90	0.0				
		0.0				
		0.0				
20		2.1				
End of boring						

Total Borehole Depth: 20' bgs
 Terminated at 20' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/19/18
 Weather : Sunny 80s
 Northing (US ft) : 569025.71
 Easting (US ft) : 1460738.02

Boring ID: B21-031-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		2.1	B21-031-SB-1	(0-3.8') SAND with GRAVEL, fine to medium, dense, dark brown to dark gray, moist, no plasticity, no cohesion	SW	
		-				
60		-				
		2.2				
		0.0	B21-031-SB-5	(3.8-5') CLAY with SAND, very firm, yellowish red to pale brown, moist, low plasticity, low cohesion	CL	
5		-		(5-7.7') CLAY with SAND, very firm, yellowish red to pale brown, moist, low plasticity, cohesive	CL	Wet at 7' bgs
		-				
60		5.1				
		17.6		(7.7-10') GRAVEL with SAND, medium to coarse, loose, bluish gray to dark gray, wet, no plasticity, no cohesion	GW	
		0.2				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' bgs due to water



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Overcast 80s
 Northing (US ft) : 570570.81
 Easting (US ft) : 1460286.39

Boring ID: B21-032-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-032-SB-1	(0-10') SAND with GRAVEL, fine to coarse, dense, moist to wet at 7.5' bgs, dark brown, no plasticity, no cohesion	SW	Wet at 7.5' bgs
		2.1				
80		10.7				
		14.3				
5		1.3	B21-032-SB-5			
		-				
	50	7.4				
		11.1				
		0.5				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/16/18
 Weather : Sunny 90s
 Northing (US ft) : 570585.74
 Easting (US ft) : 1460418.75

Boring ID: B21-033-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	No water encountered
		-		(1-2.1') SLAG GRAVEL with some SAND-sized SLAG, loose, light gray and grayish brown, moist, no plasticity, no cohesion	GW	
	66	4.1	B21-033-SB-2.5	(2.1-7.5') Non-native SAND, fine to coarse, with some SLAG and BRICK GRAVEL, medium dense, dark brown and yellow, dry, no plasticity, no cohesion	SW	
		1.4				
		1.6	B21-033-SB-5			
5		8.8				
	100	11.1				
		2.4		(7.5-8') CLAY with GRAVEL, hard, yellowish brown, dry, low plasticity, low cohesion	CL	
End of boring						
10						

Total Borehole Depth: 8' bgs.
 Terminated at 8' bgs due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/16/18
 Weather : Sunny 90s
 Northing (US ft) : 570798.02
 Easting (US ft) : 1460398.85

Boring ID: B21-034-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	No water encountered
1		-		(1-2') SLAG GRAVEL, fine, loose to medium dense, light grayish brown, dry, no plasticity, no cohesion	GP	
2	55	3.3	B21-034-SB-3	(2-4') Non-native SAND, fine to coarse, with some BRICK and fine SLAG GRAVEL, medium dense, brown to dark brown with some yellow, black and gray, dry, no plasticity, no cohesion	SW/GP	
3		1.0	B21-034-SB-4			
4				End of boring		
5						

Total Borehole Depth: 4' bgs.
 Terminated at 4' bgs due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Overcast 80s

Northing (US ft) : 570977.79
 Easting (US ft) : 1460238.37

Boring ID: B21-035-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-035-SB-1	(0-9) SAND with SLAG GRAVEL, fine to medium, dark brown to black to very pale gray, loose to medium dense, moist to wet at 8.5', no plasticity, no cohesion	SW	Wet at 8.5' bgs
		-				
60	1.0	0.9				
		0.1	B21-035-SB-5			
5		-				
		0.2				
70	1.7	1.5				
		0.2		(9-10') GRAVEL with SAND, coarse, wet, dense, very pale gray, no plasticity, no cohesion	GP	
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/19/18
 Weather : Sunny 80s
 Northing (US ft) : 569135.67
 Easting (US ft) : 1460783.28

Boring ID: B21-036-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		-	B21-036-SB-2	(1-4') SAND with GRAVEL, fine to medium, pale brown to black, moist, dense, no plasticity, no cohesion		
40		-			SW	
		1.2				
		0.2	B21-036-SB-5	(4-10') CLAY with SAND and GRAVEL, pale brown to yellowish red, moist to wet at 7.7' bgs, very firm to soft, low plasticity, low cohesion		
5		0.0				
		0.0				
		0.0				
100		0.0				
		0.2				
		0.7				
10				End of boring		

Wet at 7.7' bgs

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 569528.65
 Easting (US ft) : 1460562.32

Boring ID: B21-038-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	0	-		(0-4') CONCRETE		No water encountered
		-	B21-038-SB-4			
5		0.2	B21-038-SB-5	(4-6) Non-native fine GRAVEL with trace coarse GRAVEL, dense, dark brown with trace red and white, very moist, no plasticity, no cohesion	GP	
		0.2				
	100	9.4		(6-18') CLAY, hard to firm then soft from 15-18' bgs, very pale brown with reddish yellow mottling, dry then very moist to wet from 15-18' bgs, low plasticity, low cohesion		
		2.5				
		0.7				
		0.2	B21-038-SB-10			
10		0.0			CL	
	40	0.0				
		0.0				
		0.0				
	100	0.0				
		0.0				
		0.0		(18-20') SILT, soft to firm, brownish gray, moist to dry, low plasticity, low cohesion	ML	
20		0.0				
End of boring						

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/19/18
 Weather : Sunny 80s
 Northing (US ft) : 569240.09
 Easting (US ft) : 1460781.14

Boring ID: B21-039-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
	60	-	B21-039-SB-2	(1-3.2') SAND, medium, with GRAVEL, pale brown to black, moist, no plasticity, no cohesion	SP	
		0.0				
		0.4				
		0.0	B21-039-SB-5	(3.2-11') CLAY with SAND, pale brown to pale gray to yellowish red, moist, very firm, low plasticity, low cohesion		
5		0.0				
		0.0				
	100	0.0			CL	
		0.8				
		0.0				
10		-				
		-		(11-13.5') CLAY with SAND and GRAVEL, pale brown, wet, soft, low plasticity, low cohesion	CL	Wet at 12' bgs
	60	0.1				
		0.0		(13.5-15.5') CLAY with SAND, pale brown to pale gray to yellowish red, moist, very firm, low plasticity, low cohesion	CL	
		0.0				
		-		(15.5-18.5') CLAY with SAND and GRAVEL, pale brown, wet, soft, low plasticity, low cohesion	CL	
15		0.0				
		0.0				
	100	0.0		(18.5-20') CLAY, dark gray, wet, firm, low plasticity, low cohesion	CL	
		0.0				
		0.1				
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 569230.89
 Easting (US ft) : 1460743.24

