

RESPONSE AND DEVELOPMENT WORK PLAN

AREA B: SUB-PARCEL B13-3
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

Prepared For:



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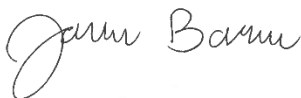
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Revision 0 – October 6, 2025

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1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), has prepared this Response and Development Work Plan (RADWP) for a portion of the TPA property that has been designated as Area B: Sub-Parcel B13-3 (the Site). TPA submitted a letter (dated September 2, 2025; **Appendix A**) requesting an expedited plan review to achieve construction deadlines for the proposed development on this Site. As shown on **Figure 1**, Sub-Parcel B13-3 consists of approximately 12.8 acres located within Parcel B13 of the approximately 3,100-acre former steel plant property.

Sub-Parcel B13-3 (refer to **Figure 2**) is slated to be used as a steel pipe manufacturing, rolling, and storage facility, and will include a 140,000-square-foot warehouse, parking lot, road, storage areas, and open areas. Associated stormwater and force main lines are also proposed. The planned development activities will generally include grading, building construction, paving of parking areas and roadways, and installation of utilities. Subsequent site use will involve workers inside of the proposed building and loading/unloading materials from the area. Outside of the main development area designated as Sub-Parcel B13-3, temporary construction zones (not intended for permanent occupancy) with a total area of 0.97 acres within the limit of disturbance (LOD) will be utilized for utility installation. These external construction worker areas are shown on **Figure 3**.

The conduct of any environmental assessment and cleanup activities on the TPA property, as well as any associated development, is subject to the requirements outlined in the following agreements:

- Administrative Consent Order (ACO) between TPA (formerly Sparrows Point Terminal, LLC) and the Maryland Department of the Environment (MDE), effective September 12, 2014; and
- Settlement Agreement and Covenant Not to Sue (SA) between TPA (formerly Sparrows Point Terminal, LLC) and the United States Environmental Protection Agency (USEPA), effective November 25, 2014.

Sub-Parcel B13-3 is part of the acreage that was removed (Carveout Area) from inclusion in the Multimedia Consent Decree between Bethlehem Steel Corporation, the USEPA, and the MDE (effective October 8, 1997) as documented in correspondence received from the USEPA on September 12, 2014. Based on this agreement, the USEPA determined that no further investigation or corrective measures will be required under the terms of the Consent Decree for the Carveout Area. However, the SA reflects that the property within the Carveout Area will remain subject to the USEPA's Resource Conservation and Recovery Act (RCRA) Corrective Action authorities.

An application to enter the full TPA property (3,100 acres) into the MDE Voluntary Cleanup Program (VCP) was submitted to the MDE 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.

In consultation with the MDE, TPA affirms that it desires to accelerate the assessment, remediation, and redevelopment of certain sub-parcels within the larger site due to current market conditions. To that end, the MDE and TPA agree that the Controlled Hazardous Substance (CHS) Act (Section 7-222 of the Environment Article) and the CHS Response Plan (Code of Maryland Regulations [COMAR] 26.14.02) shall serve as the governing statutory and regulatory authority for completing the development activities on Sub-Parcel B13-3 and complement the statutory requirements of the VCP (Section 7-501 of the Environment Article). Upon submission of a RADWP and completion of any remedial activities for the sub-parcel, the MDE shall issue a No Further Action Letter (NFA) upon a recordation of an Environmental Covenant describing any necessary land use controls for the specific sub-parcel. At such time that all the sub-parcels within the larger parcel have completed remedial activities, TPA shall submit to the MDE a request for issuing a Certificate of Completion (COC) as well as all pertinent information concerning completion of remedial activities conducted on the parcel. Once the VCP has completed its review of the submitted information it shall issue a COC for the entire parcel described in TPA's VCP application.

Alternatively, TPA or other entity may elect to submit an application for a specific sub-parcel and submit it to the VCP for review and acceptance. If the application is received after the cleanup and redevelopment activities described in this RADWP are implemented and an NFA is issued by the Agencies pursuant to the CHS Act, the VCP shall prepare a No Further Requirements Determination for the sub-parcel.

If TPA or other entity has not carried out cleanup and redevelopment activities described in the RADWP, the cleanup and redevelopment activities may be conducted under the oversight authority of either the VCP or the CHS Act, so long as those activities comport with this RADWP.

This RADWP provides a site description and history; summary of environmental conditions identified by the 2014 Phase I Environmental Site Assessment (ESA); summary of relevant findings and environmental conditions identified by the relevant Phase II Investigations conducted in 2016 and 2025; a human health Screening Level Risk Assessment (SLRA) conducted for the identified conditions; and any necessary engineering and/or institutional controls to facilitate the planned development and address the impacts and potential human health exposures. These controls include work practices and applicable protocols that are submitted for approval to support the development and use of the Site. Engineering/institutional controls approved and installed for this RADWP shall be described in closure certification documentation submitted to the Agencies demonstrating that exposure pathways on the Site are addressed in a manner that protects public health and the environment.

Portions of Parcel B13 have already been developed as part of the B13-1 RADWP (Revision 1, dated March 13, 2023) and B13-2 RADWP (Revision 0, dated November 25, 2024). The remainder of Parcel B13 will be addressed in separate development plans in accordance with the requirements of the ACO, which will include assessments of risk and, if necessary, RADWPs to address unacceptable risks associated with future land use.

2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE DESCRIPTION

The Sub-Parcel B13-3 development project consists of approximately 12.8 acres in the northwest portion of Parcel B13 (**Figure 1**). The development will include completion of a 140,000- square-foot warehouse, parking lot, road, storage areas, open areas, and utility installation (**Figure 2**). Outside of the main development area designated as Sub-Parcel B13-3, temporary external construction worker areas (not intended for permanent occupancy) with a total area of approximately 0.97 acres within the construction LOD will be utilized to install roadway connections for the project. The Site is currently zoned Manufacturing Heavy-Industrial Major (MH-IM) and is not occupied. There is no groundwater use on-site or within the surrounding TPA property.

Currently, the Site has a ground surface elevation of between 11 and 24 feet above mean sea level (amsl). A road borders the northern and western portions of the Site. According to Figure B-2 of the property Stormwater Pollution Prevention Plan (Revision 11, dated October 10, 2024), surface water runoff from the Site flows through gravel filter berms to the west, which discharges to the Patapsco River.

2.2 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 the facility ceased in fall 2012.

The Site was formerly occupied by the Ore Yard Material Handling Area. Any former buildings on Parcel B13 have been demolished. Descriptions of the facilities and processes that were completed in Parcel B13 are provided below:

Ore Yard Material Handling:

Raw materials were transported to the Sparrows Point facility by ship, truck, and rail and unloaded at the Ore Pier, A Pier, and car dumper. The raw materials were then transported by truck or conveyors to the Ore Yard for storage. The Ore Yard was divided into seven distinct storage areas (A, B, C, D, E, F, and G yards). Material stored in the Ore Yard included, but was not limited to, iron ore, ore fines, sinter, lime, limestone, and coke breeze. The B yard was used for coke storage and miscellaneous materials. The A yard (also a coke-storage area) was leased to and operated by Kinder Morgan. Raw materials were conveyed from the central unloading station to one of the yards via one of three main conveyors. The three main conveyors discharged to several

distributing conveyors that fed individual piles in the yard. The raw material from the yard was sent either to the Bedding Plant or the Blast Furnace stockhouse by a series of conveyors. Transitions between conveyors were enclosed or were located inside buildings for dust control and reclamation.

3.0 ENVIRONMENTAL SITE ASSESSMENT RESULTS

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT RESULTS

A Phase I ESA was completed by Weaver Boos for the entire Sparrows Point property on May 19, 2014. Weaver Boos completed site visits of Sparrows Point from February 19 through 21, 2014, for the purpose of characterizing current conditions at the former steel plant. The Phase I ESA identified particular features across the TPA property that presented potential risks to the environment. These Recognized Environmental Conditions (RECs) included buildings and process areas where releases of hazardous substances and/or petroleum products may have occurred. The Phase I ESA also relied upon findings identified during a previous visual site inspection (VSI) conducted in 1991 as part of the RCRA Facility Assessment prepared by A.T. Kearney, Inc. dated August 1993, for the purpose of identifying Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) on the property. This VSI is regularly cited in Description of Current Conditions (DCC) Report prepared by Rust Environment and Infrastructure (January 1998).

Weaver Boos' distinction of a REC or Non-REC was based upon the findings of the DCC Report (which was prepared when the features remained on-site in 1998) or on observations of the general area during its site visit. Weaver Boos made the determination to identify a feature as a REC based on historical information, observations during the site visit, and prior knowledge and experience with similar facilities. There were no RECs, SWMUs, or AOCs identified as sampling targets, and no additional units were identified from the DCC report Table 3-1 within the Site.

3.2 PHASE II INVESTIGATION RESULTS – SUB-PARCEL B13-3

Phase II Investigations specific to soil and groundwater conditions were performed for the property area including Sub-Parcel B13-3 in accordance with the requirements outlined in the ACO as further described in the following agency-approved Phase II Investigation Work Plans:

- Area B: Parcel B13 (Revision 0) dated May 25, 2016

All soil samples and groundwater samples were collected and analyzed in accordance with agency-approved protocols during the Phase II Investigations, the specific details of which can be reviewed in the agency-approved Work Plan. The Phase II Investigation was developed to target specific features which represented a potential release of hazardous substances and/or petroleum products to the environment, including RECs, SWMUs, and AOCs, as applicable, as well as numerous other targets identified from former operations that would have the potential for environmental contamination. Samples were also collected at site-wide locations to ensure full coverage of the investigation area. The full analytical results and conclusions of each investigation have been presented to the Agencies in the following Phase II Investigation Reports:

- Area B: Parcel B13 (Revision 0) dated April 19, 2017

In order to provide sufficient coverage of the Sub-Parcel B13-3 area, additional soil sampling was conducted. Soil sampling was initially proposed in the Supplemental Sampling Letter: JD Fields (dated August 7, 2025). Subsequent Agency correspondence via email on August 13, 2025, added groundwater sampling to the proposed field work, which was approved on August 14, 2025. The Supplemental Sampling Letter (dated August 19, 2025) was revised to expand this scope of work. This RADWP includes data from this supplemental work, which will be summarized in a forthcoming completion report.

This RADWP includes relevant soil and groundwater findings from both the Phase II Investigation and Supplemental Investigation with respect to the proposed development of Sub-Parcel B13-3.

3.2.1 Soil Investigation Findings

Within the Site LOD, the analytical data from 12 soil borings are used for this RADWP including six soil borings completed as part of the Parcel B13 Phase II (dated April 19, 2017), and six soil borings from the recent supplemental sampling. The 12 soil boring locations are shown on **Figure 4**. Two borings (B13-022-SB and B13-057-SB) are included related to utility connections that extend to the east. These two borings are only relevant to the Construction Worker SLRA. A total of 30 soil samples obtained from the 12 borings provide the analytical dataset used to evaluate on-site conditions.

The 30 soil samples were analyzed for:

- Target Compound List (TCL) volatile organic compounds (VOCs)
- TCL semi-volatile organic compounds (SVOCs) and polynuclear aromatic hydrocarbons
- total petroleum hydrocarbon (TPH), diesel range organics (DRO), and gasoline range organics (GRO)
- Oil & Grease
- Target Analyte List (TAL) metals
- hexavalent chromium, and
- cyanide.

Only shallow soil samples (0 to 1 feet below ground surface [bgs]) were analyzed for polychlorinated biphenyls (PCBs). The laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports are included as electronic attachments. The Data Validation Reports contain qualifier keys for the flags assigned to individual results in the attached summary tables.

Soil sample results were screened against the Project Action Limits (PALs) established in the property-wide Quality Assurance Project Plan (Revision 4, dated May 31, 2022), or based on other direct agency guidance. Several PALs have been adjusted based on revised toxicity data published by the USEPA. **Table 1** and **Table 2** provide summaries of the detected organic compounds and

inorganics in the soil samples collected from the soil borings relevant for this Site evaluation. **Figure S1** presents the soil sample results that exceeded the PALs among these soil borings. PAL exceedances were limited to one SVOC (benzo[a]pyrene) and two inorganics (arsenic and manganese).

Non-aqueous phase liquid (NAPL) was not observed in any of the soil boring locations.

3.2.2 Groundwater Investigation Findings

Within the Site LOD, the analytical data from five groundwater locations are used for this RADWP including three groundwater piezometers completed as part of the Parcel B13 Phase II (April 19, 2017), and two groundwater grab samples from the recent supplemental sampling. The five groundwater locations are shown on **Figure 5**.

There is no direct exposure risk for future Composite Workers at the Site because there is no use of groundwater on the TPA property; however, groundwater may be encountered in the sub-parcel during construction tasks. If groundwater is encountered, the appropriate health and safety plans and management procedures shall be followed to limit exposure in accordance with the dewatering requirements outlined in Section 5.2. Additionally, vapor intrusion (VI) risks are evaluated in Section 3.2.3.

Each groundwater monitoring point was inspected for evidence of NAPL using an oil-water interface probe prior to sampling. None of the borings or monitoring points advanced within the development project area showed evidence of NAPL. Groundwater samples were analyzed for:

- TCL-VOCs
- TCL-SVOCs
- TAL metals
- hexavalent chromium
- total cyanide
- TPH-DRO and TPH-GRO.

The laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports are included as electronic attachments. The Data Validation Reports contain qualifier keys for the flags assigned to individual results in the attached summary tables.

The Phase II Investigation groundwater results were screened against the PALs established in the property-wide QAPP (Revision 4, dated May 31, 2022), or based on other direct agency guidance. Similar to the evaluation of soil data, several PALs have been adjusted based on revised toxicity data published by the USEPA. **Table 3** and **Table 4** provide summaries of the detected organic compounds and inorganics in the groundwater samples. **Figure GW1** presents groundwater results that exceeded PALs. PAL exceedances in the vicinity of the proposed development project

consisted of three metals (lead, manganese, and vanadium), three SVOCs (benz[a]anthracene, naphthalene, and pentachlorophenol), TPH-GRO, TPH-DRO, and Oil & Grease. Hexavalent chromium was originally identified as a PAL exceedance at B13-115-GW, with a concentration of 717 µg/L (versus a PAL of 0.035 µg/L). However, the total chromium result was 2.765 µg/L. After discussions with the laboratory, it was determined that the sample was very turbid (even after filtration, likely due to the ‘grab’ nature of the sample); the analysis uses a colorimetric process where other interferents could contribute to the hexavalent chromium result. After an additional re-analysis of total chromium (from the same sample container as the hexavalent chromium result), total chromium was determined to be 2.2 µg/L, and the lab indicated that hexavalent chromium could not be higher than 2.2 µg/L. A laboratory email explaining this is included as an E-Attachment.

3.2.3 Locations of Potential Concern

Groundwater data were screened to determine whether any sample results exceeded the USEPA Vapor Intrusion Target Cancer Risk (carcinogen) or Target Hazard Quotient (THQ) (non-carcinogen) Screening Levels. The VI risk evaluation is summarized in **Table 5**. None of the individual sample results exceeded the cumulative VI cancer risk screening level of 1E-5, however, the non-cancer VI Hazard Index (HI) value of 1 was exceeded at sample locations B13-006-PZ, B13-115-GW, and B13-117-GW, all for cyanide. The B13-006-PZ location was included to cover groundwater conditions to the east of the Site, where utility installation work is proposed, and is located over 700 feet from the proposed building. B13-115-GW and B13-117-GW are located within the footprint of the proposed building.

Total cyanide was detected in four locations with concentrations ranging from 4.1 µg/L to 13.0 µg/L; the vapor intrusion screening criteria for cyanide (free or available) is 3.5 µg/L. This includes B13-115-GW (13.0 µg/L) and B13-117-GW (9.0 µg/L), which are located in the footprint of the future building. The VI risks were conservatively screened using total cyanide rather than free or available cyanide. A supplemental cyanide investigation was conducted (*Sitewide Groundwater Study Report*, ARM, 2017), with samples collected from 13 locations across the entire TPA Property with previously detected high total cyanide. Based on the cyanide results, a very small fraction of the total cyanide in groundwater is present in the form of available cyanide (less than 4% in all samples). Therefore, based on this study, the maximum calculated available cyanide in groundwater within the Site is 0.52 µg/L (4% of 13.0 µg/L). Accordingly, cyanide in groundwater in the Site is not expected to present a VI risk.

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.
- There were no locations where detections of PCBs exceeded 50 mg/kg.
- There were no locations where detections of TPH/Oil & Grease exceeded 6,200 mg/kg.

No visual observations of NAPL were noted at any locations within or proximate to the Site.

3.3 HUMAN HEALTH SCREENING LEVEL RISK ASSESSMENT

3.3.1 Analysis Process

A human health SLRA has been completed based on the analytical data obtained from the characterization of surface and subsurface soils. The SLRA was conducted to evaluate the existing soil conditions to determine if any response measures are necessary.

The SLRA included the following evaluation process:

Identification of Exposure Units (EUs): The Composite Worker SLRA was evaluated using a single Exposure Unit (EU1) with an area of 12.8 acres. EU1 corresponds with the proposed development area. The Construction Worker SLRA was evaluated using a slightly expanded EU (EU1-EXP), covering 13.8 acres in total which includes the 0.97 acres of additional construction worker areas incorporated within the LOD to include the facility utility installation outside of the sub-parcel. Soil boring data from locations B13-022-SB and B13-057-SB are included in EU1-EXP but not in EU1.

Identification of Constituents of Potential Concern (COPCs): For the project-specific SLRA, COPC screening was completed assuming a Target Risk of $1E-6$ and THQ of 0.1. The initial screening also identified parameters detected at a frequency greater than 5%. Based on that data set, parameters were identified as COPCs if:

- The compound was detected in soil at a frequency of greater than 5%; and
- The maximum detection exceeded the USEPA's Composite Worker Soil Regional Screening Levels (RSLs).

A COPC screening analysis is provided in **Table 6** and identifies the compounds above the relevant screening levels.

All aroclor mixtures (e.g., Aroclor 1242 and Aroclor 1248) are taken into account for the reported concentrations of total PCBs. Total PCB concentrations are used to evaluate the carcinogenic risk associated with PCBs.

Exposure Point Concentrations (EPCs): The COPC soil datasets for each EU were divided into surface (0 to 1 feet bgs), subsurface (>1 feet bgs), and pooled depths for

estimation of potential EPCs. Thus, there are three soil datasets associated with each EU. If there are fewer than 10 sample results, the maximum detected value is used as the soil EPC. If there are 10 or more sample results in the dataset, then a statistical analysis is performed using the ProUCL software (version 5.0) to determine representative reasonable maximum exposure (RME) values for the EPC for each constituent. The RME value is typically the 95% Upper Confidence Limit of the mean. For lead, the arithmetic mean for each depth was calculated for comparison to the Adult Lead Model (ALM)-based values (presented in **Table 7**).

Risk Ratios: The surface soil EPCs, subsurface soil EPCs, and pooled soil EPCs were compared to the USEPA RSLs for the Composite Worker and to site-specific Soil Screening Levels (SSLs) for the Construction Worker based on equations derived in the *USEPA Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (OSWER 9355.4-24, December 2002). Risk ratios were calculated with a cancer risk of $1\text{E-}6$ and a non-cancer Hazard Quotient (HQ) of 1. The risk ratios for the carcinogens were summed to develop a screening level estimate of the baseline cumulative cancer risk. The risk ratios for the non-carcinogens were segregated and summed by target organ to develop a screening level estimate of the baseline cumulative non-cancer HI.

For the Construction Worker, site-specific risk-based evaluations were completed for a range of potential exposure frequencies to determine the maximum allowable exposure frequency for the site-wide EU1-EXP that would result in risk ratios equivalent to a cumulative cancer risk of $1\text{E-}5$ or HI of 1 for the individual target organs. This analysis indicated an allowable exposure frequency of 85 days before additional worker protections or more detailed job safety evaluations are needed.