Boring ID: B21-040-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-3') CONCRETE	NA	No water encountered
100	-					
0	-			(3-10.5') CLAY, soft from 5.5-6.5' bgs then hard, pale brown with reddish yellow mottling, moist from 5.5-6.5' bgs then dry, low plasticity, low cohesion		
5	-					
	0.0		B21-040-SB-6.5		CL	
	0.0					
100	0.0					
	0.8					
	0.0		B21-040-SB-10			
10	-			(10.5-20') CLAY, firm from 10.5-11.5' bgs then soft, light brownish gray, moist then very moist, low plasticity, low cohesion		
	-					
94	0.1					
	0.0					
	0.0					
15	-				CL	
	0.0					
100	0.0					
	0.0					
	0.1					
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 569659.68
 Easting (US ft) : 1460838.14

Boring ID: B21-041-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-2.5') CONCRETE		
1					NA	
2						
3				End of boring		
4						
5						

Total Borehole Depth: 2.5' bgs.
 Terminated due to multiple refusals.



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 569637.11
 Easting (US ft) : 1460841.27

Boring ID: B21-042-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-2.5') CONCRETE	NA	
1						
2				End of boring		
3						
4						
5						

Total Borehole Depth: 2.5' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/20/18
 Weather : Sunny 80s
 Northing (US ft) : 569282.02
 Easting (US ft) : 1460551.03

Boring ID: B21-043-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
90		187.9	B21-043-SB-1.5	(1-20') CLAY with SAND, pale brown to bluish gray to reddish yellow, moist, very firm to soft, low plasticity, low cohesion	CL	No water encountered Thin CLAY lens at 17' bgs
		0.8				
		0.9				
5		3.4	B21-043-SB-5			
		-				
70		0.0				
		0.5				
		4.6				
10		0.2				
		4.1				
		2.9				
100		1.0				
		0.5				
		0.0				
15		1.6				
		10.8				
100		0.0				
		0.0				
		1.8				
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/19/18
 Weather : Sunny
 Northing (US ft) : 569266.54
 Easting (US ft) : 1460553.25

Boring ID: B21-044-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		5.1		(0-1') CONCRETE, loose, gray, dry, no plasticity, no cohesion	NA	No water encountered
	98	0.6	B21-044-SB-2	(1-12.5') CLAY, soft to hard, light brown and dark brown grading to pale brown with reddish yellow mottling, very moist to dry, low plasticity, low cohesion	CL	
		1.4				
		2.4				
		0.0	B21-044-SB-5			
5		1.2		(12.5-20') CLAY, soft, light brownish gray grading to brownish gray with reddish yellow mottling, moist, low plasticity, low cohesion	CL	
	100	3.7				
		1.0				
		2.8				
		1.8				
		25.9				
10		14.5		End of boring		
	100	20.8				
		1.0				
		0.0				
		0.0				
		0.0				
		0.0				
15		0.0				
	100	0.0				
		0.0				
		0.0				
		0.0				
20		0.0				

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 568696.83
 Easting (US ft) : 1460882.32

Boring ID: B21-045-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1.5') CONCRETE	NA	No water encountered
46	3.0			(1.5-8) Non-native SAND, fine to medium, with SLAG GRAVEL, fine to coarse, medium dense to dense, brown with some gray and trace yellow, moist from 2.7-3' then dry, no plasticity, no cohesion	SW/GW	
	100.9	B21-045-SB-3.5				
	11.1	B21-045-SB-4.5				
5	-				GW	
70	6.4					
	80.7			(8-10') SLAG GRAVEL, fine to coarse, medium dense to dense, reddish yellow, then dark brown from 9-10', wet, no plasticity, no cohesion		
	22.2					
	106.7					
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated at 10' due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 80s
 Northing (US ft) : 568678.96
 Easting (US ft) : 1460877.53

Boring ID: B21-046-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	Wet at 6' bgs
		-	B21-046-SB-2	(1-4') SAND with SLAG GRAVEL, medium to fine, dark brown to pale yellow to black, loose, dry, no plasticity, no cohesion	SW	
	60	0.1				
		0.1				
		0.0		(4-5) BRICK	NA	
5		4.9	B21-046-SB-6	(5-7) SAND with SLAG GRAVEL, medium to fine, dark brown to pale yellow to black, loose, dry, no plasticity, no cohesion	SW	
	100	14.7				
		7.0		(7-8) WOOD		
End of boring						
10						

Total Borehole Depth: 8' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/23/18
 Weather : Cloudy 80s

Northing (US ft) : 569960.77
 Easting (US ft) : 1460560.40

Boring ID: B21-047-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE		
		-	B21-047-SB-2	(1-10') Fill GRAVEL with SAND, SILT, and BRICK GRAVEL, medium dense, brown with gray, dry to wet at 8.7' bgs, no plasticity, no cohesion	GW-GM	Wet at 8.7' bgs
60	0.4					
	22.5	B21-047-SB-4				
	1.4					
5	-					
		-				
48	3.3					
	1.6					
	0.1					
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/23/18
 Weather : Cloudy 80s
 Northing (US ft) : 569987.16
 Easting (US ft) : 1460550.94

Boring ID: B21-048-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') SAND, fine to coarse, with fine GRAVEL, loose, brown, moist to dry, no plasticity, no cohesion	SW	Wet at 7.3' bgs
		0.0	B21-048-SB-1	(1-6') CONCRETE fill, SAND and GRAVEL, medium dense, very light gray, dry, no plasticity, no cohesion		
	80	4.9			NA	
		1.0				
		2.2				
5		-		(6-7') SAND with COBBLES, loose, gray and very dark brown, moist, no plasticity, no cohesion	SW/GP	
	85	3.6	B21-048-SB-7	(7-8.5') BRICK GRAVEL with SAND, medium dense, yellow and very dark brown, moist to wet at 7.3' bgs, no plasticity, no cohesion	GW	
		0.1		(8.5-10') Non-native SAND, with fine GRAVEL, medium dense, black with yellow, wet, no plasticity, no cohesion	SW/GP	
		0.0				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/24/18
 Weather : Overcast 80s
 Northing (US ft) : 570485.34
 Easting (US ft) : 1460277.83