There is no potential for direct human exposure to groundwater for a Composite Worker since groundwater is not used on the TPA property (and is not proposed to be utilized). If during development, construction/excavation leads to a potential Construction Worker exposure to groundwater, health and safety plans and management procedures shall be followed to limit exposure risk.

Assessment of Lead: For lead, the arithmetic mean concentrations for surface soils, subsurface soils, and pooled soils for the site-wide EU were compared to the applicable RSL (800 mg/kg) as an initial screening. If the mean concentrations for the EU were below the applicable RSL, the EU was identified as requiring no further action for lead. If a mean concentration exceeded the RSL, the mean values were compared to calculated ALM values (based on the *Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (USEPA, January 17, 2024)) with inputs of 1.8 for the geometric standard deviation and a blood baseline lead level of 0.6 micrograms lead per deciliter of blood ($\mu\text{g/dL}$). The ALM calculation generates a soil lead concentration of

1,050 mg/kg, which represents the concentrations such that there would be no more than a 5% probability that fetuses exposed to lead would exceed a blood lead of 5 µg/dL. If the arithmetic mean concentrations for the EU were below 1,052 mg/kg, the EU was identified as requiring no further action for lead. The lead averages are presented for surface, subsurface, and pooled soils in **Table 7**. Neither surface, subsurface, nor pooled soils exceeded an average lead concentration of 800 mg/kg.

Assessment of TPH/Oil & Grease: EPCs were not calculated for TPH/Oil & Grease. Instead, the individual results were compared to the PAL set to a HQ of 1 (6,200 mg/kg). No soil sample results exceeded the PAL for TPH or Oil & Grease. Contingency measures for the potential presence of NAPL during construction are addressed in Section 5.1.1 of this RADWP.

Risk Characterization Approach: Generally, if the baseline risk ratio for each non-carcinogenic COPC or cumulative target organ does not exceed 1, and the sum of the risk ratios for the carcinogenic COPCs does not exceed a cumulative cancer risk of 1E-5, then a no-further-action determination will be recommended. If the baseline estimate of cumulative cancer risk exceeds 1E-5 but is less than or equal to 1E-4, then capping of the EU can be considered an acceptable remedy for the Composite Worker. The efficacy of capping for elevated non-cancer hazard will be evaluated in terms of the magnitude of exceedance and other factors such as bioavailability. For the Construction Worker, cumulative cancer risks exceeding 1E-5 (but less than or equal to 1E-4) or HI values exceeding 1 will be mitigated via site-specific health and safety requirements.

The USEPA's acceptable risk range is between 1E-6 and 1E-4. If the sum of the risk ratios for carcinogens exceeds a cumulative cancer risk of 1E-4, further analysis of site conditions will be required including consideration of toxicity reduction in a proposal remedy. The magnitude of any non-carcinogen HI exceedances and bioavailability of the COPC will also dictate further analysis of site conditions including consideration of toxicity reduction in a proposal remedy.

3.3.2 SLRA Results and Risk Characterization

Soil data were divided into three datasets (surface, subsurface, and pooled) for Sub-Parcel B13-3 to evaluate potential exposure scenarios. Due to the potential for grading activities including cut and fill at the Site, each of these potential exposure scenarios is relevant for the SLRA.

EPCs were calculated for each soil dataset (i.e., surface, subsurface, and pooled soils) in each EU. ProUCL output tables (with computed UCLs) derived from the data for each COPC in soils are provided as electronic attachments, with computations presented and EPCs calculated for COPCs within each of the datasets. The ProUCL input tables are also included as electronic attachments. The results were evaluated to identify any samples that may require additional assessment or

special management based on the risk characterization approach. The calculated EPCs for the surface, subsurface, and pooled exposure scenarios are provided in **Table 8**.

As indicated above, the EPCs for lead are the average (i.e., arithmetic mean) values for each dataset. A lead evaluation spreadsheet, providing the computations to determine lead averages for each dataset, is also included as an electronic attachment. The average and maximum lead concentrations are presented for each dataset in **Table 7**, which indicates surface, subsurface, and pooled soils did not exceed an average lead concentration of 800 mg/kg.

Composite Worker Assessment:

Risk ratios for the estimates of potential EPCs for the Composite Worker baseline scenario prior to the placement of industrial fill at the Site are shown in **Table 9** (surface), **Table 10** (subsurface), and **Table 11** (pooled). The results are summarized as follows:

Worker Scenario	Exposure Unit	Medium	Hazard Index (>1)	Total Cancer Risk
Composite Worker	EU1 (12.8 acres)	Surface Soil	none	7E-6
		Subsurface Soil	none	3E-6
		Pooled Soil	none	3E-6

Based on the risk ratios for Sub-Parcel B13-3, capping is not necessary to be protective of future Composite Workers for the surface, subsurface, and pooled exposure scenarios. None of the cancer risk values exceeded 1E-5 and none of the non-carcinogenic HI values exceeded 1.

Construction Worker Assessment:

Ground intrusive activities which could result in potential Construction Worker exposures are expected to be limited primarily to utility installation tasks performed by specific work crews. Construction Worker risks were evaluated for several different exposure scenarios to determine the maximum exposure frequency for the site-wide EU1-EXP that would result in risk ratios equivalent to a cumulative cancer risk of 1E-5 or HI of 1 for any individual target organ. Risk ratios for the Construction Worker scenario using the selected duration (85 days) are shown in **Table 12** (surface), **Table 13** (subsurface), and **Table 14** (pooled). The variables entered for calculation of the site-specific Construction Worker SSLs (EU area, input assumptions, and exposure frequency) are indicated as notes on the tables. The spreadsheet used for computation of the site-specific Construction Worker SSLs is included as **Appendix B**. The results are summarized as follows:

Worker Scenario	Exposure Unit	Medium	Hazard Index (>1)	Total Cancer Risk
Construction Worker	EU1-EXP (13.8 acres) (85 exposure days)	Surface Soil	none	3E-7
		Subsurface Soil	none	4E-7
		Pooled Soil	none	3E-7

Using the selected exposure duration for the site-wide EU1-EXP (85 days), the carcinogenic risks were all less than 1E-5, and none of the non-carcinogens caused a cumulative HI to exceed 1 for any target organ system. These findings are below the acceptable limits for no-further-action established by the Agencies. This evaluation indicates that additional site-specific health and safety requirements (beyond standard Level D protection) would be required only if the allowable exposure duration of 85 days were to be exceeded for an individual worker.

Development activities may exceed the allowable duration. In such an event, Construction Worker risks would be required to be mitigated, warranting additional site-specific health and safety requirements to be protective of workers. Upgraded Personal Protective Equipment (PPE) beyond standard Level D protection will be used for the entire scope of intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. The modified Level D PPE requirements which will be applied immediately and throughout this project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE Standard Operational Procedure (SOP) provided as **Appendix C**.

Institutional controls will be required to be established for the protection of future Construction Workers in the event of any future long-term construction projects which could include intrusive activities. The anticipated institutional controls, including notification requirements, health and safety requirements, and materials management requirements, are specified in Section 5.4.

3.3.3 SLRA Summary

Based on the data obtained from the characterization of surface and subsurface soils, the SLRA indicates no capping is required within the development area. Site-specific health and safety controls will be implemented to mitigate Construction Worker risks within the sub-parcel. This includes using modified Level D PPE. The modified Level D PPE requirements will be implemented throughout the project duration in accordance with the PPE SOP provided as **Appendix C**. As the Site is located within the Sparrows Point property, it will still be subject to institutional controls, including notification requirements, health and safety requirements, and materials management requirements.

4.0 PROPOSED SITE DEVELOPMENT PLAN

TPA is proposing the construction of a 140,000-square-foot building at Sub-Parcel B13-3. The proposed development will include permanent improvements on approximately 12.8 acres located within Parcel B13. The proposed future use of Sub-Parcel B13-3 is Tier 3 – Industrial. The remainder of Parcel B13 will be addressed in separate development plans in accordance with the requirements of the ACO and will include RADWPs, if necessary. Outside of the main development area, temporary external construction worker areas with a total area of approximately 0.97 acres will be utilized to install utilities for the project. The temporary work outside of the boundary of the Site is not intended to be the basis for the issuance of an NFA or a COC, although the scope of construction work is covered by this RADWP.

Certain compounds are present in the soils located near the surface and in the subsurface at concentrations in excess of the PALs. Therefore, soil is considered a potential medium of concern. Based on the results of the SLRA, potential risks associated with soil impacts exceeding the PALs do not require surface engineering controls (e.g., capping) to be protective of future adult worker health.

Future Construction Workers may contact impacted surface and/or subsurface soil during earth movement activities associated with construction activities, including within the temporary external construction worker areas outside of the primary development area. The findings of the Construction Worker SLRA indicated that using the site-specific 85-day exposure frequency for the site-wide EU1-EXP, the screening level estimates of Construction Worker cancer risk were less than 1E-5 and no HI values above 1 were identified for any target organ system (the acceptable thresholds for no further action).

Development activities at the Site are not expected to exceed the allowable duration; however additional site-specific health and safety requirements will be implemented as a conservatism to be protective of workers. Upgraded PPE beyond standard Level D protection will be used in conjunction with the property-wide Health and Safety Plan (HASP) for the entire scope of intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. The modified Level D PPE requirements which will be applied throughout this project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP provided as **Appendix C**.

A restriction prohibiting the use of groundwater for any purpose at the Site will be included as an institutional control in the NFA and COC issued by the Agencies, and a deed restriction prohibiting the use of groundwater will be filed. The groundwater use restriction will protect future Composite Workers from potential direct exposures. Proper water management is required to prevent unacceptable discharges or risks to Construction Workers during development. Work practices and

health and safety plans governing groundwater encountered during excavation activities will provide protection for Construction Workers involved with development at the Site.

The development plan for the Site is shown on **Figure 2**. Detailed development plan drawings are included as **Appendix D**. The development of the Site will involve the tasks listed below. Documentation of the outlined tasks and procedures will be provided in a Sub-Parcel B13-3 Development Completion Report.

4.1 DEVELOPMENT PHASE

4.1.1 Erosion and Sediment Control Installation

Erosion and sediment controls will be installed prior to the commencement of grading work in accordance with the requirements of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

4.1.2 Grading and Site Preparation

Grading activities include both cut and fill within the Sub-Parcel B13-3 boundary. Any material that is not suitable for compaction will be excavated and replaced with subbase material, although it is not anticipated that poor soils will be encountered. The use of approved clean fill will be necessary to avoid the Site from requiring surface engineering controls (i.e., capping). Fill sources shall be free of organic material, frozen material, or other deleterious material. If there is excess material (not anticipated), the spoils will be stockpiled at a suitable location and dealt with in accordance with the Materials Management Plan for the Sparrows Point Facility (Jenkins Environmental, Inc., August 17, 2021). This work will be coordinated with the Agencies accordingly. No excess material will leave the 3,100-acre property without prior approval from Agencies.

4.1.3 Installation of Underground Utilities

The infrastructure associated with the development of Sub-Parcel B13-3 will be installed as shown on **Figure 3**. Excavated soil with elevated PID readings or other signs of contamination will be stockpiled separately and managed in accordance with the requirements outlined in Sections 5.1.1 and 5.1.2, and in **Appendix E**. Excavated soils without elevated PID readings or other signs of contamination may be reused as backfill on the Site.

Any water removed will be sampled (if necessary) as described in Section 5.2.

4.1.4 Paving

As shown on **Figure 2**, a portion of the Site will be covered with paving. Because the Site is not required to be capped, there are no minimum thickness requirements for pavement sections.

4.1.5 Stormwater Management

New stormwater infrastructure will be installed throughout the Site and will discharge to the northwest of the Site. As shown on **Figure 6**, the site-wide shallow groundwater elevation range is from approximately 0.84 feet amsl to 0.67 feet amsl (in the east). This is approximately 9 feet below the final graded surface of the Site (of 10 feet amsl). Utility excavations are expected to reach depths of approximately 4 feet amsl. This is approximately 6 feet below the final graded surface of the Site. Based on the shallow groundwater elevation measurements collected during the site-wide groundwater elevation investigation, excavations may encounter groundwater. Water removed for dewatering will be managed as described in Section 5.2.

The stormwater management systems for each parcel are reviewed and approved by Baltimore County for each individual development project at the TPA property.

5.0 DEVELOPMENT IMPLEMENTATION PROTOCOLS

5.1 DEVELOPMENT PHASE

This plan presents protocols for the handling of soils and fill materials in association with the development of Sub-Parcel B13-3. In particular, this plan highlights the minimum standards for construction practices and managing potentially contaminated materials to reduce potential risks to workers and the environment.

Several minor PAL exceedances were identified in soil samples across the Site. The PALs are set based on the USEPA's RSLs for industrial soils, or other direct guidance from the MDE. Because PAL exceedances can present potential risks to human health and the environment at certain concentrations, this plan presents material management and other protocols to be followed during the work to adequately mitigate potential risks from such materials remaining on-site during the development phase. There were no locations in the proposed Site boundary with soil exceedances of the special management criteria for PCBs (50 mg/kg), lead (10,000 mg/kg), or TPH/Oil & Grease (6,200 mg/kg). NAPL was not detected on the water table in any monitoring wells within the proposed development area.

Following completion of the SLRA, the findings of the Construction Worker evaluation indicated that using the site-specific 85-day exposure frequency for the site-wide EU1-EXP, the screening level estimates of Construction Worker cancer risk were less than 1E-5 and no HI values above 1 were identified for any target organ system (the acceptable thresholds for no-further-action). Development activities at the Site are not expected to exceed the allowable duration of 85 days, however Construction Worker risks will be mitigated during the proposed construction. Upgraded PPE beyond standard Level D protection will be used in conjunction with the HASP for the entire scope of intrusive work covered by this RADWP as a protective measure to ensure no unacceptable exposures for Construction Workers during project implementation. The modified Level D PPE requirements, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP provided as **Appendix C**.

Based on the characterization of surface and subsurface soils and the associated SLRA findings, surface engineering controls are not required to be protective of future adult Composite Workers. Erosion/Sediment Control

Erosion and sediment controls will be installed prior to commencing grading work in accordance with the *Maryland Standards and Specifications for Soil Erosion and Sediment Control* (2011). The erosion and sediment controls will be approved by the Agencies. In addition, the following measures are used to prevent soil from exiting the Site:

- Stabilized construction entrance placed at site entrance.

- A dry street sweeper used as necessary on adjacent roads, with the swept dust collected and properly managed.
- Accumulated sediment removed from silt fence, and sediment traps if applicable, is being periodically removed and returned to the Site.

5.1.1 Soil Excavation and Utility Trenching

A pre-excavation meeting shall be held to address proper operating procedures for working on-site and monitoring excavations and utility trenching in potentially contaminated material. This meeting shall include the construction manager and the Environmental Professional (EP) providing oversight on the project. During the meeting, the construction manager and the EP shall review the proposed excavation/trenching locations and any associated utility invert elevations. The construction manager will be responsible for conveying all relevant information regarding excavation/grading and/or utility work to the workers who will be involved with these activities. The HASP and PPE SOP for the project shall also be reviewed and discussed.

The EP will provide oversight of soil excavation/trenching activities as described in Section 5.6. Soil excavation/trenching will occur during various phases of construction. In general, and based on the existing sampling information, all excavated materials are expected to be suitable for replacement on the Site. However, the EP will monitor the soil excavation activities for signs of significantly contaminated material which may not be suitable for reuse (as described below). The EP will also be responsible for monitoring organic vapor concentrations in the worker breathing zone within utility trenches and excavations to determine whether any increased level of health and safety protection is required.

To the extent practicable, all excavation activities should be conducted in a manner to minimize double or extra handling of materials. Stockpiles shall be stored in a location that is not subjected to concentrated stormwater runoff. Stockpiles shall be managed as necessary to prevent the erosion and off-site migration of stockpiled materials, and in accordance with the applicable provisions of the *Maryland Standards and Specifications for Soil Erosion and Sediment Control* (2011). Soil designated for replacement on-site which does not otherwise exhibit evidence of contamination (as determined by the EP) may be managed in large stockpiles (no size restriction) as long as they remain within the erosion and sediment controls.

A general utility cross section is provided as **Appendix F**. Additional preventative measures will be required if evidence of petroleum contamination is encountered, to prevent the discharge to, or migration of, petroleum product along a utility conduit. Contingency measures have been developed to ensure that utilities will be constructed in a manner that will prevent the migration of any encountered NAPL, and that excavated material will be properly managed. The Utility Excavation NAPL Contingency Plan (**Appendix G**) provides protocols to be followed if NAPL is

encountered during the construction activities. Preventative measures to inhibit the spread of petroleum product will be conducted in accordance with this Plan.

The EP will monitor all soil excavation and utility trenching activities for signs of potential contamination. Soils will be monitored with a hand-held photoionization detector (PID) for potential VOCs and will also be visually inspected for the presence of staining, petroleum waste materials, or other indications of significant contamination. If there are no visual indications of potential contamination and no elevated PID detections, material removed from excavations/trenching can be re-used as backfill on-site. If screening of excavated materials by the EP indicates the presence of conditions of potential concern (i.e., sustained PID readings greater than 10 ppm, visual staining, unsuitable waste materials, etc.), such materials shall be segregated for additional sampling and special management.

Excavated material exhibiting evidence of significant contamination shall be placed in stockpiles (not to exceed 500 cubic yards) on polyethylene sheeting to minimize potential exposures and erosion. Materials stockpiled due to evidence of contamination will be sampled in accordance with reuse and/or waste disposal requirements and transported to an appropriate permitted disposal facility. Analysis of segregated soils for any use other than disposal must be submitted to the Agencies for approval.

5.1.2 Soil Sampling and Disposal

Excavated materials that are determined by the EP to warrant sampling and analysis because of elevated PID readings or other indications of potential contamination shall be sampled and analyzed to determine how the materials should be managed. If excavated and stockpiled, such materials shall be placed on a polyethylene or equivalent tarp to minimize potential exposures and erosion. All stockpiled soil may be considered for use as fill under surface engineering controls at this Site or on other areas of the TPA property depending on the analytical results.

Any soil that is generated from excavations/trenching that is not proposed (or suitable) for reuse within the subject parcel will be sampled to determine the suitability of the material for disposal. Soil material that is determined to be non-hazardous may be taken to an appropriate non-hazardous landfill (which may include Greys Landfill if approved by TPA) for proper disposal. Soil material that is determined to be a hazardous waste shall be shipped off-site in accordance with applicable regulations to an appropriate and permitted RCRA disposal facility. A summary of sampling including a description of the material, estimated volume, and sampling parameters will be submitted to the Agencies. The quantities of all materials that require disposal, if any, will be recorded and identified in the Development Completion Report.

5.1.3 Fill

The use of approved clean fill will be necessary at the Site to allow for the Site to avoid being subject to surface engineering controls (i.e., capping). Soil excavated on the Sub-Parcel has been determined to be suitable for re-use within the Site unless such materials are determined by the Agencies to be unsuitable for use as outlined in Section 5.1.1 and Section 5.1.2.

All over-excavated utility trenches will be backfilled with material approved by the Agencies for industrial use. Backfill may include material removed from utility trenches unless such materials are identified by the EP as unsuitable due to elevated PID readings or other indications of potential contamination. A general utility detail drawing is provided as **Appendix F**. Material imported to the Site will be screened according to Agency guidance for suitability.

5.1.4 Dust Control

General construction operations, including grading, will be performed at the Site. These activities are anticipated to be performed in areas of soil impacted with COPCs. Best management practices should be undertaken at the TPA property as a whole to prevent the generation of dust which could impact other areas of the property outside of the immediate work zone. To limit worker exposure to contaminants borne in dust and windblown particulates, dust monitoring will be performed during dust-generating activities.

The EP will be responsible for the Site dust monitoring program. This will consist of both monitoring for visible dust as well as real-time dust monitoring. If sustained visible dust is observed, the General Contractor will implement dust suppression methods to address dust levels at the Site. Such methods may include an increase in the frequency of water trucks spraying vehicle routes, covering of material piles with plastic sheeting, or decreasing drop heights of material from excavation equipment.

Real-time dust monitoring will be implemented using Met One Instruments, Inc. E-Sampler dust monitors or equivalent real-time air monitoring devices will be utilized. Continuous dust monitoring will be performed in the work area as well as perimeter monitors at upwind and downwind locations based on the prevailing wind direction predicted for that day. The prevailing wind direction will be assessed during the day, and the positions of the perimeter monitors may be adjusted if there is a substantial shift in prevailing wind direction.

The action level for determining the need for implementing additional dust suppression methodologies is 3.0 milligrams per cubic meter (mg/m^3). The lowest of the site-specific dust action levels, Occupational Safety and Health Administration Permissible Exposure Limit, and American Conference of Governmental Industrial Hygienists Threshold Limit Value was selected. If sustained dust concentrations exceed the action level ($3.0 \text{ mg}/\text{m}^3$) at monitoring locations as a result of conditions occurring at the Site, operations will be temporarily stopped until additional

dust suppression can be implemented. Operations may resume once monitoring indicates that dust concentrations are below the action level.

Once all dust-generating activities are complete, the dust monitoring program may be discontinued.

5.2 WATER MANAGEMENT

This plan presents the protocols for handling recovered groundwater or surface water during proposed Sub-Parcel B13-3 construction activities.

5.2.1 Groundwater PAL Exceedances

Groundwater samples were collected during the preceding Phase II Investigation from monitoring wells within and surrounding the Site. Aqueous PAL exceedances in groundwater in the vicinity of the development LOD included several organic compounds. The aqueous PAL exceedances are summarized on **Figure GW1**. As noted above, three locations (B13-006-PZ, B13-115-GW, and B13-117-GW) showed cyanide vapor intrusion exceedances, however, available cyanide is a small fraction of the total cyanide observed. Accordingly, cyanide in groundwater at the Site is not expected to present a VI risk.

While the concentrations of PAL exceedances are not deemed to be a significant human health hazard for future workers since there is no on-site groundwater use which could lead to direct exposures, proper water management is required during construction to prevent unacceptable discharges or risks to Construction Workers.

5.2.2 Dewatering

Dewatering may be necessary to facilitate the placement and compaction of structural fill as well as during ground intrusive work such as the installation of underground utilities or within excavations/trenches. **Figure 6** displays the groundwater elevations underlying the Site for the shallow aquifer zone, based on prior investigation data. The site-wide shallow groundwater elevations are less than 1 foot amsl (approximately 9 feet below the final graded surface). Utility excavations are expected to reach depths of approximately 4 feet amsl (approximately 6 feet below the final graded surface). Excavations may encounter groundwater. If dewatering is required during construction, it shall be done in accordance with all local, state, and federal regulations. Water that collects in excavations/trenches due to intrusion of groundwater, stormwater, and/or dust control waters will be managed via one of the following options:

- Transported to be treated at the HCWWTP, following any pretreatment necessary and discharged in accordance with NPDES Permit No. 90-DP-0064; Special Conditions; A.1, A.4, or A.6 (whichever is currently in effect); Effluent Limitations and Monitoring Requirements;

- Discharged to the Baltimore County sanitary sewer system;
- Discharged in accordance with the requirements of the *General Permit for Stormwater Associated with Construction Activity (20-CP)*;
- Discharged locally in accordance with the requirements of *Special Condition AF, Section 2, Mobile Dewatering Collection and Treatment Unit of NPDES Permit No. 90-DP-0064*; or
- Off-site disposal.

The Agencies will be notified which option is selected prior to the generation of groundwater. If water is sent to the HCWWTP via the Tin Mill Canal, trucking, or direct discharge to a drainage system that flows to the HCWWTP, applicable outfall dewatering fluids will be evaluated pursuant to the HCWWTP Constituent Threshold Limits for Dewatering Activities related to Remediation, Development, and Capping Protocol listed below. Water discharged to the Tin Mill Canal will also be pumped through a filter bag, weir frac tank, or equivalent to remove suspended solids prior to discharge.

The EP will inspect water that collects in the excavations/trenches. If the water exhibits indications of significant contamination (e.g., sheen, odor, discoloration, presence of product), the water may also be sampled to confirm conditions. If the results of the analyses are above the threshold levels listed below, groundwater at the Site will be further evaluated to confirm acceptable treatment by the HCWWTP, or will be evaluated to design an appropriate pre-treatment option. Alternatively, the water may be disposed of at an appropriate off-site facility.

<u>Analysis</u>	<u>Threshold Levels</u>
• <u>Total metals by USEPA Method 6020A</u>	<u>1,000 ppm</u>
• <u>PCBs by USEPA Method 8082</u>	<u>>Non-Detect</u>
• <u>SVOCs by USEPA Method 8270C</u>	<u>1 ppm</u>
• <u>VOCs by USEPA Method 8260B</u>	<u>1 ppm</u>
• <u>Oil & Grease by USEPA Method 1664</u>	<u>200 ppm</u>
• <u>TPH-DRO by USEPA Method 8015B</u>	<u>200 ppm</u>
• <u>TPH-GRO by USEPA Method 8015B</u>	<u>200 ppm</u>

Documentation of water testing and the selected disposal option will be reported to the Agencies in the Development Completion Report. Associated permits or permit modifications related to dewatering will also be provided in the Development Completion Report.

5.3 HEALTH AND SAFETY

A property-wide HASP has been developed and is provided with this RADWP (as an electronic attachment) to present the minimum requirements for worker health and safety protection for all development projects. All contractors working on the Site may elect to adopt the property-wide HASP or may prepare their own HASP that provides a level of protection that is at least as much as that provided by the attached HASP.

General health and safety controls (level D protection) are adequate to mitigate potential risk to Construction Workers conducting ground intrusive activities for a duration of up to 85 exposure days. However, certain ground intrusive activities at the Site (utility installations for specific crews) may exceed the allowable duration. Therefore, modified Level D PPE will be used for the entire scope of intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. Health and safety controls outlined in the HASP and PPE SOP will mitigate any potential risk to Construction Workers from contacting impacted soil and groundwater during development. The modified Level D PPE requirements planned for this development project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP provided as **Appendix C**. The EP will be responsible for monitoring organic vapor concentrations in the worker breathing zone within the utility trenches and excavations to determine whether any increased level of health and safety protection (including engineering controls and/or PPE) is required.

Prior to commencing work, the contractor must conduct an on-site safety meeting for all personnel. All personnel must be made aware of the HASP and the PPE SOP. Detailed safety information shall be provided to personnel who may be exposed to COPCs. Workers will be responsible for following established safety procedures to prevent contact with potentially contaminated material.

5.4 INSTITUTIONAL CONTROLS (FUTURE LAND USE CONTROLS)

Long-term conditions related to future use of the Site will be placed on the RADWP approval, NFA, and COC. These conditions are anticipated to include the following:

- A restriction prohibiting the use of groundwater for any purpose at the Site and a requirement to characterize, containerize, and properly dispose of groundwater in the event of excavations encountering groundwater.
- Notice to the MDE at least 30 days prior to any future soil disturbances.
- Notice to the USEPA at least 30 days prior to any future soil disturbances, only if the proposed duration of ground intrusive activity would exceed the allowable exposure duration determined in the SLRA and the contractor will not use the modified Level D PPE specified in the approved SOP.

- Requirement for a HASP in the event of any future excavations at the Site.
- Complete appropriate characterization and disposal of any material excavated/pumped at the Site in accordance with applicable local, state, and federal requirements.

The owner/operator will file the above deed restrictions as defined by the VCP in the NFA and COC.

5.5 POST REMEDIATION REQUIREMENTS

Post remediation requirements will include compliance with the conditions specified in the NFA, COC, and the deed restrictions recorded for the Site. Deed restrictions will be recorded within 30 days after receipt of the final NFA. In addition, the Agencies will be provided with a written notice of any future excavations (as applicable) in accordance with the requirements given in Section 5.5. Written notice of planned excavation activities will include the proposed date(s) for the excavation, location of the excavation, health and safety protocols (as required), clean fill source (as required), and proposed characterization and disposal requirements. Written notice may consist of email correspondence and/or hard copy correspondence.

5.6 CONSTRUCTION OVERSIGHT

Construction Oversight by an EP will ensure and document that the project is built as designed and appropriate environmental and safety protocols are followed. Upon completion, the EP will certify that the project is constructed in accordance with this RADWP.

The EP will monitor soil excavation and utility trenching activities for signs of contamination that may indicate materials that are not suitable for reuse. In particular, soils will be monitored with a hand-held PID for potential VOC impacts, and will also be visually inspected for staining, petroleum waste materials, or other indications of significant contamination. If screening of excavated materials by the EP indicates the presence of conditions of potential concern (i.e., sustained PID readings greater than 10 ppm, visual staining, unsuitable waste materials, etc.), such materials shall be segregated for additional sampling and special management (as described in Section 5.1.2; Soil Excavation and Utility Trenching). The EP will also perform routine periodic breathing zone monitoring and PPE spot checks during ground intrusive activities. The EP will also inspect water that collects in excavations/trenches on an as-needed basis to coordinate appropriate sampling prior to disposal (as described in Section 5.2.2; Dewatering).

Daily inspections, as necessary, will be performed during general site grading to verify:

- appropriate fill materials are being used (as described in Section 5.1.4; Fill)
- dust monitoring and control measures are being implemented as appropriate (as described in Section 5.1.5; Dust Control)

- the requirements of the HASP and the PPE SOP are being enforced by the designated Site Safety Officer (as described in Section 5.4; Health and Safety), and
- surface engineering controls are being installed with the appropriate thicknesses (shown on the RADWP attachments).

Oversight by an EP will not be required during construction activities which do not have a significant environmental component, such as above-grade construction.

Records will be developed by the EP to document:

- Compliance with soil screening requirements;
- Proper water management, including documentation of any testing and water disposal; and
- Observations of construction activities during site grading.

6.0 PERMITS, NOTIFICATIONS AND CONTINGENCIES

The participant and their contractors will comply with all local, state, and federal laws and regulations by obtaining any necessary approvals and permits to conduct the activities contained herein. Any permits or permit modifications from State or local authorities will be provided as addenda to this RADWP.

A grading permit is required if the proposed grading disturbs over 5,000 square feet of surface area or over 100 cubic yards of earth. A grading permit is required for any grading activities in any watercourse, floodplain, wetland area, buffers (stream and within 100 feet of tidal water), habitat protection areas or forest buffer areas (includes forest conservation areas). Based on the scope of proposed earth disturbance, a grading permit was acquired as part of this development project. Erosion and Sediment Control Plans were submitted to, and approved by, the Agencies prior to initiation of land disturbance for development.

Contingency measures will include the following:

1. The Agencies will be notified immediately of any previously undiscovered contamination, previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices.
2. Any significant change to the implementation schedule will be noted in the progress reports to Agencies.
3. Modified Level D PPE will be used for the entire scope of ground intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. The modified Level D PPE requirements which will be applied during this project are outlined in the PPE SOP provided as **Appendix C**. If it is not possible to implement the PPE SOP as provided, the Agencies will be notified and a RADWP Addendum will be submitted to detail any appropriate mitigative measures.

7.0 IMPLEMENTATION SCHEDULE

Progress reports will be submitted to the Agencies on a quarterly basis. Each quarterly progress report will include, at a minimum, a discussion of the following information regarding tasks completed during the specified quarter:

- Development Progress
- Soil Management (imported materials, screening, stockpiling)
- Soil Sampling and Disposal
- Water Management
- Dust Monitoring
- Notable Occurrences (if applicable)
- Additional Associated Work (if applicable)

The proposed implementation schedule is shown below:

<u>Task</u>	<u>Proposed Completion Date</u>
Anticipated RADWP Approval	November 2025
<i>Development:</i>	
Installation of Erosion and Sediment Controls	December 2025
Site Preparation / Grading	December 2025
Utility Installations	December 2025 (start) December 2025 (completion)
Substantial Completion	December 2025
Submittal of Development Completion Report/ Notice of Completion of Remedial Actions*	December 2025
Request for NFA from the Agencies	December 2025
Recordation of institutional controls in the land records office of Baltimore County	Within 30 days of receiving the approval of NFA from the Agencies

Submit proof of recordation with
Baltimore County

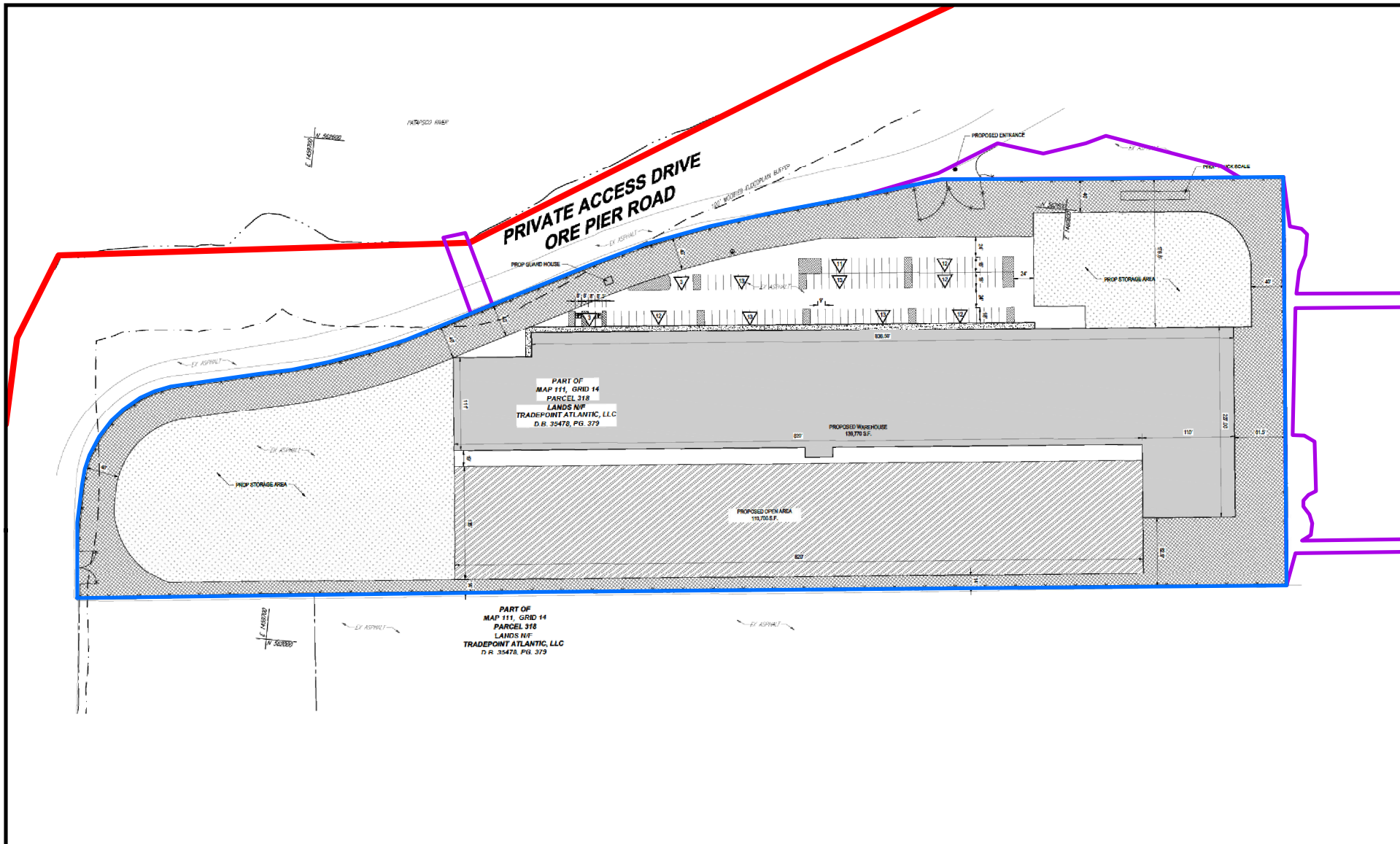
Upon receipt from Baltimore County

*Notice of Completion of Remedial Actions will be prepared by Professional Engineer registered in Maryland and submitted with the Development Completion Report to certify that the work is consistent with the requirements of this RADWP and the Site is suitable for occupancy and use.

FIGURES

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LEGEND

- Site Boundary
- External Construction Worker
- Parcel Boundary

Sub-Parcel B13-3 Proposed Development Plan

August 28, 2025

Figure
2



ARM Group LLC
Engineers and Scientists

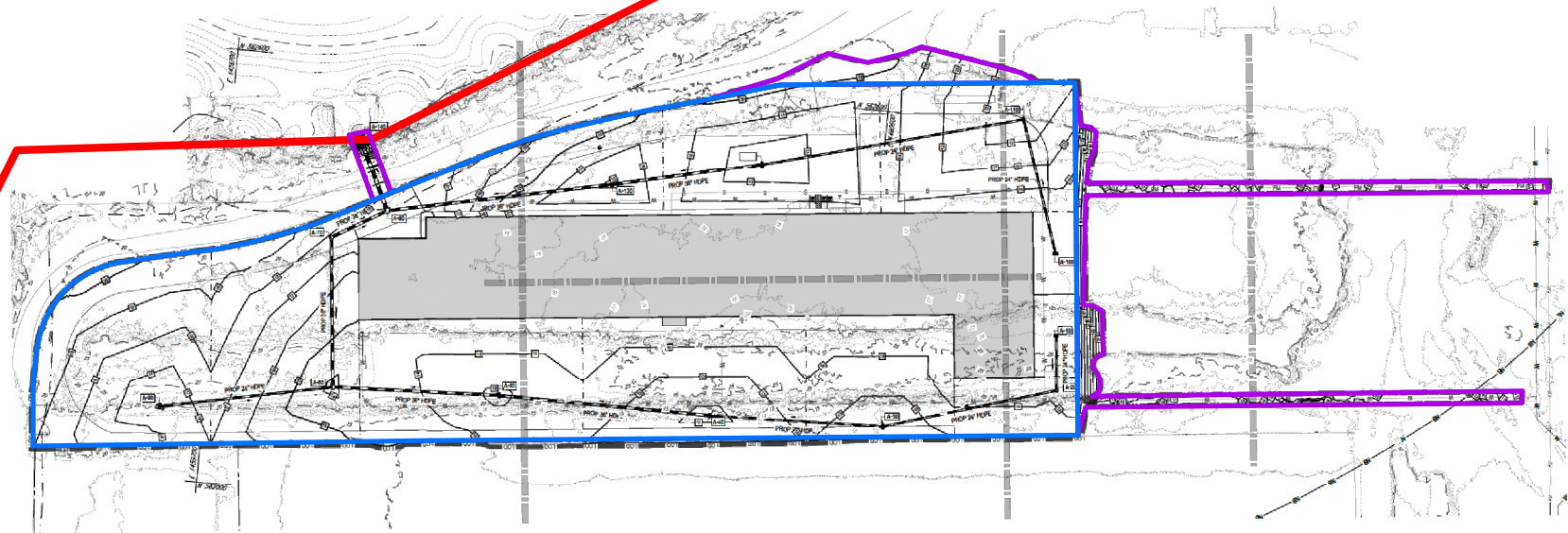
0 50 100 200
Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010213