Boring ID: B21-049-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-049-SB-1	(0-3.5') GRAVEL with SAND, medium to coarse, dark brown to black, loose, slightly moist, no plasticity, no cohesion	GW	Thin GRAVEL lenses at 6.5', 7', and 9.5' bgs Wet at 12.5' bgs
	80	1.4				
		32.6				
		16.4		(3.5-4.5') CLAY with SAND and GRAVEL, yellowish red, slightly moist, very firm, low plasticity, low cohesion	CL	
		350.7	B21-049-SB-5	(4.5-6.2') GRAVEL with SAND, medium to coarse, dark brown to black, loose, slightly moist, no plasticity, no cohesion	GW	
5		5.2				
		1.2		(6.2-7.5') CLAY with SAND and GRAVEL, yellowish red, slightly moist, very firm, low plasticity, low cohesion	CL	
	85	0.9		(7.5-11.5') CLAY with SAND, pale brown to bluish gray, moist, soft to firm, low plasticity, low cohesion		
		1.5				
		0.8	B21-049-SB-10		CL	
10		-				
		-		(11.5-13') SAND with CLAY, medium, pale brown to black, wet, dense, no plasticity, no cohesion	SP	
	50	0.2				
		0.0		(13-15') CLAY with SAND, pale brown to bluish gray, moist, soft to firm, low plasticity, low cohesion	CL	
		1.5				
15				End of boring		

Total Borehole Depth: 15' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/24/18
 Weather : Overcast 80s
 Northing (US ft) : 570462.54
 Easting (US ft) : 1460280.19

Boring ID: B21-050-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	Wet at 8' bgs
		16.8	B21-050-SB-2	(1-6.5') SAND with GRAVEL, medium to fine, loose, dark brown to black, moist, no plasticity, no cohesion		
50		-			SW	
		17.5				
		8.2				
5		-				
		7.4		(6.5-8') CLAY with SAND, very firm, pale brown to reddish yellow, moist, low plasticity, cohesive	CL	
		18.2	B21-050-SB-8			
		14.6		(8-8.5') SAND with GRAVEL, medium to fine, loose, dark brown to black, moist, no plasticity, no cohesion	SW	
		0.0		(8.5-10') CLAY with SAND, very firm, pale brown to reddish yellow, moist, low plasticity, cohesive	CL	
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 569794.04
 Easting (US ft) : 1460697.01

Boring ID: B21-051-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	
1	80	0.0		(1-2.5') SLAG GRAVEL, fine to coarse, and SLAG SAND, fine to very coarse, loose to medium dense, grayish brown with trace pale brown, dry, no plasticity, no cohesion		
2			B21-051-SB-2.5		GW/SW	No water encountered
End of boring						
3						
4						
5						

Total Borehole Depth: 2.5' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/20/18
 Weather : Cloudy 80s

Northing (US ft) : 569780.72
 Easting (US ft) : 1460652.89

Boring ID: B21-052-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
		-	B21-052-SB-2	(1-10') GRAVEL with SAND, medium, dry to wet at 8' bgs, loose, pale gray, no plasticity, no cohesion		WOOD at 1.75' bgs
50		-				
		21.6				
		19.4	B21-052-SB-5			
5		-			GW	Wet at 8' bgs
		18.2				
80		114.9				
		265.3				
		60.4				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/6/18
 Weather : Sunny 90s
 Northing (US ft) : 571187.19
 Easting (US ft) : 1460635.98

Boring ID: B21-053-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE		
1	60	1.0	B21-053-SB-2	(1-2.5') Non-native SAND, very fine to coarse, with some SLAG and BRICK GRAVEL and trace SLAG COBBLES at 1' bgs, medium dense to loose, dry, no plasticity, no cohesion	SW/GW	
2		4.3				
End of boring						
3						
4						
5						

Total Borehole Depth: 2.5' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/24/18
 Weather : Rainy 70s
 Northing (US ft) : 571158.69
 Easting (US ft) : 1460638.92

Boring ID: B21-054-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-3.5') SAND with SLAG GRAVEL, medium to fine, black to dark brown, moist, loose, no plasticity, no cohesion		
1			B21-054-SB-1			
2		141.2			SW	
3	65	84.5				No water encountered
4		77.8		(3.5-4.7') GRAVEL with CLAY and SAND, coarse, pale brown to black, moist, dense, no plasticity, no cohesion	GW	
5		4.2	B21-054-SB-5	(4.7-5') SAND with SLAG GRAVEL, medium to fine, black to dark brown, moist, dense, no plasticity, no cohesion	SW	
End of boring						

Total Borehole Depth: 5' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Ali Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 80s
 Northing (US ft) : 568854.41
 Easting (US ft) : 1460807.69

Boring ID: B21-055-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	
				(1-2') SLAG GRAVEL, fine, with SAND, medium dense, black and yellowish red, dry, no plasticity, no cohesion	GP/SW	
	74		B21-055-SB-2.5	(2-3.9') CLAY, firm, yellowish brown, slightly moist, low plasticity, low cohesion	CL	
				(3.9-7.5) SAND, fine to coarse, with SLAG GRAVEL, medium dense, gray and brown, dry, no plasticity, no cohesion		
5				(7.5-8.3') BRICK GRAVEL, loose, red, dry, no plasticity, no cohesion	SW/GW	
	50			(8.3-10') SILT, medium dense, brown with trace red, wet, no plasticity, no cohesion	NA	Wet at 8.3' bgs
					ML	
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s

Northing (US ft) : 568861.69
 Easting (US ft) : 1460864.09

Boring ID: B21-056-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	
1				(1-3') No recovery		
2						
3				End of boring		
4						
5						

Total Borehole Depth: 3' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : A. Berenbrok-Niblett
 Drilling Equipment : Geoprobe 7822DT

Date : 7/18/18
 Weather : Sunny 80s
 Northing (US ft) : 568732.24
 Easting (US ft) : 1460939.99

Boring ID: B21-057-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	Wet at 6' bgs
		-	B21-057-SB-2	(1-2.5') SAND with GRAVEL, fine to medium, loose, black, dry, no plasticity, no cohesion	SW	
60	0.4			(2.5-7.5') SAND with GRAVEL, medium, dense, dry to wet at 6' bgs, black to dark brown, no plasticity, no cohesion	SP	
	0.3					
5	0.7					
	0.7		B21-057-SB-6			
100	0.1					
End of boring						
10						

Total Borehole Depth: 7.5' bgs.
 Terminated due to multiple refusals.



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/4/18
 Weather : Sunny 90s
 Northing (US ft) : 568718.17
 Easting (US ft) : 1460904.61

Boring ID: B21-058-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-1') CONCRETE	NA	
1				(1-3') SLAG GRAVEL with SAND and some SILT grading to BRICK, SAND and GRAVEL, medium dense to dense, brown and gray grading to red, very dark brown and yellow, moist to dry, no plasticity, no cohesion	GW/GM	
		11.2				
2		3.5	B21-058-SB-2.5			
3				End of boring		
4						
5						

Total Borehole Depth: 3' bgs.
 Terminated due to multiple refusals.