LEGEND

- Site Boundary
- External Construction Worker
- Parcel Boundary

Sub-Parcel B13-3
Proposed Grading Plan
August 28, 2025

Figure
3

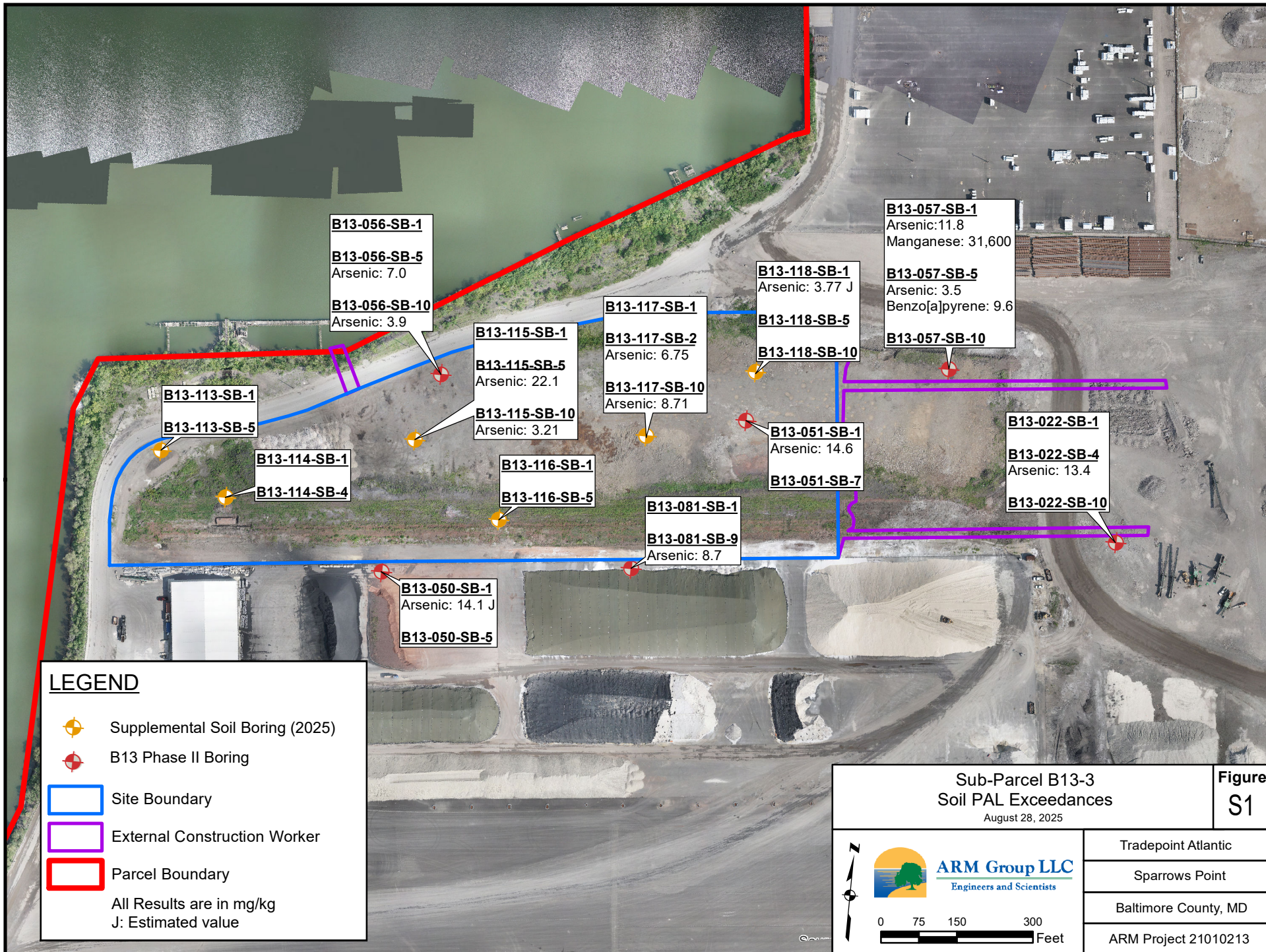


ARM Group LLC
Engineers and Scientists

0 75 150 300
Feet

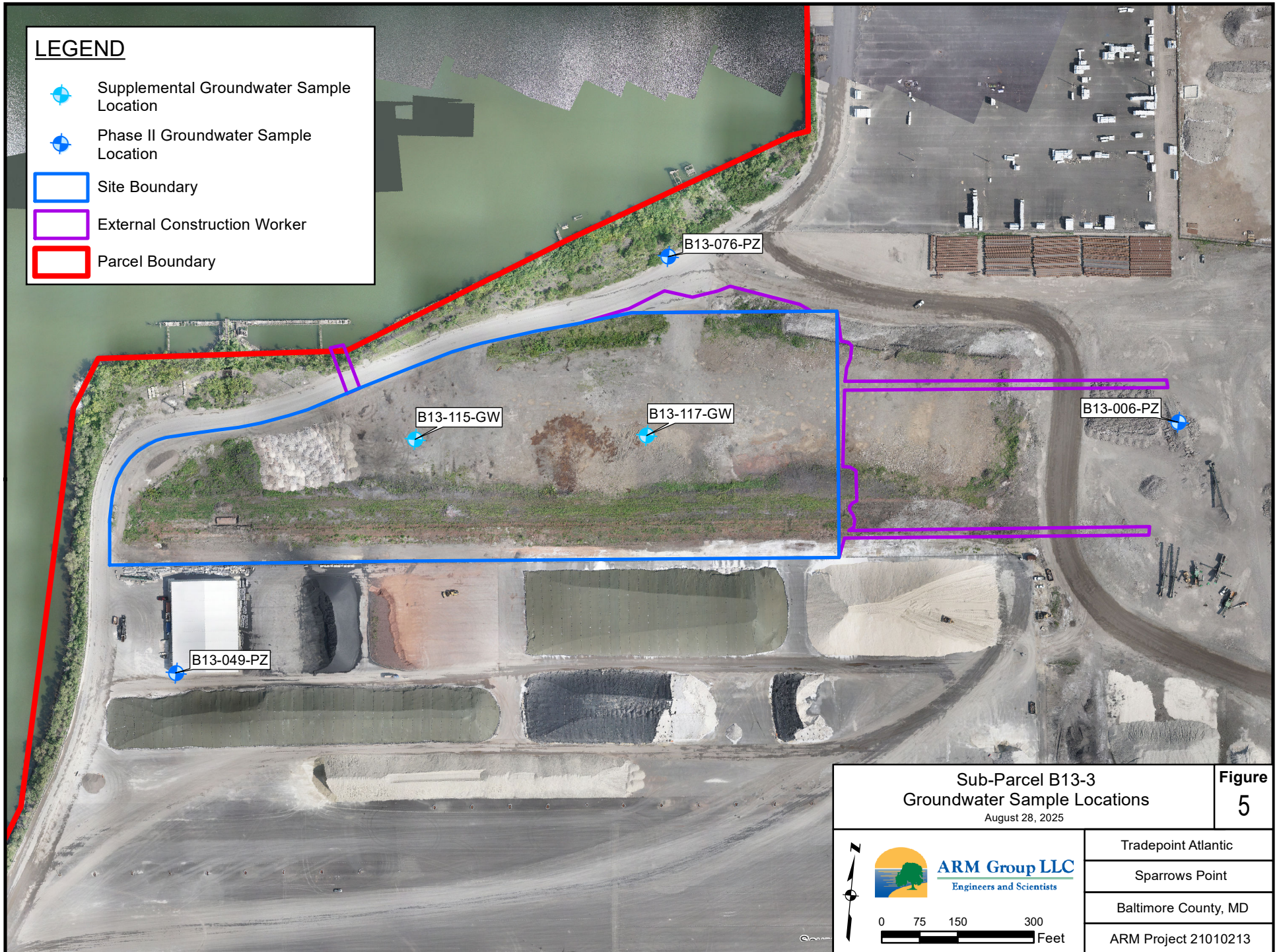
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010213





LEGEND

-  Supplemental Groundwater Sample Location
-  Phase II Groundwater Sample Location
-  Site Boundary
-  External Construction Worker
-  Parcel Boundary



LEGEND

-  Supplemental Groundwater Sample Location
-  Phase II Groundwater Sample Location
-  Site Boundary
-  External Construction Worker
-  Parcel Boundary

B13-076-PZ

VOCs

SVOCs

Naphthalene: 0.74
Pentachlorophenol: 1.1 J

TPH/OG

DRO: 59.4 J

Inorganics

B13-115-GW

VOCs

Benz[a]anthracene: 0.04 J

SVOCs

TPH/OG
OG: 5,200

Inorganics

Hexavalent Chromium: 717*

B13-117-GW

VOCs

SVOCs

Benz[a]anthracene: 0.11

TPH/OG

DRO: 74

Inorganics

Total Lead: 20.56
Total Manganese: 956.6
Total Vanadium: 105.7

B13-006-PZ

VOCs

SVOCs

Naphthalene: 4.9
Pentachlorophenol: 1.1 J

TPH/OG

DRO: 172 J
OG: 1,300 J

Inorganics

B13-049-PZ

VOCs

SVOCs

Naphthalene: 0.8
Pentachlorophenol: 1 J

TPH/OG

DRO: 50.1 J
GRO: 76.4 J

Inorganics

Notes:

1. All Results in ug/L
2. J: Estimated value
3. * Hexavalent chromium value is anomalous. See text for details.
4. Acronyms:
 - VOC: Volatile Organic Compound
 - SVOC: Semi-volatile Organic Compound
 - TPH: Total Petroleum Hydrocarbon
 - OG: Oil & Grease
 - DRO: Diesel Range Organics
 - GRO: Gasoline Range Organics

Sub-Parcel B13-3 Groundwater PAL Exceedances

September 8, 2025

**Figure
GW1**



ARM Group LLC
Engineers and Scientists

0 75 150 300
Feet

Tradepoint Atlantic

Sparrows Point

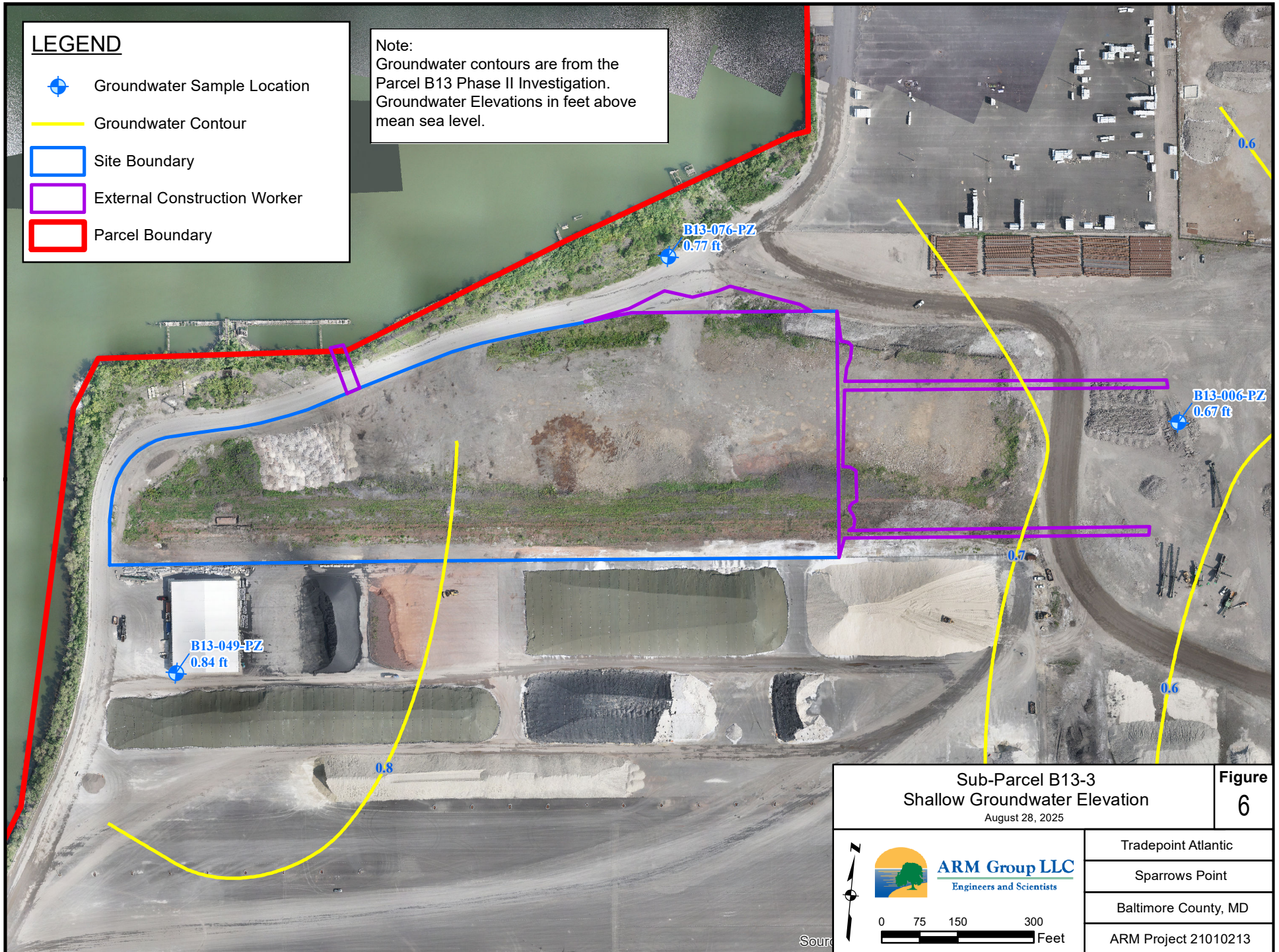
Baltimore County, MD

ARM Project 21010213

LEGEND

-  Groundwater Sample Location
-  Groundwater Contour
-  Site Boundary
-  External Construction Worker
-  Parcel Boundary

Note:
Groundwater contours are from the
Parcel B13 Phase II Investigation.
Groundwater Elevations in feet above
mean sea level.



Sub-Parcel B13-3 Shallow Groundwater Elevation

August 28, 2025

Figure
6



ARM Group LLC
Engineers and Scientists

0 75 150 300
Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 21010213

TABLES

Table 1 - Sub-Parcel B13-3
Summary of Organics Detected in Soil

Parameter	Units	PAL	B13-022-SB-1	B13-022-SB-4	B13-022-SB-10	B13-050-SB-1	B13-050-SB-5	B13-051-SB-1	B13-051-SB-7	B13-056-SB-1	B13-056-SB-5	B13-057-SB-1	B13-057-SB-5	B13-057-SB-10	B13-081-SB-1
			8/24/2016	8/24/2016	8/24/2016	8/24/2016	8/24/2016	8/24/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	9/1/2016	9/1/2016	9/1/2016
Volatile Organic Compounds															
2-Butanone (MEK)	mg/kg	190,000	0.0045 J	0.011 U	N/A	N/A	N/A	0.0088 U	N/A	N/A	0.013 U	N/A	0.011 U	N/A	N/A
Acetone	mg/kg	670,000	0.022	0.015	N/A	N/A	N/A	0.011 B	N/A	N/A	0.023 B	N/A	0.011 U	N/A	N/A
Benzene	mg/kg	5.1	0.0071 U	0.0053 U	N/A	N/A	N/A	0.0044 U	N/A	N/A	0.029	N/A	0.0054 U	N/A	N/A
Cyclohexane	mg/kg	27,000	0.014 U	0.011 U	N/A	N/A	N/A	0.0088 U	N/A	N/A	0.013 U	N/A	0.011 U	N/A	N/A
Ethylbenzene	mg/kg	25	0.0071 U	0.0053 U	N/A	N/A	N/A	0.0044 U	N/A	N/A	0.004 J	N/A	0.0054 U	N/A	N/A
Toluene	mg/kg	47,000	0.0071 U	0.0053 U	N/A	N/A	N/A	0.0044 U	N/A	N/A	0.019	N/A	0.0054 U	N/A	N/A
Semi-Volatile Organic Compounds^															
1-Methylnaphthalene	mg/kg	--	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Biphenyl	mg/kg	200	0.72 U	0.74 U	N/A	0.067 U	0.071 U	0.12	0.073 U	0.02 J	0.074 U	0.067 U	0.071 U	N/A	0.071 U
2,4-Dimethylphenol	mg/kg	16,000	0.072 U	0.034 J	N/A	0.067 UJ	0.071 U	0.083	0.073 U	0.073 U	0.074 U	0.067 U	0.071 U	N/A	0.071 U
2-Chloronaphthalene	mg/kg	60,000	0.72 U	0.74 U	N/A	0.067 U	0.071 U	0.072 U	0.073 U	0.11	0.074 U	0.067 U	0.071 U	N/A	0.071 U
2-Methylnaphthalene	mg/kg	3,000	0.071 U	0.12	N/A	0.017	0.0071 U	0.49	0.0062 J	0.15	0.0087	0.058	0.14	N/A	0.0071 U
2-Methylphenol	mg/kg	41,000	0.072 U	0.074 U	N/A	0.067 UJ	0.071 U	0.05 J	0.073 U	0.073 U	0.074 U	0.067 U	0.071 U	N/A	0.071 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	0.15 U	N/A	0.13 UJ	0.14 U	0.08 J	0.15 U	0.15 U	0.15 U	0.13 U	0.14 U	N/A	0.14 U
Acenaphthene	mg/kg	45,000	0.071 U	0.075 U	N/A	0.002 J	0.0071 U	0.021	0.00075 J	0.0098	0.00057 J	0.0058 J	2.3	N/A	0.0071 U
Acenaphthylene	mg/kg	45,000	0.15	0.19	N/A	0.00071 J	0.0071 U	0.019	0.0012 J	0.026	0.0014 J	0.0057 J	0.027 J	N/A	0.0071 U
Acetophenone	mg/kg	120,000	0.072 U	0.074 U	N/A	0.067 U	0.071 U	0.072 U	0.073 U	0.073 U	0.074 U	0.067 U	0.071 U	N/A	0.071 U
Anthracene	mg/kg	230,000	0.071 U	0.27	N/A	0.0046 J	0.0071 U	0.096	0.0025 J	0.081	0.0053 J	0.013	0.52	N/A	0.0071 U
Benz[a]anthracene	mg/kg	21	0.031 J	0.10	N/A	0.014 J	0.0071 U	0.13	0.009	0.25	0.0051 J	0.038	4.4	0.31	0.0019 J
Benzaldehyde	mg/kg	120,000	0.072 U	0.074 U	N/A	0.067 R	0.071 R	0.16	0.073 U	0.073 U	0.074 U	0.029 J	0.071 U	N/A	0.071 U
Benzo[a]pyrene	mg/kg	2.1	0.024 J	0.084	N/A	0.011	0.0071 U	0.09	0.0061 J	0.34	0.0033 J	0.037	9.6	0.65	0.0071 U
Benzo[b]fluoranthene	mg/kg	21	0.066 J	0.2	N/A	0.039	0.0071 U	0.19	0.013	0.25	0.0081	0.071	12	0.79	0.0017 J
Benzo[g,h,i]perylene	mg/kg	--	0.026 J	0.066 J	N/A	0.011 J	0.0071 U	0.058	0.0037 J	0.27	0.0032 J	0.032	5.5	N/A	0.0071 U
Benzo[k]fluoranthene	mg/kg	210	0.05 J	0.17	N/A	0.035 J	0.0071 U	0.17	0.012	0.22	0.0072 J	0.061	3.3	N/A	0.0015 J
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.072 U	0.074 U	N/A	0.067 UJ	0.071 U	0.02 J	0.073 U	0.073 U	0.074 U	0.016 J	0.026 J	N/A	0.071 U
Butylbenzylphthalate	mg/kg	1,200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	mg/kg	--	0.072 U	0.74 U	N/A	0.067 U	0.071 U	0.058 J	0.073 U	0.05 J	0.074 U	0.067 U	0.077	N/A	0.071 U
Chrysene	mg/kg	2,100	0.017 J	0.12	N/A	0.032 J	0.0071 U	0.19	0.0079	0.31	0.0079	0.059	4.7	N/A	0.0014 J
Dibenz[a,h]anthracene	mg/kg	2.1	0.071 U	0.022 J	N/A	0.0046 J	0.0071 U	0.024	0.0014 J	0.12	0.0014 J	0.013	1.8	0.16	0.0071 U
Dibenzofuran	mg/kg	--	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diethylphthalate	mg/kg	660,000	0.72 U	0.74 U	N/A	0.067 U	0.071 U	0.072 U	0.073 U	0.073 U	0.074 U	0.067 U	0.071 U	N/A	0.024 J
Dimethylphthalate	mg/kg	--	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Di-n-butylphthalate	mg/kg	82,000	0.072 U	0.37 J	N/A	0.067 U	0.071 U	0.072 U	0.073 U	0.073 U	0.074 U	0.067 U	0.071 U	N/A	0.071 U
Fluoranthene	mg/kg	30,000	0.027 J	0.22	N/A	0.032 J	0.0071 U	0.22	0.017	0.14	0.01	0.046	4.4	N/A	0.0022 J
Fluorene	mg/kg	30,000	0.071 U	0.075 U	N/A	0.0035 J	0.0071 U	0.036	0.00083 J	0.022	0.0017 J	0.0086	0.27	N/A	0.0071 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.021 J	0.053 J	N/A	0.0078 J	0.0071 U	0.035	0.004 J	0.11	0.0024 J	0.019	5.7	0.47	0.0071 U
Naphthalene	mg/kg	8.6	0.019 J	0.20	N/A	0.046 J	0.0071 U	0.24	0.018	0.12	0.012	0.071	0.21	N/A	0.0071 U
Phenanthrene	mg/kg	--	0.071 U	0.38	N/A	0.048 J	0.00068 J	0.62	0.014	0.28	0.019	0.073	2.0	N/A	0.0025 J
Phenol	mg/kg	250,000	0.072 U	0.074 U	N/A	0.067 UJ	0.071 U	0.051 J	0.073 U	0.073 U	0.074 U	0.067 U	0.071 U	N/A	0.071 U
Pyrene	mg/kg	23,000	0.044 J	0.19	N/A	0.031 J	0.0071 U	0.23	0.012	0.25	0.0081	0.05	4.5	N/A	0.0021 J
Polychlorinated Biphenyls															
Aroclor 1242	mg/kg	0.97	0.0534 U	N/A	N/A	0.0513 U	N/A	0.0548 U	N/A	0.0543 U	N/A	0.0513 U	N/A	N/A	0.0523 U
Aroclor 1254	mg/kg	0.97	0.0534 U	N/A	N/A	0.0513 U	N/A	0.0548 U	N/A	0.0543 U	N/A	0.0513 U	N/A	N/A	0.0523 U
Aroclor 1260	mg/kg	0.99	0.0534 U	N/A	N/A	0.0513 U	N/A	0.0548 U	N/A	0.0543 U	N/A	0.0513 U	N/A	N/A	0.0523 U
Aroclor 1268	mg/kg	--	0.0534 U	N/A	N/A	0.0513 U	N/A	0.0548 U	N/A	0.0543 U	N/A	0.0513 U	N/A	N/A	0.0523 U
PCBs (total)	mg/kg	0.97	0.0534 U	N/A	N/A	0.0513 U	N/A	0.0548 U	N/A	0.0543 U	N/A	0.0513 U	N/A	N/A	0.0523 U
Total Petroleum Hydrocarbons															
Diesel Range Organics	mg/kg	6,200	3,680	2,450	4.4 J	9.1 J	7.1 UJ	166	6.6 J	32	16.3	60	121	N/A	3.2 J
Gasoline Range Organics	mg/kg	6,200	14.3 U	11.7 U	N/A	6.7 U	13.8 U	11 U	11.7 U	15.7 U	9.4 U	7.2 U	9.9 U	N/A	10.4 U
Oil & Grease	mg/kg	6,200	4,350	4,620	N/A	283	631	231	340	739	297	712	1,300	N/A	418