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/6/18
 Weather : Sunny 90s

Northing (US ft) : 571175.16
 Easting (US ft) : 1460201.46

Boring ID: B21-059-SB

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-0.5') CONCRETE	NA	No water encountered
	50	0.5	B21-059-SB-1	(0.5-1') Non-native SAND, fine to coarse, with SLAG GRAVEL, fine, loose to medium dense, brown to light brown with some gray, dry with trace moisture, no plasticity, no cohesion	SW/GP	
1				End of boring		
2						
3						
4						
5						

Total Borehole Depth: 1' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Cloudy 80s

Northing (US ft) : 571173.37
 Easting (US ft) : 1460169.80

Boring ID: B21-060-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-060-SB-1	(0-4') SAND with GRAVEL, fine to medium, dense, slightly moist, dark brown to black, no plasticity, no cohesion	SW	
		6.2				
80		12.2				
		13.5	B21-060-SB-4			
5		0.4		(4-10') SLAG GRAVEL, coarse, pale gray, loose, moist to wet at 7' bgs, no plasticity, no cohesion	GP	Wet at 7' bgs
		-				
		-				
60		0.2				
		0.2				
		0.5				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 569735.46
 Easting (US ft) : 1460674.79

Boring ID: B21-061-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE	NA	
1		-		(1-1.5') No recovery		
End of Boring						
2						
3						
4						
5						

Total Borehole Depth: 1.5' bgs.
 Terminated due to multiple refusals.



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny 90s
 Northing (US ft) : 569710.35
 Easting (US ft) : 1460690.97

Boring ID: B21-062-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-2') CONCRETE		
1		-			NA	No water encountered
2		-		End of Boring		
3						
4						
5						

Total Borehole Depth: 2' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/7/18
 Weather : Sunny 90s
 Northing (US ft) : 570658.17
 Easting (US ft) : 1459989.29

Boring ID: B21-063-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-063-SB-1	(0-4') Non-native SAND, fine to coarse, with some fine SLAG GRAVEL, loose to medium dense, dry, no plasticity, no cohesion	SW	
		0.2				
		0.2				
		1.3				
		0.0	B21-063-SB-5	(4-7') SAND, fine to coarse, medium dense, yellow, dry to moist, no plasticity, no cohesion	SW	No water encountered
5		0.8				
		0.0				
End of boring						
10						

Total Borehole Depth: 7' bgs,
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L .Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/7/18
 Weather : Sunny 90s
 Northing (US ft) : 570206.01
 Easting (US ft) : 1460129.11

Boring ID: B21-064-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE		
		-	B21-064-SB-2.5	(1-5') Non-native SAND, fine to coarse with fine GRAVEL and trace coarse GRAVEL, medium dense, brown and light brown then brown and yellow from 4-5' bgs, no plasticity, no cohesion	SW/GP	Trace black vitreous GRAVEL at 2' bgs Trace BRICK from 4-5' bgs No water encountered
	0.9					
	0.4					
	0.4		B21-064-SB-5			
5				End of boring		
10						

Total Borehole Depth: 5' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/5/18
 Weather : Sunny, 80s
 Northing (US ft) : 569375.36
 Easting (US ft) : 1460221.29

Boring ID: B21-065-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1') CONCRETE		
60	0.2		B21-065-SB-3	(1-11.5') Non-native SAND, medium to very coarse, and fine SLAG GRAVEL with trace coarse SLAG GRAVEL and trace SILT, medium dense to dense, very dark brown, moist from 2-2.5' bgs, dry 2.5-5' bgs, then moist from 7.5-10' bgs, very moist 11-11.5' bgs, no plasticity, no cohesion	SW/GP	Some pearly luster
	0.4					
	0.3		B21-065-SB-5			
50	0.0					
10	0.1		B21-065-SB-10			
84	0.5			(11.5-13') SLAG GRAVEL, fine to coarse, with some sand-sized SLAG, dense, dark grayish blue, trace moisture, no plasticity, no cohesion	GP/SW	Sewage-like odor
15	0.0			(13-20') CLAY, very firm to soft, pale brown with some reddish yellow mottling, dry then very moist at 17' bgs, medium plasticity, medium cohesion	CL	No water encountered
100	0.0					
	0.0					
	0.0					
20				End of boring		

Total Borehole Depth: 20' bgs.
 Terminated at 20' due to maximum allowable depth.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/16/18
 Weather : Sunny 80s
 Northing (US ft) : 568395.85
 Easting (US ft) : 1460324.07

Boring ID: B21-066-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-066-SB-1	(0-1.5') SAND with SILT and GRAVEL, fine to medium, loose, dry, pale brown, no plasticity, no cohesion	SW	BRICK at 3.5' bgs
	80	0.3		(1.5-7') GRAVEL with SAND, medium to coarse, dense, dry to slightly moist, pale to dark brown, no plasticity, no cohesion	GW	
		2.6				
		5.8				
5		-				
		-				
	60	23.8	B21-066-SB-7.5	(7-10') SLAG GRAVEL, medium to coarse, black to medium brown, dense, moist to wet at 7.5', no plasticity, no cohesion	GW	Wet at 7.5' bgs
		0.4				
		0.1				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/16/18
 Weather : Sunny 90s
 Northing (US ft) : 568317.18
 Easting (US ft) : 1460663.98

Boring ID: B21-067-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-067-SB-1	(0-1.5') SAND with GRAVEL and SILT, fine to medium, pale brown, dry, loose, no plasticity, no cohesion	SW	
		0.6		(1.5-4') SAND with GRAVEL, fine to medium, black, moist, dense, no plasticity, no cohesion		
	80	1.2			SW	
		3.7				
		0.7	B21-067-SB-5	(4-4.7') CLAY with SAND, pale brown to reddish yellow, very firm, moist, low plasticity, low cohesion	CL	
				(4.7-5') BRICK	NA	
5		-		(5-9') GRAVEL with SAND, medium to coarse, pale gray to bluish gray, wet, dense, no plasticity, no cohesion		
	80	0.7			GW	
		1.8				
		0.4				
		0.3		(9-10') CLAY, soft, dark gray, wet, low plasticity, low cohesion	CL	
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/16/18
 Weather : Sunny 90s
 Northing (US ft) : 568241.66
 Easting (US ft) : 1460299.40

Boring ID: B21-068-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-068-SB-1	(0-2') SAND with SILT and GRAVEL, medium to fine, loose, brown, dry, low plasticity, low cohesion	SW	
		0.2				
	80	0.8		(2-7') SAND with GRAVEL, medium to fine, dense, black to brownish red, moist, no plasticity, no cohesion	SW	
		0.6				
		0.1	B21-068-SB-5		SW	
5		-				
		0.2				
	80	0.4		(7-10') SAND with CLAY and GRAVEL, medium, dense, pale brown, wet, no plasticity, no cohesion	SW	Wet at 7' bgs
		0.3				
		0.5				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Cloudy 80s