Bold indicates detection

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

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

^ PAH compounds were analyzed via SIM

U: Not detected at the method detection limit (MDL) for the sample

J: Estimated value. The concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)

B: The analyte was detected above the reporting limit in the associated method blank

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

Table 1 - Sub-Parcel B13-3
Summary of Organics Detected in Soil

Parameter	Units	PAL	B13-081-SB-9	B13-113-SB-1	B13-113-SB-5	B13-114-SB-1	B13-114-SB-4	B13-115-SB-1	B13-115-SB-5	B13-116-SB-1	B13-116-SB-5	B13-117-SB-1	B13-117-SB-2	B13-118-SB-1	B13-118-SB-5	B13-118-SB-10
			8/26/2016	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/19/2025	8/19/2025
Volatile Organic Compounds																
2-Butanone (MEK)	mg/kg	190,000	0.13 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0041 U	N/A	N/A
Acetone	mg/kg	670,000	0.13 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0042 J	N/A	N/A
Benzene	mg/kg	5.1	0.022 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0002 U	N/A	N/A
Cyclohexane	mg/kg	27,000	0.13 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00034 J	N/A	N/A
Ethylbenzene	mg/kg	25	0.021 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00041 U	N/A	N/A
Toluene	mg/kg	47,000	0.033 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00041 U	N/A	N/A
Semi-Volatile Organic Compounds^																
1-Methylnaphthalene	mg/kg	--	N/A	0.081	0.0082	0.0019 J	0.008 U	0.14	0.1	0.0077 U	0.0012 J	0.12	0.045	0.0077 U	0.0067 J	0.0065 J
1,1-Biphenyl	mg/kg	200	0.073 U	0.45 U	0.43 U	0.42 U	0.45 U	0.21 J	0.55 U	0.44 U	0.44 U	0.058 J	0.036 J	0.44 U	0.42 U	0.44 U
2,4-Dimethylphenol	mg/kg	16,000	0.073 U	0.2 R	0.19 R	0.19 R	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U
2-Chloronaphthalene	mg/kg	60,000	0.073 U	0.2 U	0.19 U	0.19 U	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U
2-Methylnaphthalene	mg/kg	3,000	0.0072 U	0.18	0.022	0.0037 J	0.008 U	0.40	0.15	0.0077 U	0.0028 J	0.23	0.088	0.0077 U	0.0099	0.0059 J
2-Methylphenol	mg/kg	41,000	0.073 U	0.2 R	0.19 R	0.19 R	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.15 U	0.29 U	0.27 U	0.27 U	0.29 U	0.27 U	0.35 U	0.28 U	0.28 U	0.27 U	0.25 U	0.28 U	0.27 U	0.28 U
Acenaphthene	mg/kg	45,000	0.0072 U	0.0081 U	0.0074 U	0.0076 U	0.008 U	0.015 U	0.0096 U	0.0077 U	0.0078 U	0.026 J	0.03 J	0.0077 U	0.0073 U	0.0078 U
Acenaphthylene	mg/kg	45,000	0.0072 U	0.0023 J	0.0074 U	0.0076 U	0.008 U	0.021	0.0068 J	0.0077 U	0.0078 U	0.48	0.33	0.0077 U	0.0017 J	0.0078 U
Acetophenone	mg/kg	120,000	0.073 U	0.065 J	0.19 U	0.19 U	0.2 U	0.047 J	0.24 U	0.19 U	0.19 U	0.19 U	0.068 J	0.19 U	0.18 U	0.19 U
Anthracene	mg/kg	230,000	0.0072 U	0.0093	0.0074 U	0.0022 J	0.0008 J	0.23	0.021	0.0077 U	0.00074 J	0.20	0.21	0.0077 U	0.0043 J	0.0078 U
Benz[a]anthracene	mg/kg	21	0.0072 U	0.012	0.0013 J	0.0042 J	0.0038 J	0.26	0.042	0.0015 J	0.00093 J	1.2	0.94	0.0016 J	0.012	0.002 J
Benzaldehyde	mg/kg	120,000	0.073 U	0.09 J	0.25 U	0.25 U	0.26 U	0.25 U	0.32 U	0.25 U	0.26 U	0.25 U	0.23 U	0.26 U	0.24 U	0.25 U
Benzo[a]pyrene	mg/kg	2.1	0.0072 U	0.0073 J	0.0074 U	0.0026 J	0.0036 J	0.10	0.049	0.0012 J	0.0078 U	1.0	0.93	0.0011 J	0.011	0.0012 J
Benzo[b]fluoranthene	mg/kg	21	0.0072 U	0.013	0.0015 J	0.0068 J	0.0032 J	0.36	0.067	0.001 J	0.0078 U	1.6	1.2	0.0018 J	0.018	0.0022 J
Benzo[g,h,i]perylene	mg/kg	--	0.0072 U	0.009	0.00081 J	0.002 J	0.002 J	0.13	0.04	0.0014 J	0.0078 U	0.65	0.58	0.00096 J	0.0099	0.0012 J
Benzo[k]fluoranthene	mg/kg	210	0.0072 U	0.003 J	0.0074 U	0.0013 J	0.00092 J	0.045	0.02	0.0011 J	0.0078 U	0.47	0.4	0.00077 J	0.0045 J	0.00089 J
bis(2-Ethylhexyl)phtalate	mg/kg	160	0.073 U	0.2 U	0.19 U	0.19 U	0.12 J	0.093 J	0.24 U	0.19 U	0.19 U	0.19 U	0.78	0.19 U	0.18 U	0.19 U
Butylbenzylphtalate	mg/kg	1,200	N/A	0.2 U	0.19 U	0.19 U	0.072 J	0.062 J	0.24 U	0.19 U	0.19 U	0.19 U	0.19	0.19 U	0.18 U	0.19 U
Carbazole	mg/kg	--	0.073 U	0.2 U	0.19 U	0.19 U	0.2 U	0.30	0.24 U	0.19 U	0.19 U	0.022 J	0.071 J	0.19 U	0.18 U	0.19 U
Chrysene	mg/kg	2,100	0.0072 U	0.024	0.0023 J	0.012	0.0039 J	0.53	0.05	0.0013 J	0.0078 U	1.0	0.80	0.0014 J	0.013	0.0017 J
Dibenz[a,h]anthracene	mg/kg	2.1	0.0072 U	0.0024 J	0.0074 U	0.0076 U	0.008 U	0.049	0.011	0.0015 J	0.0078 U	0.20	0.17	0.0077 U	0.0026 J	0.0078 U
Dibenzofuran	mg/kg	--	N/A	0.2 U	0.18 U	0.18 U	0.2 U	0.12 J	0.24 U	0.19 U	0.19 U	0.04 J	0.057 J	0.19 U	0.18 U	0.19 U
Diethylphtalate	mg/kg	660,000	0.073 U	0.2 U	0.19 U	0.19 U	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U
Dimethylphtalate	mg/kg	--	N/A	0.2 U	0.19 U	0.19 U	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.13 J	0.19 U	0.18 U	0.19 U
Di-n-butylphtalate	mg/kg	82,000	0.073 U	0.2 U	0.19 U	0.19 U	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.039 J	0.19 U	0.18 U	0.19 U
Fluoranthene	mg/kg	30,000	0.00065 J	0.041	0.0033 J	0.012	0.0031 J	0.47	0.066	0.0011 J	0.00081 J	1.6	1.6	0.0022 J	0.025	0.0025 J
Fluorene	mg/kg	30,000	0.0072 U	0.0053 J	0.0074 U	0.0016 J	0.008 U	0.042	0.0075 J	0.0077 U	0.0078 U	0.052	0.04	0.0077 U	0.0018 J	0.0078 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.0072 U	0.0048 J	0.0074 U	0.0017 J	0.0016 J	0.08	0.041	0.0013 J	0.0078 U	0.79	0.68	0.0077 U	0.0087	0.0011 J
Napthalene	mg/kg	8.6	0.0072 U	0.16	0.027	0.0066 J	0.008 U	0.33	0.21	0.0077 U	0.0034 J	0.24	0.22	0.0019 J	0.01	0.004 J
Phenanthrene	mg/kg	--	0.0013 J	0.13	0.013	0.008	0.0018 J	0.90	0.10	0.0014 J	0.0021 J	0.61	0.65	0.0014 J	0.018	0.002 J
Phenol	mg/kg	250,000	0.073 U	0.2 R	0.19 R	0.19 R	0.2 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U
Pyrene	mg/kg	23,000	0.0072 U	0.033	0.0027 J	0.011	0.006 J	0.91	0.059	0.0022 J	0.0013 J	1.5	1.3	0.0025 J	0.031	0.0033 J
Polychlorinated Biphenyls																
Aroclor 1242	mg/kg	0.97	N/A	0.0592 U	N/A	0.0527 U	N/A	0.0102 J	N/A	0.0562 U	N/A	0.0209 J	N/A	0.0553 U	0.0551 U	0.057 U
Aroclor 1254	mg/kg	0.97	N/A	0.0592 U	N/A	0.373	N/A	0.0225 J	N/A	0.0562 U	N/A	0.0305 J	N/A	0.0553 U	0.0551 U	0.057 U
Aroclor 1260	mg/kg	0.99	N/A	0.0592 U	N/A	0.0527 U	N/A	0.0114 J	N/A	0.0562 U	N/A	0.0211 J	N/A	0.0553 U	0.0551 U	0.057 U
Aroclor 1268	mg/kg	--	N/A	0.0592 U	N/A	0.0527 U	N/A	0.0548 U	N/A	0.0562 U	N/A	0.0221 J	N/A	0.0553 U	0.0551 U	0.057 U
PCBs (total)	mg/kg	0.97	N/A	0.0592 U	N/A	0.373	N/A	0.0441 J	N/A	0.0562 U	N/A	0.0946 J	N/A	0.0553 U	0.0551 U	0.057 U
Total Petroleum Hydrocarbons																
Diesel Range Organics	mg/kg	6,200	7.4	14 J	31 J	700	35 J	140	43 J	3.6 J	5.8 J	74	1,000	13 J	18 J	25 J
Gasoline Range Organics	mg/kg	6,200	16.8 U	2.8 U	2.6 U	2.8 U	3 U	2.8 U	3.7 U	2.6 U	2.8 U	1.7 J	2.5 U	0.73 J	2.7 U	2.8 U
Oil & Grease	mg/kg	6,200	474	244 U	228 U	536	518	835	1,400	469	361	771	577	2,190	580	485

Bold indicates detection

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

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

^ PAH compounds were analyzed via SIM

U: Not detected at the method detection limit (MDL) for the sample

J: Estimated value. The concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)

B: The analyte was detected above the reporting limit in the associated method blank

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

Table 2 - Sub-Parcel B13-3
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	B13-022-SB-1	B13-022-SB-4	B13-022-SB-10	B13-050-SB-1	B13-050-SB-5	B13-051-SB-1	B13-051-SB-7	B13-056-SB-1	B13-056-SB-5	B13-056-SB-10
			8/24/2016	8/24/2016	8/24/2016	8/24/2016	8/24/2016	8/24/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016
Metals												
Aluminum	mg/kg	1,100,000	38,900	22,600	N/A	4,890	36,000	5,980	39,100	2,520	36,500	N/A
Antimony	mg/kg	470	2.6 U	2.6 U	N/A	2.2 J	2.6 UJ	2.7 U	2.3 U	2.4 U	2.1 U	N/A
Arsenic	mg/kg	3.0	2.2 U	13.4	1.9	14.1 J	2.2 U	14.6	1.9 U	2 U	7.0	3.9
Barium	mg/kg	220,000	563	241	N/A	63.2	614	71	552	31.1	377	N/A
Beryllium	mg/kg	2,300	4.7	2.8	N/A	0.62 J	2.9	0.3 J	3.3	0.8 U	4.1	N/A
Cadmium	mg/kg	100	0.32 B	0.53 B	N/A	0.2 B	0.36 B	0.61 B	0.25 B	0.4 B	0.87 B	N/A
Chromium	mg/kg	1,800,000	21.1	129	N/A	36.1 J	27.1	566	32.7	220	173	N/A
Chromium VI	mg/kg	6.3	0.31 B	0.4 B	N/A	0.28 B	0.3 B	0.3 B	0.31 B	0.35 B	0.35 B	N/A
Cobalt	mg/kg	350	1.4 J	11.3	N/A	18.1	1.4 J	8.8	4.6	37.9	15.7	N/A
Copper	mg/kg	47,000	6.2	51.2	N/A	28.3	2.6 J	37.4	11.5	10.9	125	N/A
Iron	mg/kg	820,000	13,900	120,000	N/A	170,000	11,500	151,000	32,700	46,500	78,700	N/A
Lead	mg/kg	800	4.3	38.5	N/A	23.5 J	2.4	8.1	4.5	2.8	75.6	N/A
Manganese	mg/kg	26,000	5,820	4,350	N/A	5,900	8,880	13,700	6,940	4,020	11,900	N/A
Mercury	mg/kg	350	0.0049 J	0.005 J	N/A	0.021 J	0.11 U	0.01 J	0.1 U	0.11 U	0.11 U	N/A
Nickel	mg/kg	22,000	3.5 J	57.1	N/A	39.5 J	1.7 J	36.9	4.5 J	865	34.9	N/A
Selenium	mg/kg	5,800	3.5 U	2.1 J	N/A	3.2 U	3.5 U	3.5 U	3 U	3.2 U	2.6 B	N/A
Silver	mg/kg	5,800	2.6 U	2.6 U	N/A	2.4 U	2.6 U	2.7 U	2.3 U	2.4 U	2.1 U	N/A
Thallium	mg/kg	12	8.7 U	8.7 U	N/A	8 U	8.7 U	7.8 J	7.5 U	3.5 J	6.9 J	N/A
Vanadium	mg/kg	5,800	26.7	196	N/A	48.9 J	317	775	169	264	438	N/A
Zinc	mg/kg	350,000	11.9	97.3	N/A	76.1 J	4.3 UJ	39.6	11.7	23.5	221	N/A
Other												
Cyanide, Total	mg/kg	150	0.94	0.32 J	N/A	1.3 J-	0.046 J	0.37 J	0.34 J	0.58 U	3.6	N/A

Bold indicates detection
Values in red indicate a detection exceedance of the Project Action Limit (PAL)
N/A: This parameter was not analyzed for this sample.

Notes:
U: Not detected at the method detection limit (MDL) for the sample
J: Estimated value. The concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)
J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
B: The analyte was detected above the reporting limit in the associated method blank
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte

Table 2 - Sub-Parcel B13-3
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	B13-057-SB-1	B13-057-SB-5	B13-057-SB-10	B13-081-SB-1	B13-081-SB-9	B13-113-SB-1	B13-113-SB-5	B13-114-SB-1	B13-114-SB-4	B13-115-SB-1	B13-115-SB-5
			9/1/2016	9/1/2016	9/1/2016	8/26/2016	8/26/2016	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025
Metals													
Aluminum	mg/kg	1,100,000	4,500	24,500	N/A	31,500	28,200	6,780	2,320	28,300	16,400	17,300	12,300
Antimony	mg/kg	470	2.4 U	2.7 U	N/A	2.3 U	2.7 U	24.3 U	22.6 U	21.6 U	4.62 U	9.16 U	28.1 U
Arsenic	mg/kg	3.0	11.8	3.5	2.2 U	1.9 U	8.7	2.35 J	4.51 U	4.32 U	0.554 J	2.4	22.1
Barium	mg/kg	220,000	1,030	431	N/A	827	661	36.5	27.8	368	223	226	54.2
Beryllium	mg/kg	2,300	0.59 J	1.8	N/A	4.6	2.3	0.36 J	2.26 U	4.15	2.07	1.88	0.835 J
Cadmium	mg/kg	100	0.48 J	0.42 J	N/A	0.34 B	0.48 B	0.557 J	0.318 J	4.32 U	0.925 U	0.364 J	3.26 J
Chromium	mg/kg	1,800,000	239	327	N/A	17	118	963	500	7.15	11.2	292	73.8
Chromium VI	mg/kg	6.3	0.37 B	0.4 B	N/A	0.3 B	0.52 B	5.38	4.99	0.911 U	0.973 U	0.926 U	1.19 U
Cobalt	mg/kg	350	15.5	5.8	N/A	0.59 J	7.7	9.73 U	9.02 U	8.64 U	1.85 U	1.96 J	26.4
Copper	mg/kg	47,000	100	92.3	N/A	6	24.2	18.2	9.54	2.32 J	3.34	18.6	99.5
Iron	mg/kg	820,000	304,000	85,500	N/A	18,900	78,400	130,000	110,000	1,880	2,300	31,800	178,000
Lead	mg/kg	800	46	133	N/A	2.5	2.6	24.3 U	22.6 U	48.6	5.82	30.7	769
Manganese	mg/kg	26,000	31,600	10,200	N/A	8,400	10,300	22,000	13,800	4,020	2,200	13,400	2,010
Mercury	mg/kg	350	0.016 J	0.24	N/A	0.1 U	0.11 U	0.087 U	0.076 U	0.08 U	0.081 U	0.082 U	0.172
Nickel	mg/kg	22,000	81.3	34.7	N/A	3.8 B	16.9	9.3 J	11.3 U	10.8 U	1.26 J	6.82	23.5
Selenium	mg/kg	5,800	3.2 U	3.6 U	N/A	3.1 U	2.7 J	9.73 U	9.02 U	1.47 B	1.85 U	3.66 U	11.2 U
Silver	mg/kg	5,800	4.0	2.7 U	N/A	2.3 U	2.7 U	2.43 U	2.26 U	2.16 U	0.462 U	0.916 U	3.75
Thallium	mg/kg	12	8 U	9.1	N/A	7.8 U	9.9	9.73 U	9.02 U	8.64 U	1.85 U	3.66 U	11.2 U
Vanadium	mg/kg	5,800	171	650	N/A	132	754	811	402	8.43	8.03	1,260	162
Zinc	mg/kg	350,000	60.1	189	N/A	7.1	8.2	36	7.01 B	109	11.5	132	2,880
Other													
Cyanide, Total	mg/kg	150	0.21 J	0.65 J	N/A	0.1 J	0.23 J	0.59 J-	1.1 UJ	7.7 J-	1.8 J-	3.5 J-	1.4 J-

Bold indicates detection
Values in red indicate a detection exceedance of the Project Action Limit (PAL)
N/A: This parameter was not analyzed for this sample.

Notes:
U: Not detected at the method detection limit (MDL) for the sample
J: Estimated value. The concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)
J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
B: The analyte was detected above the reporting limit in the associated method blank
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte

Table 2 - Sub-Parcel B13-3
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	B13-115-SB-10	B13-116-SB-1	B13-116-SB-5	B13-117-SB-1	B13-117-SB-2	B13-117-SB-10	B13-118-SB-1	B13-118-SB-5	B13-118-SB-10
			8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/15/2025	8/19/2025	8/19/2025	8/19/2025
Metals											
Aluminum	mg/kg	1,100,000	N/A	18,900	26,900	15,400	3,950	N/A	28,400	43,400	46,300
Antimony	mg/kg	470	N/A	4.6 U	23.2 U	9.01 U	8.29 U	N/A	22.1 U	11 U	11.5 U
Arsenic	mg/kg	3.0	3.21	1.79	4.64 U	1.18 J	6.75	8.71	3.77 J	2.2	1.33 J
Barium	mg/kg	220,000	N/A	249	298	178	55.5	N/A	528	285	220
Beryllium	mg/kg	2,300	N/A	1.11	2.97	1.56	0.363 J	N/A	2.94	5.36	5.25
Cadmium	mg/kg	100	N/A	0.053 J	4.64 U	0.141 J	0.178 J	N/A	0.539 J	2.19 U	2.3 U
Chromium	mg/kg	1,800,000	N/A	14.3	4.42 J	395	96	N/A	99.3	56.4	16.1
Chromium VI	mg/kg	6.3	N/A	0.943 U	0.944 U	0.45 J	0.856 U	N/A	0.934 U	0.898 U	0.94 U
Cobalt	mg/kg	350	N/A	2.23	9.29 U	0.694 J	8.04	N/A	6.02 J	4.39 U	4.6 U
Copper	mg/kg	47,000	N/A	7.38	4.64 U	17.8	17.8	N/A	75.8	6.67	5.52
Iron	mg/kg	820,000	N/A	17,900	1,150	27,500	28,900	N/A	42,000	7,450	3,180
Lead	mg/kg	800	N/A	4.6 U	23.2 U	11.2	6.24 J	N/A	88.4	11 U	11.5 U
Manganese	mg/kg	26,000	N/A	2,350	4,980	8,750	6,890	N/A	5,050	10,800	4,410
Mercury	mg/kg	350	N/A	0.083 U	0.079 U	0.086 U	0.082 U	N/A	0.084 U	0.08 U	0.095 U
Nickel	mg/kg	22,000	N/A	4.48	11.6 U	8.42	7.23	N/A	22.6	4.35 J	5.76 U
Selenium	mg/kg	5,800	N/A	0.866 B	9.29 U	3.6 U	3.32 U	N/A	8.84 U	4.39 U	2.11 B
Silver	mg/kg	5,800	N/A	0.46 U	2.32 U	0.901 U	0.829 U	N/A	2.21 U	1.1 U	1.15 U
Thallium	mg/kg	12	N/A	1.84 U	9.29 U	3.6 U	3.32 U	N/A	8.84 U	8.78 U	4.6 U
Vanadium	mg/kg	5,800	N/A	208	53.2	1,250	1,060	N/A	423	27.8	9.08
Zinc	mg/kg	350,000	N/A	4.6 U	23.2 U	39.8	14.4	N/A	425	3.72 J	11.5 U
Other											
Cyanide, Total	mg/kg	150	N/A	4.4 J-	1.2 UJ	1.1 J-	1.1 J-	N/A	1.2 J-	1.6 J-	1.1 J-

Bold indicates detection
Values in red indicate a detection exceedance of the Project Action Limit (PAL)
N/A: This parameter was not analyzed for this sample.

Notes:
U: Not detected at the method detection limit (MDL) for the sample
J: Estimated value. The concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)
J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
B: The analyte was detected above the reporting limit in the associated method blank
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte

Table 3 - Sub-Parcel B13-3
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	B13-006-PZ 9/9/2016	B13-049-PZ 9/7/2016	B13-076-PZ 9/7/2016	B13-115-GW 8/15/2025	B13-117-GW 8/15/2025
Volatile Organic Compounds							
Acetone	µg/L	14,000	10 U	10 U	10 U	2.6 J	3.8 J
Benzene	µg/L	5.0	1.0 U	1.0 U	1.0 U	0.5 U	0.32 J
Carbon disulfide	µg/L	810	1.8	1.6	1.3	5 U	5 U
Toluene	µg/L	1,000	0.38 B	0.6 J	0.95 J	0.75 U	0.75 U
Semi-Volatile Organic Compounds[^]							
1,4-Dioxane	µg/L	0.46	0.15	0.1	0.11	3 U	3 U
2-Methylnaphthalene	µg/L	36	0.22	0.048 B	0.1	0.07 J	0.04 J
Acenaphthene	µg/L	530	0.085 J	0.043 J	0.079 J	0.1 U	0.1 U
Acenaphthylene	µg/L	530	0.028 J	0.029 J	0.1 U	0.1 U	0.1 U
Anthracene	µg/L	1,800	0.039 J	0.1 U	0.018 J	0.03 J	0.08 J
Benz(a)anthracene	µg/L	0.03	0.10 U	0.10 U	0.10 U	0.04 J	0.11
Benzo(a)pyrene	µg/L	0.20	0.10 U	0.10 U	0.10 U	0.03 J	0.09 J
Benzo(b)fluoranthene	µg/L	0.25	0.10 U	0.10 U	0.10 U	0.07	0.15
Benzo(ghi)perylene	µg/L	--	0.10 U	0.10 U	0.10 U	0.04 J	0.08 J
Benzo(k)fluoranthene	µg/L	2.5	0.10 U	0.10 U	0.10 U	0.1 U	0.05 J
Carbazole	µg/L	--	0.27 J	1 U	1 U	2 U	2 U
Chrysene	µg/L	25	0.1 U	0.0097 J	0.0079 J	0.04 J	0.09 J
Fluoranthene	µg/L	800	0.084 J	0.084 J	0.092 J	0.06 J	0.16
Fluorene	µg/L	290	0.079 J	0.041 J	0.061 J	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	µg/L	0.25	0.10 U	0.10 U	0.10 U	0.07 J	0.12
Naphthalene	µg/L	0.12	4.9	0.8	0.74	0.1 J	0.07 J
Pentachlorophenol	µg/L	1.0	1.1 J	1 J	1.1 J	10 U	10 U
Phenanthrene	µg/L	--	0.12	0.093 J	0.18	0.08	0.11
Phenol	µg/L	5,800	0.27 J	1 U	1 U	5 U	5 U
Pyrene	µg/L	120	0.068 J	0.055 J	0.062 J	0.06 J	0.14
TPH/Oil & Grease							
Diesel Range Organics	µg/L	47	172 J	50.1 J	59.4 J	40 U	74
Gasoline Range Organics	µg/L	47	200 U	76.4 J	200 U	40 U	40 U
Oil & Grease	µg/L	47	1,300 J	4,820 U	4,820 U	5,200	4,000 U

Detections in bold

[^] PAH compounds were analyzed via SIM

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

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

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

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

Table 4 - Sub-Parcel B13-3
Summary of Inorganics Detected in Groundwater

Parameter	Units	PAL	B13-006-PZ	B13-049-PZ	B13-076-PZ	B13-115-GW	B13-117-GW
			9/9/2016	9/7/2016	9/7/2016	8/15/2025	8/15/2025
Metals, Dissolved							
Aluminum, Dissolved	µg/L	20,000	90.4	107	343	N/A	N/A
Barium, Dissolved	µg/L	2,000	71.3	38.1	44.5	N/A	N/A
Chromium, Dissolved	µg/L	100	5 U	1.7 J	1.4 J	N/A	N/A
Manganese, Dissolved	µg/L	430	6.6	1 J	1 J	N/A	N/A
Selenium, Dissolved	µg/L	50	5.2 J	8 U	8 U	N/A	N/A
Vanadium, Dissolved	µg/L	86	29.6	40.4	4.1 J	N/A	N/A
Metals, Total							
Aluminum, Total	µg/L	20,000	N/A	N/A	N/A	799	2,300
Arsenic, Total	µg/L	10	N/A	N/A	N/A	1.181	2.132
Barium, Total	µg/L	2,000	N/A	N/A	N/A	99.82	141.1
Beryllium, Total	µg/L	4.0	N/A	N/A	N/A	0.5 U	0.2947 J
Cadmium, Total	µg/L	5.0	N/A	N/A	N/A	0.2 U	0.109 J
Chromium, Total	µg/L	100	N/A	N/A	N/A	2.765	15.31
Chromium, VI	µg/L	0.035	N/A	N/A	N/A	717*	10 U
Cobalt, Total	µg/L	6.0	N/A	N/A	N/A	0.6688	1.395
Copper, Total	µg/L	1,300	N/A	N/A	N/A	1.562	12.63
Iron, Total	µg/L	14,000	N/A	N/A	N/A	1,080	2,750
Lead, Total	µg/L	15	N/A	N/A	N/A	11.6	20.56
Manganese, Total	µg/L	430	N/A	N/A	N/A	307.7	956.6
Nickel, Total	µg/L	390	N/A	N/A	N/A	2 U	2.91
Selenium, Total	µg/L	50	N/A	N/A	N/A	3.6 J	6.56
Vanadium, Total	µg/L	86	N/A	N/A	N/A	19.9	105.7
Zinc, Total	µg/L	6,000	N/A	N/A	N/A	34.42	37.06
Other							
Cyanide, Total	µg/L	200	6.3 J	4.1 J	10 U	13.0	9.0

Detections in bold

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

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

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

N/A: Not Analyzed

* Hexavalent Chromium value is anomalous. See RADWP text for details.

Table 5 - Sub-Parcel B13-3
Cumulative Vapor Intrusion Criteria Comparison

				B13-006-PZ		B13-049-PZ		B13-076-PZ		B13-115-GW		B13-117-GW	
Parameter	Type	Organ Systems	VI Screening Criteria (ug/L)	Conc. (ug/L)	Cancer Risk	Conc. (ug/L)	Cancer Risk	Conc. (ug/L)	Cancer Risk	Conc. (ug/L)	Cancer Risk	Conc. (ug/L)	Cancer Risk
Cancer Risk													
1,4-Dioxane	SVOC		130,000	0.15	1.2E-11	0.1	7.7E-12	0.11	8.5E-12	3 U	0	3 U	0
Naphthalene	SVOC		200	4.9	2.5E-07	0.8	4.0E-08	0.74	3.7E-08	0.1	5.0E-09	0.07	3.5E-09
Cumulative Vapor Intrusion Cancer Risk				2E-07		4E-08		4E-08		5E-09		4E-09	
Non-Cancer Hazard													
				Conc. (ug/L)	Non-Cancer HQ	Conc. (ug/L)	Non-Cancer HQ	Conc. (ug/L)	Non-Cancer HQ	Conc. (ug/L)	Non-Cancer HQ	Conc. (ug/L)	Non-Cancer HQ
Cyanide	Other	None Specified	3.5	6.3 J	1.8	4.1 J	1.2	10 U	0	13.0	3.7	9.0	2.6
Cumulative Vapor Intrusion Non-Cancer Hazard				2		1		0		4		3	

Highlighted values indicate exceedances of the cumulative vapor intrusion criteria

TCR > 1E-05

THI > 1

Conc. = Concentration

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

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

**Table 6 - Sub-Parcel B13-3
COPC Screening Analysis**

Parameter	CAS#	Location of Max Result	Max Detection (mg/kg)	Final Flag	Min Detection (mg/kg)	Average Detection (mg/kg)	Total Samples	Frequency of Detection (%)	Cancer TR=1E-06 (mg/kg)	Non-Cancer HQ=0.1 (mg/kg)	COPC?
1,1-Biphenyl	92-52-4	B13-115-SB-1	0.21	J	0.020	0.09	25	20.00	410	20	no
2,4-Dimethylphenol	105-67-9	B13-051-SB-1	0.083		0.034	0.06	25	8.00		1,600	no
2-Butanone (MEK)	78-93-3	B13-022-SB-1	0.0045	J	0.0045	0.005	7	14.29		19,000	no
2-Chloronaphthalene	91-58-7	B13-056-SB-1	0.11		0.110	0.11	25	4.00		6,000	no
2-Methylnaphthalene	91-57-6	B13-051-SB-1	0.49		0.0028	0.12	25	72.00		300	no
2-Methylphenol	95-48-7	B13-051-SB-1	0.05	J	0.0500	0.05	25	4.00		4,100	no
Acenaphthene	83-32-9	B13-057-SB-5	2.3		0.00057	0.27	25	36.00		4,500	no
Acenaphthylene	208-96-8	B13-117-SB-1	0.48		0.00071	0.08	25	60.00			no
Acetone	67-64-1	B13-022-SB-1	0.022		0.0042	0.01	7	42.86		67,000	no
Acetophenone	98-86-2	B13-117-SB-2	0.07	J	0.05	0.06	25	12.00		12,000	no
Aluminum	7429-90-5	B13-118-SB-10	46,300		2,320	21,674	25	100.00		110,000	no
Anthracene	120-12-7	B13-057-SB-5	0.52		0.0007	0.10	25	68.00		23,000	no
Antimony	7440-36-0	B13-050-SB-1	2.2	J	2.2	2.20	25	4.00		47	no
Aroclor 1242	53469-21-9	B13-117-SB-1	0.0209	J	0.0102	0.02	14	14.29	0.95		no
Aroclor 1254	11097-69-1	B13-114-SB-1	0.373		0.0225	0.14	14	21.43	0.97	1.5	no
Aroclor 1260	11096-82-5	B13-117-SB-1	0.0211	J	0.0114	0.02	14	14.29	0.99		no
Arsenic	7440-38-2	B13-115-SB-5	22.1		0.554	6.44	30	70.00	3.0	48	YES (C)
Barium	7440-39-3	B13-057-SB-1	1,030		27,800	328	25	100.00		22,000	no
Benz[a]anthracene	56-55-3	B13-057-SB-5	4.4		0.00093	0.32	26	92.31	21		no
Benzaldehyde	100-52-7	B13-051-SB-1	0.16		0.029	0.09	23	13.04	820	12,000	no
Benzene	71-43-2	B13-056-SB-5	0.029		0.022	0.03	7	28.57	5.1	42	no
Benzo[a]pyrene	50-32-8	B13-057-SB-5	9.6		0.0011	0.62	26	80.77	2.1	22	YES (C)
Benzo[b]fluoranthene	205-99-2	B13-057-SB-5	12		0.001	0.73	26	88.46	21		no
Benzo[g,h,i]perylene	191-24-2	B13-057-SB-5	5.5		0.00081	0.35	25	84.00			no
Benzo[k]fluoranthene	207-08-9	B13-057-SB-5	3.3		0.00077	0.24	25	84.00	210		no
Beryllium	7440-41-7	B13-118-SB-5	5.36		0.3	2.47	25	92.00	6,900	230	no
bis(2-Ethylhexyl)phthalate	117-81-7	B13-117-SB-2	0.78		0.016	0.18	25	24.00	160	1,600	no
Butylbenzylphthalate	85-68-7	B13-117-SB-2	0.19		0.062	0.11	13	23.08	1,200	16,000	no
Cadmium	7440-43-9	B13-115-SB-5	3.26	J	0.053	0.63	25	40.00	9300	10	no
Carbazole	86-74-8	B13-115-SB-1	0.3		0.022	0.10	25	24.00			no

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

COPC = Constituent of Potential Concern

C = Compound was identified as a cancer COPC

TR = Target Risk

NC = Compound was identified as a non-cancer COPC

HQ = Hazard Quotient

*PCBs (total) include the sum of all detected aroclor mixtures, including those without RSLs (e.g. Aroclor 1262, Aroclor 1268) which are not displayed.

^Lead is assessed separately through the ALM and IEUBK models.

†Chromium was evaluated against the RSL for chromium (III) insoluble salts

**Table 6 - Sub-Parcel B13-3
COPC Screening Analysis**

Parameter	CAS#	Location of Max Result	Max Detection (mg/kg)	Final Flag	Min Detection (mg/kg)	Average Detection (mg/kg)	Total Samples	Frequency of Detection (%)	Cancer TR=1E-06 (mg/kg)	Non-Cancer HQ=0.1 (mg/kg)	COPC?
Chromium†	7440-47-3	B13-113-SB-1	963		4.42	177	25	100.00		180,000	no
Chromium VI	18540-29-9	B13-113-SB-1	5.38		0.45	3.61	25	12.00	20	100	no
Chrysene	218-01-9	B13-057-SB-5	4.7		0.0013	0.36	25	88.00	2,100		no
Cobalt	7440-48-4	B13-056-SB-1	37.9		0.59	9.67	25	72.00	1,900	35	YES (NC)
Copper	7440-50-8	B13-056-SB-5	125		2.32	32.4	25	96.00		4,700	no
Cyanide, Total	57-12-5	B13-114-SB-1	7.7		0.046	1.53	25	88.00		120	no
Cyclohexane	110-82-7	B13-118-SB-1	0.00034	J	0.00034	0.00034	7	14.29		2,700	no
Dibenz[a,h]anthracene	53-70-3	B13-057-SB-5	1.8		0.0014	0.16	26	61.54	2.1		no
Diethylphthalate	84-66-2	B13-081-SB-1	0.024	J	0.024	0.02	25	4.00		66,000	no
Dimethylphthalate	131-11-3	B13-117-SB-2	0.13	J	0.13	0.13	13	7.69			no
Di-n-butylphthalate	84-74-2	B13-022-SB-4	0.37	J	0.039	0.20	25	8.00		8,200	no
Ethylbenzene	100-41-4	B13-081-SB-9	0.021	J	0.004	0.01	7	28.57	25	2,000	no
Fluoranthene	206-44-0	B13-057-SB-5	4.4		0.00065	0.37	25	96.00		3,000	no
Fluorene	86-73-7	B13-057-SB-5	0.27		0.00083	0.04	25	56.00		3,000	no
Indeno[1,2,3-c,d]pyrene	193-39-5	B13-057-SB-5	5.7		0.0011	0.40	26	76.92	21		no
Iron	7439-89-6	B13-057-SB-1	304,000		1150	67,726	25	100.00		82,000	YES (NC)
Lead^	7439-92-1	B13-115-SB-5	769		2.4	68.6	25	76.00		80	YES (NC)
Manganese	7439-96-5	B13-057-SB-1	31,600		2010	8,907	25	100.00		2,600	YES (NC)
Mercury	7439-97-6	B13-057-SB-5	0.240		0.0049	0.07	25	28.00		35	no
Naphthalene	91-20-3	B13-115-SB-1	0.33		0.0019	0.11	25	80.00	8.6	59	no
Nickel	7440-02-0	B13-056-SB-1	865		1.26	63.2	25	80.00	64,000	2,200	no
PCBs (total)*	1336-36-3	B13-114-SB-1	0.373		0.0441	0.17	14	21.43	0.94		no
Phenanthrene	85-01-8	B13-057-SB-5	2		0.00068	0.24	25	96.00			no
Phenol	108-95-2	B13-051-SB-1	0.051	J	0.051	0.05	25	4.00		25,000	no
Pyrene	129-00-0	B13-057-SB-5	4.5		0.0013	0.40	25	92.00		2,300	no
Selenium	7782-49-2	B13-081-SB-9	2.7	J	0.866	1.85	25	20.00		580	no
Silver	7440-22-4	B13-057-SB-1	4		3.75	3.88	25	8.00		580	no
Thallium	7440-28-0	B13-081-SB-9	9.9		3.5	7.44	25	20.00		1.2	YES (NC)
Toluene	108-88-3	B13-081-SB-9	0.033	J	0.019	0.03	7	28.57		4,700	no
Vanadium	7440-62-2	B13-115-SB-1	1,260		8.03	385	25	100.00		580	YES (NC)
Zinc	7440-66-6	B13-115-SB-5	2,880		3.72	210	25	84.00		35,000	no

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

COPC = Constituent of Potential Concern

C = Compound was identified as a cancer COPC

TR = Target Risk

NC = Compound was identified as a non-cancer COPC

HQ = Hazard Quotient

*PCBs (total) include the sum of all detected aroclor mixtures, including those without RSLs (e.g. Aroclor 1262, Aroclor 1268) which are not displayed.