Northing (US ft) : 569097.13
 Easting (US ft) : 1460100.18

Boring ID: B21-069-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-069-SB-1	(0-10') SAND with SLAG GRAVEL, fine to medium, dense, dark brown, moist to wet at 9.5' bgs, no plasticity, no cohesion		
		0.2				
	65	1.3				
		4.1				
		6.3	B21-069-SB-5			
5		-			SW	BRICK at 4.5', 7.5', and 9' bgs
		-				
	40	-				
		2.4				
		1.3				
10				End of boring		Wet at 9.5' bgs

Total Borehole Depth: 10' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 9/7/18
 Weather : Sunny 90s
 Northing (US ft) : 570387.35
 Easting (US ft) : 1459945.64

Boring ID: B21-070-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-070-SB-1	(0-5') Non-native SAND, very fine to medium, with SLAG GRAVEL and trace SILT, and with trace small CLAY lenses at depth, loose to medium dense, brown with light gray, dry, no plasticity, no cohesion	SW	No water encountered
		0.0				
	70	1.4				
		1.1				
		1.2	B21-070-SB-5			
5	100	0.1		(5-5.5') SLAG GRAVEL, coarse with some SAND-sized, loose, light gray, dry, low plasticity, low cohesion	GP	
				End of boring		
10						

Total Borehole Depth: 5.5' bgs.
 Terminated due to multiple refusals.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Sunny 90s
 Northing (US ft) : 571171.35
 Easting (US ft) : 1460055.91

Boring ID: B21-071-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-071-SB-1	(0-7.5') SAND with GRAVEL, fine to medium, dense, dark brown, moist, no plasticity, no cohesion	SW	Brick at 5' bgs and 6.5' bgs
	65	4.1				
		32.1				
		5.7				
		0.2	B21-071-SB-5			
5		-		(7.5-8.5') SAND, coarse, dense, pale gray, moist, no plasticity, no cohesion	SP	Wet at 9' bgs
	60	2.5				
		1.7		(8.5-10') SLAG GRAVEL, coarse, loose, pale gray, moist to wet at 9' bgs, no plasticity, no cohesion	GP	
		0.3				
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water.



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Rainy 80s
 Northing (US ft) : 571421.35
 Easting (US ft) : 1460499.92

Boring ID: B21-072-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-072-SB-1	(0-7.5') SLAG GRAVEL, coarse, loose, pale gray to bluish gray, moist to wet at 7' bgs, no plasticity, no cohesion	GP	
		-				
60	0.1					
	0.2					
		0.1	B21-072-SB-5			
5		-				
		1.3				
80	2.1			(7.5-9.5') SAND with GRAVEL, medium, dense, pale brown to pale gray, wet, no plasticity, no cohesion	SW	
	0.2					
	1.1			(9.5-10') GRAVEL with SAND, medium to coarse, dense, medium to coarse, wet, no plasticity, no cohesion	GW	
10				End of boring		

Wet at 7' bgs

Total Borehole Depth: 10' bgs.
 Terminated due to water



ARM Group LLC
Engineers and Scientists

Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Cloudy 80s

Northing (US ft) : 570810.99
 Easting (US ft) : 1460255.91

Boring ID: B21-073-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-073-SB-1	(0-15') SAND with SLAG GRAVEL, loose, dark brown to black, moist to wet at 13' bgs, no plasticity, no cohesion	SW	BRICK at 4.5' bgs
	80	3.1				
		12.3				
		2.4				
5		0.1	B21-073-SB-5			
		-				
	60	1.9				
		1.4				
10		0.4	B21-073-SB-10			
	40	-				
		0.2				
		1.2				
15				End of boring		Wet at 13' bgs

Total Borehole Depth: 15' bgs.
 Terminated due to water



Client : EnviroAnalytics Group
 ARM Project No. : 150300M-19-3
 Project Description : Sparrows Point - Parcel B21
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Green Services, Inc.
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 7/25/18
 Weather : Overcast 80s
 Northing (US ft) : 570658.21
 Easting (US ft) : 1460268.07

Boring ID: B21-074-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B21-074-SB-1	(0-10') SLAG GRAVEL with SAND, medium to coarse, loose, dark brown to black, dry to moist to wet at 9' bgs, no plasticity, no cohesion	GW	
		4.3				
	80	11.7				
		3.5				
		0.1				
5		-				
		-				
	60	6.9				
		64.6	B21-074-SB-9			
		2.6				Wet at 9' bgs
10				End of boring		

Total Borehole Depth: 10' bgs.
 Terminated due to water

APPENDIX C

PID CALIBRATION LOG

PROJECT NAME: Area B, Parcel B21 Phase II	SAMPLER NAME: L. Perrin, M. Kedenburg	
PROJECT NUMBER: 150300M-19	DATE: 7/16/2018	PAGE <u>1</u> of <u>1</u>