^Lead is assessed separately through the ALM and IEUBK models.

†Chromium was evaluated against the RSL for chromium (III) insoluble salts

**Table 7 - Sub-Parcel B13-3
Assessment of Lead**

Exposure Unit	Surface/Sub-Surface	Maximum Concentration (mg/kg)	Arithmetic Mean (mg/kg)
EU1 (12.8 ac.)	Surface	88.4	24.5
	Sub-Surface	769	85.0
	Pooled	769	56.2
EU1 -EXP (13.8 ac.)	Surface	88.4	24.6
	Sub-Surface	769	85.1
	Pooled	769	56.0

Table 8 - Sub-Parcel B13-3
Soil Exposure Point Concentrations

Parameter	EU1 (12.8 ac.)					
	EPCs - Surface Soils		EPCs - Sub-Surface Soils		EPCs - Pooled Soils	
	EPC Type	EPC (mg/kg)	EPC Type	EPC (mg/kg)	EPC Type	EPC (mg/kg)
Arsenic	95% KM Bootstrap t UCL	19.8	95% KM (t) UCL	7.78	95% GROS Adjusted Gamma UCL	8.10
Benzo[a]pyrene	95% KM Bootstrap t UCL	1.23	99% KM (Chebyshev) UCL	0.95	97.5% KM (Chebyshev) UCL	0.52
Cobalt	95% KM (t) UCL	15.1	95% KM (t) UCL	11.4	Gamma Adjusted KM-UCL	13.6
Iron	95% Adjusted Gamma UCL	148,376	95% Student's-t UCL	79,532	95% Adjusted Gamma UCL	95,219
Manganese	95% Student's-t UCL	12,266	95% Student's-t UCL	9,703	95% Student's-t UCL	9,994
Thallium	Maximum Value	7.80	Maximum Value	9.90	95% KM (t) UCL	5.11
Vanadium	95% Student's-t UCL	794	95% Student's-t UCL	495	95% Student's-t UCL	564

Bold indicates maximum value (only 2 detections)

EU = Exposure Unit

EPC = Exposure Point Concentration

UCL = Upper Confidence Limit

Sd = Standard Deviation

KM = Kaplan-Meier

Table 8 - Sub-Parcel B13-3
Soil Exposure Point Concentrations

Parameter	EU1-EXP (13.8 ac.)					
	EPCs - Surface Soils		EPCs - Sub-Surface Soils		EPCs - Pooled Soils	
	EPC Type	EPC (mg/kg)	EPC Type	EPC (mg/kg)	EPC Type	EPC (mg/kg)
Arsenic	Gamma Adjusted KM-UCL	10.4	95% KM (t) UCL	7.34	95% GROS Adjusted Gamma UCL	7.78
Benzo[a]pyrene	95% KM Bootstrap t UCL	1.07	95% KM Bootstrap t UCL	11.9	99% KM (Chebyshev) UCL	4.18
Cobalt	95% KM (t) UCL	14.0	95% KM (t) UCL	10.9	95% KM (t) UCL	10.8
Iron	95% Adjusted Gamma UCL	176,076	95% Student's-t UCL	84,596	95% Adjusted Gamma UCL	109,374
Manganese	95% Adjusted Gamma UCL	17,133	95% Student's-t UCL	9,382	95% Student's-t UCL	11,171
Thallium	Maximum Value	7.80	Maximum Value	9.90	95% KM (t) UCL	5.26
Vanadium	95% Student's-t UCL	687	95% Student's-t UCL	488	95% Adjusted Gamma UCL	622

Bold indicates maximum value (only 2 detections)

EU = Exposure Unit

EPC = Exposure Point Concentration

UCL = Upper Confidence Limit

Sd = Standard Deviation

KM = Kaplan-Meier

**Table 9 - Sub-Parcel B13-3
Risk Ratios
Composite Worker Surface Soil**

Parameter	Target Organs	EU1 (12.8 ac.)				
		EPC (mg/kg)	Composite Worker			
			RSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	19.8	3.0	480	6.6E-06	0.04
Benzo[a]pyrene	Developmental	1.23	2.1	220	5.9E-07	0.006
Cobalt	Respiratory; Thyroid	15.1	1,900	350	7.9E-09	0.04
Iron	Gastrointestinal	148,376		820,000		0.2
Manganese	Nervous	12,266		26,000		0.5
Thallium	Dermal	7.80		12		0.7
Vanadium	Dermal; Respiratory	794		5,800		0.1
					7E-06	↓

RSLs were obtained from the EPA Regional Screening Levels for Composite Worker Soil with TR=1E-6 and THQ=1.0

EPC: Exposure Point Concentration
 HQ: Hazard Quotient
 HI: Hazard Index
 Bold indicates Maximum Value

Total HI	Cardiovascular	0
	Dermal	1
	Developmental	0
	Gastrointestinal	0
	Nervous	0
	Respiratory	0
	Thyroid	0

**Table 10 - Sub-Parcel B13-3
Risk Ratios
Composite Worker Subsurface Soil**

Parameter	Target Organs	EU1 (12.8 ac.)				
		EPC (mg/kg)	Composite Worker			
			RSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	7.78	3.0	480	2.6E-06	0.02
Benzo[a]pyrene	Developmental	0.95	2.1	220	4.5E-07	0.004
Cobalt	Respiratory; Thyroid	11.4	1,900	350	6.0E-09	0.03
Iron	Gastrointestinal	79,532		820,000		0.1
Manganese	Nervous	9,703		26,000		0.4
Thallium	Dermal	9.90		12		0.8
Vanadium	Dermal; Respiratory	495		5,800		0.09
					3E-06	↓

RSLs were obtained from the EPA Regional Screening Levels for Composite Worker Soil with TR=1E-6 and THQ=1.0

EPC: Exposure Point Concentration

HQ: Hazard Quotient

HI: Hazard Index

Bold indicates Maximum Value

Total HI	Cardiovascular	0
	Dermal	1
	Developmental	0
	Gastrointestinal	0
	Nervous	0
	Respiratory	0
	Thyroid	0

Table 11 - Sub-Parcel B13-3
Risk Ratios
Composite Worker Pooled Soil

Parameter	Target Organs	EU1 (12.8 ac.)				
		EPC (mg/kg)	Composite Worker			
			RSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	8.10	3.0	480	2.7E-06	0.02
Benzo[a]pyrene	Developmental	0.52	2.1	220	2.5E-07	0.002
Cobalt	Respiratory; Thyroid	13.6	1,900	350	7.2E-09	0.04
Iron	Gastrointestinal	95,219		820,000		0.1
Manganese	Nervous	9,994		26,000		0.4
Thallium	Dermal	5.11		12		0.4
Vanadium	Dermal; Respiratory	564		5,800		0.1
					3E-06	↓

RSLs were obtained from the EPA Regional Screening Levels for Composite Worker Soil with TR=1E-6 and THQ=1.0

EPC: Exposure Point Concentration
 HQ: Hazard Quotient
 HI: Hazard Index

Total HI	Cardiovascular	0
	Dermal	1
	Developmental	0
	Gastrointestinal	0
	Nervous	0
	Respiratory	0
	Thyroid	0

Table 12 - Sub-Parcel B13-3
Risk Ratios
Construction Worker Surface Soil

85 Day			EU1-EXP (13.8 ac.)			
Parameter	Target Organs	EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	10.4	44.5	282	2.3E-07	0.04
Benzo[a]pyrene	Developmental	1.07	50.3	19.2	2.1E-08	0.06
Cobalt	Respiratory; Thyroid	14.0	9,067	2683	1.5E-09	0.005
Iron	Gastrointestinal	176,076		707,475		0.2
Manganese	Nervous	17,133		11,468		1
Thallium	Dermal	7.80		40.4		0.2
Vanadium	Dermal; Respiratory	687		4,641		0.1
					3E-07	↓

SSLs calculated using equations in 2002 EPA Supplemental Guidance

Guidance Equation Input Assumptions:

- 5 cars/day (2 tons/car)
- 5 trucks/day (20 tons/truck)
- 3 meter source depth thickness

EPC: Exposure Point Concentration

HQ: Hazard Quotient

HI: Hazard Index

Bold indicates Maximum Value

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Respiratory	0
	Thyroid	0

Table 13 - Sub-Parcel B13-3
Risk Ratios
Construction Worker Subsurface Soil

85 Day			EU1-EXP (13.8 ac.)			
Parameter	Target Organs	EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	7.34	44.5	282	1.6E-07	0.03
Benzo[a]pyrene	Developmental	11.9	50.3	19.2	2.4E-07	0.6
Cobalt	Respiratory; Thyroid	10.9	9,067	2683	1.2E-09	0.004
Iron	Gastrointestinal	84,596		707,475		0.1
Manganese	Nervous	9,382		11,468		0.8
Thallium	Dermal	9.90		40.4		0.2
Vanadium	Dermal; Respiratory	488		4,641		0.1
					4E-07	↓

SSLs calculated using equations in 2002 EPA Supplemental Guidance

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

EPC: Exposure Point Concentration

HQ: Hazard Quotient

HI: Hazard Index

Bold indicates Maximum Value

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	1
	Gastrointestinal	0
	Nervous	1
	Respiratory	0
	Thyroid	0

Table 14 - Sub-Parcel B13-3
Risk Ratios
Construction Worker Pooled Soil

85 Day			EU1-EXP (13.8 ac.)			
Parameter	Target Organs	EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	7.78	44.5	282	1.7E-07	0.03
Benzo[a]pyrene	Developmental	4.18	50.3	19.2	8.3E-08	0.2
Cobalt	Respiratory; Thyroid	10.8	9,067	2683	1.2E-09	0.004
Iron	Gastrointestinal	109,374		707,475		0.2
Manganese	Nervous	11,171		11,468		1
Thallium	Dermal	5.26		40.4		0.1
Vanadium	Dermal; Respiratory	622		4,641		0.1
					3E-07	↓

SSLs calculated using equations in 2002 EPA Supplemental Guidance

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

EPC: Exposure Point Concentration

HQ: Hazard Quotient

HI: Hazard Index

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Respiratory	0
	Thyroid	0

APPENDIX A



September 2, 2025

Maryland Department of Environment
1800 Washington Boulevard
Baltimore MD, 21230
Attention: Ms. Jennifer Sohns

**Subject: Request to Enter Temporary CHS Review
Tradepoint Atlantic Sub-Parcel B13-3**

Dear Ms. Sohns:

The conduct of any environmental assessment and cleanup activities on the Tradepoint Atlantic property, as well as any associated development, is subject to the requirements outlined in the following agreements:

- Administrative Consent Order (ACO) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the Maryland Department of the Environment (effective September 12, 2014); and
- Settlement Agreement and Covenant Not to Sue (SA) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the United States Environmental Protection Agency (effective November 25, 2014).

On September 11, 2014, Tradepoint Atlantic submitted an application to the Maryland Department of the Environment's (Department) Voluntary Cleanup Program (VCP).

In consultation with the Department, Tradepoint Atlantic affirms that it desires to accelerate the assessment, remediation, and redevelopment of certain sub-parcels within the larger site due to current market conditions. To that end, the Department and Tradepoint Atlantic agree that the Controlled Hazardous Substance (CHS) Act (Section 7-222 of the Environment Article) and the CHS Response Plan (COMAR 26.14.02) shall serve as the governing statutory and regulatory authority for completing the development activities on Sub-Parcel B13-3 and complement the statutory requirements of the Voluntary Cleanup Program (Section 7-501 of the Environment Article). Upon submission of a Site Response and Development Work Plan and completion of the remedial activities for the sub-parcel, the Department shall issue a "No Further Action" letter upon a recordation of an environmental covenant describing any necessary land use controls for the specific sub-parcel. At such time that all the sub-parcels within the larger parcel have completed remedial activities, Tradepoint Atlantic shall submit to the Department a request for issuing a Certificate of Completion (COC) as well as all pertinent information concerning completion of remedial activities conducted on the parcel. Once the VCP has completed its review of the



submitted information it shall issue a COC for the entire parcel described in TradePoint Atlantic's VCP application.

Alternatively, TradePoint Atlantic, or other entity may elect to submit an application for a specific sub-parcel and submit it to the VCP for review and acceptance. If the application is received after the cleanup and redevelopment activities described in this work plan are implemented and a No Further Action letter is issued by the Department pursuant to the CHS Act, the VCP shall prepare a No Further Requirements Determination for the sub-parcel.

If TradePoint Atlantic or other entity has not carried out cleanup and redevelopment activities described in the work plan, the cleanup and redevelopment activities may be conducted under the oversight authority of either the VCP or the CHS Act, so long as those activities comport with this work plan.

Engineering and institutional controls approved as part of this Site Response and Development Work Plan shall be described in documentation submitted to the Department demonstrating that the exposure pathways on the sub-parcel are addressed in a manner that protects public health and the environment. This information shall support TradePoint Atlantic's request for the issuance of a COC for the larger parcel.

Please do not hesitate to contact TradePoint Atlantic for further information.

Thank you,

Matthew Newman

Environmental Director
TRADEPOINT ATLANTIC
6995 Bethlehem Boulevard, Suite 100
Baltimore, Maryland 21219
T 443.649.5063 C 443.791.9046
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APPENDIX B

**Construction Worker Soil Screening Levels
Maximum Allowable Work Day Exposure
Calculation Spreadsheet - Sub-Parcel B13-3**

Description	Variable	Value
Days worked per week	DW	5
Exposure duration (yr)	ED	1
Hours worked per day	ET	8
A/constant (unitless) - particulate emission factor	Aconst	12.9351
B/constant (unitless) - particulate emission factor	Bconst	5.7383
C/constant (unitless) - particulate emission factor	Cconst	71.7711
Dispersion correction factor (unitless)	FD	0.185
Days per year with at least .01" precipitation	P	130
Target hazard quotient (unitless)	THQ	1
Body weight (kg)	BW	80
Averaging time - noncancer (yr)	ATnc	1
Soil ingestion rate (mg/d)	IR	330
Skin-soil adherence factor (mg/cm2)	AF	0.3
Skin surface exposed (cm2)	SA	3300
Event frequency (ev/day)	EV	1
Target cancer risk (unitless)	TR	01E-06
Averaging time - cancer (yr)	ATc	70
A/constant (unitless) - volatilization	Aconstv	2.4538
B/constant (unitless) - volatilization	Bconstv	17.566
C/constant (unitless) - volatilization	Cconstv	189.0426
Dry soil bulk density (kg/L)	Pb	1.5
Average source depth (m)	ds	3
Soil particle density (g/cm3)	Ps	2.65
Total soil porosity	Lpore/Lsoil	0.43
Air-filled soil porosity	Lair/Lsoil	0.28

Construction Worker Soil Screening Levels
Maximum Allowable Work Day Exposure
Calculation Spreadsheet - Sub-Parcel B13-3

Area of site (ac)	Ac	13.8
Overall duration of construction (wk/yr)	EW	17
Exposure frequency (day/yr)	EF	85
Cars per day	Ca	5
Tons per car	CaT	2
Trucks per day	Tru	5
Tons per truck	TrT	20
Mean vehicle weight (tons)	w	11
Derivation of dispersion factor - particulate emission factor (g/m2-s per kg/m3)	Q/Csr	14.8
Overall duration of construction (hr)	tc	2,856
Overall duration of traffic (s)	Tt	2,448,000
Surface area (m2)	AR	55,847
Length (m)	LR	236
Distance traveled (km)	ΣVKT	201
Particulate emission factor (m3/kg)	PEFsc	90,488,726
Derivation of dispersion factor - volatilization (g/m2-s per kg/m3)	Q/Csa	7.99
Total time of construction (s)	Tcv	2,448,000

→ EU1-EXP

Input

Calculation

Chemical	RfD & RfC Sources	[^] Ingestion SF (mg/kg-day) ⁻¹	[^] Inhalation Unit Risk (ug/m ³) ⁻¹	[^] Subchronic RfD (mg/kg-day)	[^] Subchronic RfC (mg/m ³)	[^] GIABS	Dermally Adjusted RfD (mg/kg-day)	[^] ABS	[^] RBA	[*] Dia	[*] Diw	[*] Henry's Law Constant (unitless)	[*] Kd	[*] Koc	DA	Volatilization Factor - Unlimited Reservoir (m ³ /kg)	Carcinogenic Ingestion/ Dermal SL (SLing/der)	Carcinogenic Inhalation SL (SLinh)	Carcinogenic SL (mg/kg)	Non-Carcinogenic Ingestion/ Dermal SL (SLing/der)	Non-Carcinogenic Inhalation SL (SLinh)	Non-Carcinogenic SL (mg/kg)
Arsenic, Inorganic	I/C	1.50E+00	4.30E-03	3.00E-04	1.50E-05	1	3.00E-04	0.03	0.6			-	2.90E+01				44.6	18,977	44.5	287	17,486	282
Benzo[a]pyrene	I	1.00E+00	6.00E-04	3.00E-04	2.00E-06	1	3.00E-04	0.13	1	4.80E-02	5.60E-06	1.87E-05	3.54E+03	5.90E+05	2.37E-11	8.21E+5	52.4	1,222	50.3	225	21.0	19.2
Cobalt	P	-	9.00E-03	3.00E-03	2.00E-05	1	3.00E-03	0.01	1			-	4.50E+01					9.067	9.067	3,032	23,314	2,683
Iron	P	-	-	7.00E-01	-	1	7.00E-01	0.01	1			-	2.50E+01							707.475		707.475
Manganese (Non-diet)	I	-	-	2.40E-02	5.00E-05	0.04	9.60E-04	0.01	1			-	6.50E+01							14,277	58,285	11,468
Thallium (Soluble Salts)	P	-	-	4.00E-05	-	1	4.00E-05	0.01	1	-		-	7.10E+01							40.4		40.4
Vanadium and Compounds	A	-	-	1.00E-02	1.00E-04	0.026	2.60E-04	0.01	1			-	1.00E+03							4,833	116,571	4,641

*chemical specific parameters found in Chemical Specific Parameters Spreadsheet at <https://www.epa.gov/risk/regional-screening-levels-rsls>
[^]chemical specific parameters found in Unpaved Road Traffic calculator at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search
I: chemical specific parameters found in the IRIS at <https://www.epa.gov/iris>
C: chemical specific parameters found in Cal EPA at <https://www.dtsc.ca.gov/AssessingRisk>
A: chemical specific parameters found in Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLs) at https://www.atsdr.cdc.gov/mrls/pdfs/atsdr_mrls.pdf
P: chemical specific parameters found in the Database of EPA PPRTVs at <https://hhpprtv.ornl.gov/quickview/pprtv.php>

APPENDIX C

Sparrows Point Development - PPE Standard

Operational Procedure, Revision 3

Planning, Tracking/Supervision, Enforcement, and Documentation

Planning

- Response and Development Work Plan (RDWP) for each individual redevelopment sub-parcel identifies and documents site conditions.
- RDWP is reviewed and approved by regulators.
- Contractor HASP to address site-specific conditions and PPE requirements:
 - Contractor H&S professional to sign-off on PPE requirements for site workers;
 - Job Safety Analysis (JSA) to be performed for ground intrusive work.
- Project Environmental Professional (EP) assigned to each construction project – monitors project during environmentally sensitive project phases and is available to construction contractor on an as needed basis. EP responsibilities include the following:
 - Dust monitoring
 - Routine ground intrusive breathing space air monitoring
 - Soil tracking
 - Water handling oversight
 - Ground intrusive work observation
 - Notification for unexpected conditions
- Pre-construction meeting identifies EP roles and responsibilities and reviews site conditions.
- Contractor to perform job-site HazCom. HazCom to be addressed in Contractor HASP and include:
 - PPE requirements,
 - Exposure time limits,
 - Identification of chemicals of concern and potential effects of over-exposure (adverse reactions),
 - Methods and routes of potential exposure.
- All personnel that will be performing ground intrusive work within impacted soils shall sign-off on HazCom.
- If, based on a thorough review of Site conditions, it is expected that construction workers will have the potential to encounter materials considered hazardous waste under RCRA or DOT regulations, HAZWOPER-trained personnel will be utilized.