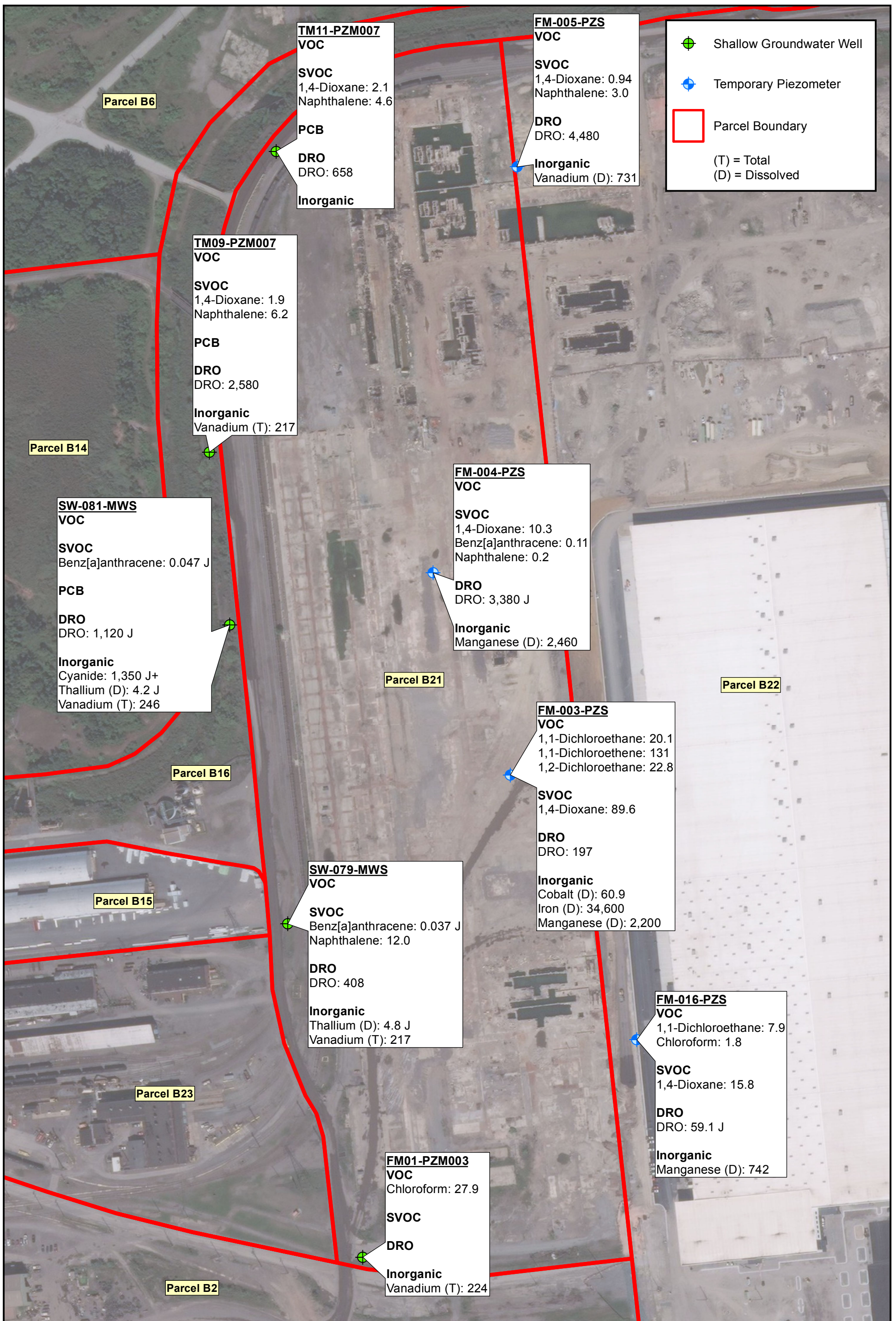
DATE/TIME	SAMPLER INITIALS	PID SERIAL #	FRESH AIR CAL	STANDARD	STANDARD CONCENTRATION	METER READING	COMMENTS
7/16/2018 8:15	MK	592-913262	0.0	Isobutylene	100 ppm	100.0	-
7/17/2018 8:15	MK	592-913262	0.0	Isobutylene	100 ppm	100.1	-
7/18/2018 8:25	MK	592-913262	0.0	Isobutylene	100 ppm	100.0	-
7/19/2018 8:50	MK	592-913262	0.0	Isobutylene	100 ppm	100.0	-
7/20/2018 8:00	MK	592-913262	0.0	Isobutylene	100 ppm	100.0	-
7/23/2018 8:20	LP	592-913262	0.0	Isobutylene	100 ppm	99.7	-
7/24/2018 8:30	MK	592-913262	0.1	Isobutylene	100 ppm	100.0	-
7/25/2018 8:15	MK	592-913262	0.0	Isobutylene	100 ppm	100.0	-
9/4/2018 9:30	LP	592-913262	0.0	Isobutylene	100 ppm	99.8	-
9/5/2018 8:20	MK	592-913262	0.1	Isobutylene	100 ppm	99.7	-
9/6/2018 8:20	LP	592-913262	0.0	Isobutylene	100 ppm	100.1	-
9/7/2018 9:00	LP	592-913262	0.1	Isobutylene	100 ppm	100.1	-

APPENDIX D

Parcel B21 - IDW Drum Log

Drum Identification Number	Designation	Activity/Phase	Contents	Open Date
1038-PPE-7/16/18-B21	Non-Haz	B21	PPE	7/16/2018
1039-Soil-7/16/18-B21	Non-Haz	B21	Soil	7/16/2018
1040-Liners-7/16/18-B21	Non-Haz	B21	Liners	7/16/2018
1041-Decon Water-7/16/18-B21	Non-Haz	B21	Water	7/16/2018
1042-Soil-7/19/18-B21	Non-Haz	B21	Soil	7/19/2018
1043-PPE-7/20/18-B21	Non-Haz	B21	PPE	7/20/2018
1045-Soil-7/24/18-B21	Non-Haz	B21	Soil	7/24/2018
1064-Liners-9/6/18-B21	Non-Haz	B21	Liners	9/6/2018

APPENDIX E



APPENDIX F

QA/QC Tracking Log

Trip Blank:	Date:	Sample IDs:	
	7/16/2018	1) B21-066-SB-1	
TB1		2) B21-066-SB-7.5	
		3) B21-068-SB-1	
		4) B21-068-SB-5	
		5) B21-067-SB-1	
		6) B21-067-SB-5	
	7/17/2018	7) B21-012-SB-1	Duplicate: B21-067-SB-1
		8) B21-012-SB-5	Date: 7/16/2018
		9) B21-011-SB-1	MS/MSD: B21-004-SB-5
		10) B21-011-SB-5	Date: 7/17/2018
		11) B21-003-SB-1	Field Blank:
		12) B21-003-SB-5	Date: 7/16/2018
		13) B21-003-SB-10	Eq. Blank:
	7/18/2018	14) B21-004-SB-2.5	Date: 7/16/2018
		15) B21-004-SB-5	
		16) B21-009-SB-2	
		17) B21-009-SB-5	
		18) B21-010-SB-2	
		19) B21-010-SB-5	
		20)	

Trip Blank:	Date:	Sample IDs:	
	7/19/2018	1) B21-039-SB-10	
		2) B21-044-SB-2	
		3) B21-044-SB-5	
		4) B21-044-SB-10	
TB1	7/20/2018	5) B21-043-SB-1.5	
		6) B21-043-SB-5	
		7) B21-043-SB-10	Duplicate: B21-044-SB-2
TB1		8) B21-006-SB-2	Date: 7/19/2018
TB1		9) B21-006-SB-5	MS/MSD: B21-044-SB-5
		10) B21-006-SB-10	Date: 7/19/2018
		11) B21-005-SB-2	Field Blank:
		12) B21-005-SB-7	Date: 7/19/2018
TB1		13) B21-005-SB-10	Eq. Blank:
		14) B21-018-SB-2	Date: 7/19/2018
TB1	7/21/2018	15) B21-018-SB-8	
		16) B21-018-SB-10	
		17) B21-017-SB-2	
TB1		18) B21-017-SB-5	
		19) B21-017-SB-10	
TB2		20) B21-052-SB-2	

	7/18/2018	1) B21-029-SB-1	
		2) B21-029-SB-5	
		3) B21-026-SB-2	
		4) B21-026-SB-5	
		5) B21-027-SB-1	
		6) B21-027-SB-5	
TB1	7/19/2018	7) B21-025-SB-2	Duplicate: B21-057-SB-2
		8) B21-025-SB-7.5	Date: 7/18/2018
		9) B21-046-SB-2	MS/MSD: B21-028-SB-2
TB1		10) B21-046-SB-6	Date: 7/19/2018
		11) B21-057-SB-2	Field Blank:
	7/19/2018	12) B21-057-SB-6	Date: 7/19/2018
		13) B21-028-SB-1	Eq. Blank:
		14) B21-028-SB-5	Date: 7/19/2018
		15) B21-031-SB-1	
		16) B21-031-SB-5	
		17) B21-036-SB-2	
		18) B21-036-SB-5	
		19) B21-039-SB-2	
		20) B21-039-SB-5	

TB2	7/20/2018	1) B21-052-SB-5	
TB1	7/23/2018	2) B21-047-SB-2	
		3) B21-047-SB-5	
		4) B21-048-SB-1	
TB1		5) B21-048-SB-7	
		6) B21-007-SB-1	
		7) B21-007-SB-5	Duplicate: B21-022-SB-9
		8) B21-014-SB-2	Date: 7/23/2018
TB1		9) B21-014-SB-8	MS/MSD: B21-023-SB-5
		10) B21-023-SB-2	Date: 7/23/2018
		11) B21-023-SB-5	Field Blank:
	7/24/2018	12) B21-022-SB-1.5	Date: 7/23/2018
		13) B21-022-SB-9	Eq. Blank:
		14) B21-024-SB-2	Date: 7/23/2018
		15) B21-024-SB-5	
TB1		16) B21-019-SB-2	
		17) B21-019-SB-7	
		18) B21-021-SB-1	
		19) B21-021-SB-5	
TB1		20) B21-054-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

Trip	Date:	Sample IDs:	
TB1	7/24/2018	1) B21-054-SB-5	
TB1		2) B21-050-SB-2	
TB1		3) B21-050-SB-8	
		4) B21-049-SB-1	
TB1		5) B21-049-SB-5	
		6) B21-049-SB-10	
	7/25/2018	7) B21-032-SB-1	Duplicate: B21-050-SB-8
		8) B21-032-SB-5	Date: 7/24/2018
		9) B21-074-SB-1	MS/MSD: B21-060-SB-4
TB1		10) B21-074-SB-9	Date: 7/25/2018
		11) B21-073-SB-1	Field Blank:
		12) B21-073-SB-5	Date: 7/24/2018
		13) B21-073-SB-10	Eq. Blank:
		14) B21-035-SB-1	Date: 7/24/2018
		15) B21-035-SB-5	
		16) B21-060-SB-1	
TB1		17) B21-060-SB-4	
		18) B21-072-SB-1	
		19) B21-072-SB-5	
		20) B21-069-SB-1	

Trip	Date:	Sample IDs:	
	9/5/2018	1) B21-051-SB-2.5	
		2) B21-038-SB-4	
		3) B21-038-SB-5	
		4) B21-038-SB-10	
		5) B21-065-SB-5	
		6) B21-065-SB-3	
	9/5/2018	7) B21-065-SB-10	Duplicate: B21-065-SB-5
		8) B21-064-SB-2.5	Date: 9/5/2018
		9) B21-064-SB-5	MS/MSD: B21-033-SB-5
		10) B21-013-SB-5	Date: 9/6/2018
		11) B21-013-SB-3.5	Field Blank:
	9/6/2018	12) B21-033-SB-2.5	Date: 9/5/2018
		13) B21-033-SB-5	Eq. Blank:
		14) B21-034-SB-3	Date: 9/5/2018
		15) B21-034-SB-4	
		16) B21-033-SB-3	
		17) B21-033-SB-4	
		18) B21-020-SB-5	
		19) B21-020-SB-4	
		20) B21-020-SB-10	

	7/25/2018	1) B21-069-SB-5	
		2) B21-071-SB-1	
		3) B21-071-SB-5	
	9/4/2018	4) B21-016-SB-4	
		5) B21-016-SB-5	
		6) B21-015-SB-3	
TB1		7) B21-015-SB-5	Duplicate: B21-069-SB-5
		8) B21-045-SB-3.5	Date: 7/25/2018
TB1		9) B21-045-SB-4.5	MS/MSD: B21-071-SB-5
TB1		10) B21-058-SB-2.5	Date: 7/25/2018
		11) B21-055-SB-2.5	Field Blank:
		12) B21-030-SB-2.5	Date: 7/25/2018
		13) B21-030-SB-5	Eq. Blank:
		14) B21-030-SB-10	Date: 7/25/2018
		15) B21-040-SB-6.5	
		16) B21-040-SB-10	
		17) B21-001-SB-3	
TB1	18) B21-001-SB-5		
	9/5/2018	19) B21-002-SB-5	
		20) B21-002-SB-3.5	

	9/6/2018	1) B21-053-SB-2	
		2) B21-059-SB-1	
TB1		3) B21-008-SB-3	
		4) B21-008-SB-5	
	9/7/2018	5) B21-063-SB-1	
		6) B21-063-SB-5	
		7) B21-070-SB-1	Duplicate: B21-008-SB-3
		8) B21-070-SB-5	Date: 9/6/2018
		9)	MS/MSD: B21-008-SB-5
		10)	Date: 9/6/2018
	9/6/2018	11)	Field Blank:
		12)	Date: 9/6/2018
		13)	Eq. Blank:
		14)	Date: 9/6/2018
		15)	
		16)	
		17)	
		18)	
		19)	
		20)	

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.

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EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

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	57	45	0	57	100.00%
Aluminum	Metal	Soil	mg/kg	57	57	0	57	100.00%
Antimony	Metal	Soil	mg/kg	57	0	0	57	100.00%
Arsenic	Metal	Soil	mg/kg	58	50	0	58	100.00%
Barium	Metal	Soil	mg/kg	57	57	0	57	100.00%
Beryllium	Metal	Soil	mg/kg	57	52	0	57	100.00%
Cadmium	Metal	Soil	mg/kg	57	27	0	57	100.00%
Chromium	Metal	Soil	mg/kg	57	57	0	57	100.00%
Chromium VI	Metal	Soil	mg/kg	57	5	37	20	35.09%
Cobalt	Metal	Soil	mg/kg	57	52	0	57	100.00%
Copper	Metal	Soil	mg/kg	57	56	0	57	100.00%
Iron	Metal	Soil	mg/kg	57	57	0	57	100.00%
Lead	Metal	Soil	mg/kg	57	56	0	57	100.00%
Manganese	Metal	Soil	mg/kg	57	57	0	57	100.00%
Mercury	Metal	Soil	mg/kg	57	50	0	57	100.00%
Nickel	Metal	Soil	mg/kg	57	55	0	57	100.00%
Selenium	Metal	Soil	mg/kg	57	9	0	57	100.00%
Silver	Metal	Soil	mg/kg	57	29	0	57	100.00%
Thallium	Metal	Soil	mg/kg	58	17	0	58	100.00%
Vanadium	Metal	Soil	mg/kg	57	57	0	57	100.00%
Zinc	Metal	Soil	mg/kg	57	57	0	57	100.00%
Aroclor 1016	PCB	Soil	mg/kg	31	0	0	31	100.00%
Aroclor 1221	PCB	Soil	mg/kg	31	0	0	31	100.00%
Aroclor 1232	PCB	Soil	mg/kg	31	0	0	31	100.00%
Aroclor 1242	PCB	Soil	mg/kg	31	2	0	31	100.00%
Aroclor 1248	PCB	Soil	mg/kg	31	1	0	31	100.00%
Aroclor 1254	PCB	Soil	mg/kg	31	2	0	31	100.00%
Aroclor 1260	PCB	Soil	mg/kg	31	14	0	31	100.00%
Aroclor 1262	PCB	Soil	mg/kg	31	2	0	31	100.00%
Aroclor 1268	PCB	Soil	mg/kg	31	5	0	31	100.00%
PCBs (total)	PCB	Soil	mg/kg	31	18	0	31	100.00%
1,1-Biphenyl	SVOC	Soil	mg/kg	57	5	0	57	100.00%
1,2,4,5-Tetrachlorobenzene	SVOC	Soil	mg/kg	57	1	0	57	100.00%
2,3,4,6-Tetrachlorophenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
2,4,5-Trichlorophenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
2,4,6-Trichlorophenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
2,4-Dichlorophenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
2,4-Dimethylphenol	SVOC	Soil	mg/kg	57	1	2	55	96.49%
2,4-Dinitrophenol	SVOC	Soil	mg/kg	57	0	3	54	94.74%
2,4-Dinitrotoluene	SVOC	Soil	mg/kg	57	1	0	57	100.00%
2,6-Dinitrotoluene	SVOC	Soil	mg/kg	57	0	0	57	100.00%
2-Chloronaphthalene	SVOC	Soil	mg/kg	57	2	0	57	100.00%
2-Chlorophenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
2-Methylnaphthalene	SVOC	Soil	mg/kg	57	48	0	57	100.00%
2-Methylphenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
2-Nitroaniline	SVOC	Soil	mg/kg	57	0	0	57	100.00%
3&4-Methylphenol(m&p Cresol)	SVOC	Soil	mg/kg	57	1	2	55	96.49%
3,3'-Dichlorobenzidine	SVOC	Soil	mg/kg	57	1	1	56	98.25%
4-Chloroaniline	SVOC	Soil	mg/kg	57	0	1	56	98.25%
4-Nitroaniline	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Acenaphthene	SVOC	Soil	mg/kg	57	43	0	57	100.00%
Acenaphthylene	SVOC	Soil	mg/kg	57	45	0	57	100.00%
Acetophenone	SVOC	Soil	mg/kg	57	3	0	57	100.00%
Anthracene	SVOC	Soil	mg/kg	57	50	0	57	100.00%
Benz[a]anthracene	SVOC	Soil	mg/kg	57	50	0	57	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
Benzaldehyde	SVOC	Soil	mg/kg	57	3	31	26	45.61%
Benzo[a]pyrene	SVOC	Soil	mg/kg	57	51	0	57	100.00%
Benzo[b]fluoranthene	SVOC	Soil	mg/kg	57	50	0	57	100.00%
Benzo[g,h,i]perylene	SVOC	Soil	mg/kg	57	48	0	57	100.00%
Benzo[k]fluoranthene	SVOC	Soil	mg/kg	57	49	0	57	100.00%
bis(2-chloroethoxy)methane	SVOC	Soil	mg/kg	57	0	0	57	100.00%
bis(2-Chloroethyl)ether	SVOC	Soil	mg/kg	57	0	0	57	100.00%
bis(2-Chloroisopropyl)ether	SVOC	Soil	mg/kg	57	0	0	57	100.00%
bis(2-Ethylhexyl)phthalate	SVOC	Soil	mg/kg	57	3	0	57	100.00%
Caprolactam	SVOC	Soil	mg/kg	57	3	0	57	100.00%
Carbazole	SVOC	Soil	mg/kg	57	12	0	57	100.00%
Chrysene	SVOC	Soil	mg/kg	57	52	0	57	100.00%
Dibenz[a,h]anthracene	SVOC	Soil	mg/kg	57	45	0	57	100.00%
Diethylphthalate	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Di-n-butylphthalate	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Di-n-octylphthalate	SVOC	Soil	mg/kg	57	1	0	57	100.00%
Fluoranthene	SVOC	Soil	mg/kg	57	54	0	57	100.00%
Fluorene	SVOC	Soil	mg/kg	57	44	0	57	100.00%
Hexachlorobenzene	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Hexachlorobutadiene	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Hexachlorocyclopentadiene	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Hexachloroethane	SVOC	Soil	mg/kg	57	2	0	57	100.00%
Indeno[1,2,3-c,d]pyrene	SVOC	Soil	mg/kg	57	47	0	57	100.00%
Isophorone	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Naphthalene	SVOC	Soil	mg/kg	57	46	0	57	100.00%
Nitrobenzene	SVOC	Soil	mg/kg	57	0	0	57	100.00%
N-Nitroso-di-n-propylamine	SVOC	Soil	mg/kg	57	0	0	57	100.00%
N-Nitrosodiphenylamine	SVOC	Soil	mg/kg	57	0	0	57	100.00%
Pentachlorophenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
Phenanthrene	SVOC	Soil	mg/kg	57	55	0	57	100.00%
Phenol	SVOC	Soil	mg/kg	57	0	2	55	96.49%
Pyrene	SVOC	Soil	mg/kg	57	52	0	57	100.00%
Diesel Range Organics	TPH	Soil	mg/kg	57	52	0	57	100.00%
Gasoline Range Organics	TPH	Soil	mg/kg	57	2	0	57	100.00%
Oil & Grease	TPH	Soil	mg/kg	57	57	0	57	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	1	2	66.67%
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%
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	3	0	3	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
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	0	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	1	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