Tracking/Supervision

- Contractor to record any day that there is ground intrusive work and confirm that proper PPE is being worn.
- EP will note ground intrusive work on daily work sheets and perform at least one spot check per day.
- EP will log on daily work sheets PPE compliance for all intrusive work areas at least once per day.

- EP to take example photos of Exclusion Zones/Contamination Reduction Zones periodically.

Work Zones Delineation

- Exclusion Zone – The Exclusion Zones will include the areas proposed for excavation or with active trenches, excavations, or ground intrusive work, at a minimum. Personnel working within the exclusion zone will be required to wear Modified Level D PPE as described in this SOP. EP to take example photos of Exclusion Zones/Contamination Reduction Zones periodically. The Exclusion Zones will be identified each work day.
- Contamination Reduction Zone – This work zone is located outside of the exclusion zone, but inside of the limits of development (LOD). The Contamination Reduction Zone will be located adjacent to the Exclusion Zone, and all personal decontamination including removal of all disposable PPE/removal of soil from boots will be completed in the Contamination Reduction Zone.

Documentation

- Contractor HASP and HazCom.
- Contractor ground intrusive tracking record.
- HASP and HazCom sign-in sheets.
- EP pre-con memos.
- EP daily work sheets.
- Records documenting intrusive work and proper PPE use to be provided in completion report.

Enforcement

- Non-compliance of PPE requirements will result in disciplinary action up to and including prohibition from working on Sparrows Point.

Unknown and/or Unexpected Conditions

If unknown and/or unexpected conditions are encountered during the project that the EP determines to have a reasonable potential to significantly impact construction worker health and safety, the following will be initiated:

1. Job stoppage,
2. TPA and MDE notification,
3. Re-assessment of conditions.

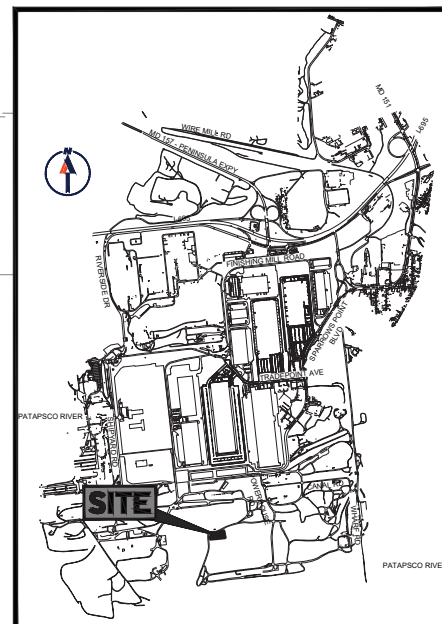
Work will not continue until EP has cleared the area. If hazardous waste is identified, a HAZWOPER contractor will be brought in to address. The approved contingency plan will be implemented, where appropriate.

Modified Level D PPE

Modified Level D PPE will include, at a minimum, overalls such as polyethylene-coated Tyvek or clean washable cloth overalls, latex (or similar) disposable gloves (when working in wet/chemical surroundings) or work gloves, steel-toe/steel-shank high ankle work boots with taped chemical-protective over-boots (as necessary), dust mask, hard hat, safety glasses with

side shields, and hearing protection (as necessary). If chemical-protective over-boots create increased slip/trip/fall hazardous, then standard leather or rubber work boots could be used, but visible soils from the sides and bottoms of the boots must be removed upon exiting the Exclusion Zone.

APPENDIX D



811
Know what's below
Call before you dig
ALWAYS CALL 811
It's fast. It's free. It's the way to stay safe.

**CONSTRUCTION
DOCUMENTS**

FOR

 **TRADEPOINT
ATLANTIC**

JD FIELDS

**ORE PIER ROAD
BALTIMORE, MD 21219
TM 111, GRID 14, PARCEL 318
15TH ELECTION DISTRICT
7TH COUNCILMANIC DISTRICT
BALTIMORE COUNTY**

BOHLER

**901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204**
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MD@BohlerEng.com

SHEET TITLE:

**REVISED
LAYOUT
EXHIBIT**

SHEET NUMBER:

2

ORG. DATE - 06/26/2025

Aug 04, 2025
C:\BOHLERCAD_USERDATA\TEMP\AC PUBLISH_10840\P-CIVL-EXHA-MD A250053.00----->LAYOUT: CONCEPT B (2)

1. THE PROPOSED GRADING/DOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY AND COMPLIES WITH ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY ZONING ORDINANCE. HOWEVER, DUE TO BUILDING TYPED AND LAYOUT, SOME FIELD ADJUSTMENTS MAY BE REQUIRED. ALL CHANGES MUST COMPLY WITH THE ABOVE MENTIONED REQUIREMENTS.
2. ALL SWALES HAVE BEEN DESIGNED BY THE ENGINEER TO CONVEY RUNOFF ACCORDING TO BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS.
3. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE CRITICAL AREA BUFFER AND FOREST BUFFER, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY.
4. STORMWATER MANAGEMENT WILL BE PROVIDED BY A DEDUCTION FROM THE REGIONAL FACILITY CREDIT BANK AT A 2.25:1 RATIO (45 CREDITS FOR 2.02 ACRES OF IMPERVIOUS AREA), NO FURTHER SURETIES WILL BE REQUIRED.
5. A FOREST CONSERVATION SPECIAL VARIANCE WAS APPROVED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY TO ALLOW THE REMOVAL OF THIRTY FIVE SPECIES TREES. MITIGATION SHALL BE ADDRESSED THROUGH PLANTING AT PROJECT SANDLOT.

ALL UTILITIES LOCATIONS ARE PRIVATE UNLESS OTHERWISE NOTED.

THE SUBJECT DEVELOPMENT AREA IS LOCATED IN FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, BALTIMORE COUNTY, MARYLAND (UNINCORPORATED AREAS) PANEL V55 OF 580", MAP NUMBER 240010555G, MAP REVISED MAY 5, 2014, AND PLAN PREPARED BY PAI, DEVI, PLANS REVIEWED OCTOBER 21, 2016, PER MAP 0555G, DATED SEPTEMBER 28, 2009.

3. ADDITIONAL EXISTING UTILITIES AND SITE FEATURES LOCATED WITHIN THE LIMIT OF DISTURBANCE BUT NOT TO BE REMOVED OR RELOCATED MAY REQUIRE REMOVAL OR RELOCATION AS DIRECTED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY TRADEPOINT DEVELOPMENT.

4. EXISTING UTILITIES NOTED AS "TO REMAIN" WITHIN THE LIMIT OF DISTURBANCE MUST BE MAINTAINED TO PROVIDE SERVICE FOR THE PROPOSED OR ADJACENT DEVELOPMENT.

5. EXISTING GRADES SHOWN ON THIS PLAN ARE FROM THE TPA TRIMBLE STATUS AERIAL SURVEY ON 7/29/2005. IF ACTUAL EXISTING GRADES DIFFER FROM WHAT IS SHOWN ON

6. EXISTING MANHOLE, CLEANOUT, AND VALVE COVERS WITHIN THE LIMIT OF DISTURBANCE NOT IDENTIFIED AS "TO BE REMOVED" ARE TO BE ADJUSTED TO MEET FINAL GRADES.

7. LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. SOURCE INFORMATION FROM PLANS AND MARKINGS HAVE BEEN COMBINED WITH OBSERVED EVIDENCE OF UTILITIES TO DEVELOP A NEW LOCATION OF UNDERGROUND UTILITIES. THEREAFTER, LACKING SUFFICIENT DATA TO EXACTLY LOCATE UNDERGROUND UTILITIES, LOCATIONS CANNOT ACCURATELY, COMPLETELY, AND RELIABLY BE DEPICTED, WHEREFORE, NO MORE DETAILED INFORMATION IS REQUIRED. THE CLIENT IS ADVISED THAT EXCAVATION MAY BE REQUIRED.

8. SPOTS NOTED AS A HAVE BEEN INTERPRETED FROM EXISTING TOPOGRAPHY. CONTRACTOR IS TO VERIFY THESE SPOT ELEVATIONS PRIOR TO CONSTRUCTION AND NOTIFY BOLLNER IN WRITING IF THE ACTUAL ELEVATIONS DIFFER.

GRADING 1 OF 6

ORG. DATE - 06/26/2025

APPENDIX E

Tradepoint Atlantic Facility

Hillis-Carnes Engineering Associates, Inc. Environmental Professional Roles

Hillis-Carnes Engineering Associates, Inc. (HCEA) is acting as the Environmental Professional (EP) for development of the Tradepoint Atlantic (TPA) facility. The EP's roles are as follows.

A. Monitoring of Excavated Soils

HCEA will monitor the environmental condition of soil as it is being excavated, including, but not limited to, the following example activities, as applicable: a) site grading and site preparation; b) excavation of underground utility trenches for new utilities; and c) excavation for installation of inlet/manholes. The monitoring includes the following:

- 1) Soils will be monitored with a calibrated photoionization detector (PID) for evidence of volatile organic compounds (VOCs). Evidence of VOCs is sustained PID readings greater than 10 metered units on the PID;
- 2) Soils will be inspected for visual indication of environmental impact (i.e., staining apparently due to impact);
- 3) Soils will be inspected for olfactory indication of environment impact (i.e., odors apparently due to impact);
- 4) Soils will be inspected for the presence of waste materials; and/or
- 5) Soils will be inspected for evidence of non-aqueous phase liquids (NAPL, which could potentially be drained or otherwise extracted from the soil).

If soils meeting any of the criteria above are encountered, HCEA will coordinate with the General Contractor and their Subcontractor(s) to segregate those materials by placing the materials on plastic sheeting (6-mil minimum) and covering the material with plastic sheeting at the end of each work day. Each stockpile of contaminated soil will not exceed 500 cubic yards. HCEA will coordinate with the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program (VCP) Project Manager for further evaluation of this material (e.g., for potential re-use on-parcel, for off-parcel disposal, etc.)

If NAPL is encountered in the utility trench, procedures described in the NAPL Contingency Plan attached to this document will be followed. Refer to the NAPL Contingency Plan for additional details. The NAPL Contingency Plan is included in the Response and Development Work Plan (RADWP) or the Limited Scope Project Plan, as applicable.

If the contractor encounters soils with unusual or strong odors, the contractor should inform the EP in order to evaluate the conditions of the soil.

B. Protocol for Impacted Soils

If soils meeting any of the criteria presented in the Section A are encountered, HCEA will coordinate with the appropriate parties to segregate those materials.

HCEA will then coordinate with TPA and the MDE's VCP Project Manager for further evaluation of this material for: a) potential placement on the parcel on which the project is occurring; b) potential placement on another parcel within the TPA facility; c) potential disposal at Grey's Landfill; or d) potential disposal at an off-terminal location.

Evaluation of the material could include the laboratory analysis of the material for the following parameters: Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO); TPH-Gasoline Range Organics (TPH-GRO); Oil & Grease; Polychlorinated Biphenyls (PCBs); and Priority Pollutant Metals. The specifics of such an evaluation will be provided by HCEA to TPA and the MDE's VCP via a written sampling and analysis plan prior to any work conducted for the evaluation.

C. Protocol for Non-Impacted Soils

Excavated materials that do not meet the criteria presented in Section A will be stockpiled. No excavated materials may be replaced in a trench or excavation as backfill unless monitored/inspected and approved by the MDE. Similarly, separate sampling and approval by the MDE will be required to allow excavated materials to be placed within other areas of the TPA facility outside of the project boundary. In such instances, a sampling Work Plan that includes a description of the material, an estimated volume, and proposed sampling parameters will need to be submitted to the MDE for approval. The resulting analytical data will also be submitted to the MDE to determine the suitability of the material for its specified use. HCEA will coordinate with appropriate parties to facilitate removal of excess materials from the project site and will document approximate quantities and placement locations within the TPA facility.

D. Air Monitoring

HCEA will be on-site conducting daily air monitoring for total dust. At a minimum, this will consist of monitoring for visible dust. When sustained visual dust is observed, HCEA will request that the General Contractor implement methods for supplementing standard dust suppression methods to address dust levels. Such methods could include, but will not necessarily be limited to, an increase in the frequency of water trucks spraying the area, covering of soil piles with plastic sheeting, decrease drop heights of soil from excavation equipment, etc. If visible dust is sustained after additional methods are implemented to reduce dust, real-time dust monitoring equipment may be used.

If real-time dust monitoring is implemented, HCEA's on-site personnel will utilize a monitor to provide mass dust readings throughout the work day within the work area, or immediately downwind of the work area, depending on site conditions and activity. In addition to the work area monitoring, monitors will be stationed daily at two of the four perimeters of the parcel. The perimeters will correspond to those that are upwind and downwind of the work area, based on the predicted prevailing wind direction for that day. The prevailing wind direction will be assessed during the day and the positioning of the upwind and downwind monitors will be adjusted if there is a substantial shift in the prevailing wind direction.

When dust readings are sustained above the total dust action limit of 3.0 milligrams per cubic meter of air (mg/m³), HCEA will coordinate with the General Contractor to implement additional methods for supplementing the standard dust suppression methods to address the dust levels.

E. Monitoring of Dewatering Activity

If dewatering becomes necessary during the Development Phase of the project, the water must be conveyed to the Humphrey Creek Waste Water Treatment Plant (HCWWTP). HCEA will document dewatering activity. During dewatering activities, if gross contamination is observed, the EP will contact the HCWWTP Operator to confirm if laboratory analysis is required, as well as potential analytes. If laboratory analysis of water produced by the dewatering becomes necessary, HCEA will collect water samples for transport to an analytical laboratory. All dewatering activities being conveyed to the HCWWTP via drain lines or direct purge into the Tin Mill Canal will require the use of a filter bag prior to discharge.

F. Monitoring of Worker Breathing Zone

In the event of unexpected/non-standard conditions that appear to warrant monitoring for organic vapor concentrations in the breathing zone of workers in the excavation trench, HCEA will notify TPA and monitoring will be conducted as described in this section. Such conditions include, but are not necessarily limited to, the following: encountering NAPL; unexpected/non-standard odors detected by the EP; and unexpected/non-standard odors or other conditions reported to the EP by the General Contractor or their Subcontractor(s). The monitoring will include attaching tubing to the sample port of the PID and the lowering of the tubing into the excavation trench when an individual(s) will be/is/are physically enter(ing) the trench and where the unexpected/non-standard condition(s) has(have) been reported.

In the absence of NAPL, if the PID readings are greater than 5 metered units above background in the breathing zone for a 3-minute period, personnel will stop work, retreat from the work area, and allow time (at least 15 minutes) for vapors to dissipate. If monitoring indicates that concentrations still exceed 5 metered units after 15 minutes, HCEA will advise that work not continue without further evaluation.

G. Monitoring of PPE Standard Operation Procedures

An Interim Personal Protective Equipment (PPE) Standard Operational Procedure (SOP) has been prepared for the Sparrows Point Development. HCEA will monitor the implementation of the PPE SOP in accordance with the attachment. This monitoring will include, but is not limited to, at least one daily spot check for implementation of PPE SOP where there is ground intrusive work, with documentation of observations.

H. Documentation of Placement of Clean Fill

HCEA will monitor the placement of 24 inches of clean fill where clean fill is required. Generally, 18 inches of clean fill followed by 6 inches of topsoil will constitute the 24 inches of required clean fill. At approximate 10,000 square-foot intervals, HCEA will document the placement of clean fill, including photo-documentation of a measuring device against the clean fill profile. Photo-documentation will also be utilized to document that the placement of clean fill began immediately at the curbside. After placement, a hand auger will be utilized to evaluate the thickness of clean fill. Hand augering will occur once per every 10,000 square feet of clean fill placement.

I. Confined Spaces and Other Health and Safety Considerations

Any protocols or procedures related to Permitted Confined Spaces or Non-Permitted Confined Spaces, or any other aspects related to worker health and safety, will be the responsibility of the General Contractor.

J. MDE Notification

In the event of unexpected/non-standard conditions, HCEA will notify TPA so that TPA can notify the MDE's VCP Project Manager of such condition(s). Such conditions include, but are not necessarily limited to, the following: conditions warranting monitoring for organic vapor concentrations in the breathing zone of workers in the excavation trench; previously undiscovered contamination; and previously undiscovered storage tanks or other oil-related issues.

K. Close-Out Documentation

HCEA will provide close-out documentation for the project, in accordance with the spreadsheet that is attached. Note that HCEA will be requesting certain documents from the Contractor(s) for this task including, but not necessarily limited to, the following: a) disposal manifests for disposal of impacted soil outside of terminal property and/or Grey's Landfill; b) clean fill affidavits for any material that is imported onto the parcel; and c) truck tickets for any material that is imported onto the parcel.

L. Points of Contact:

TPA: Mr. Pete Haid: 732-841-7935; phaid@tradepointatlantic.com
Mr. Matthew Newman, P.E.: 443-791-9046; mnewman@tradepointatlantic.com
HCEA: Mr. Keith Progin: 443-250-9467; kprogin@hcea.com
MDE VCP: Ms. Barbara Brown: 410-537-3212; barbara.brown1@maryland.gov

Attachments: Sparrows Point Development Interim PPE Standard Operational Procedure (January 20, 2019)
Documentation Requirements for VCP Completion Reports (November 19, 2018)
Utility Excavation NAPL Contingency Plan – Revision 4 (June 19, 2017)

Documentation Requirements for VCP Completion Reports

Documentation	Responsible Party
General:	
Pre-construction meeting - memo with list of attendees and attached EP Roles Summary	EP
Daily Construction Observation Reports	EP
Soil Excavations:	
Soil Screening: PID Readings, Visual and Olfactory Observations (general statement if under 10 ppm; maximum readings if above 10 ppm)	EP
Impacted Soils: Stockpile Locations & Stabilization Measures	EP
Impacted Soils: Waste Characterization Sample Results or MDE inspection results	EP
Impacted Soils: Disposal Manifests (for off-parcel, off-Terminal or at Greys Landfill)	EP
Impacted Soils: Narrative for on-site placement and approximate quantity (in daily report)	EP
Non-Impacted Soils: Off-parcel disposal - Narrative of approximate quantity and location	EP
Non-Impacted Soils: On-parcel placement - Narrative of location for large quantities only (basins)	EP
Dust monitoring, as applicable:	
Monitoring equipment (manufacturer and model)	EP
Monitoring locations and results (appended to daily report)	EP
Summary/Log of dust suppression actions (included in daily report)	EP
Construction:	
As-Built Drawings, including: - Minimum thickness of all layers: clean fill, subbase, asphalt layers, floor slabs - Grading and compaction specifications - Detention pond construction - Landscaping details	Contractor
Construction Photos (of milestones; note-worthy occurrences; minimum of monthly)	EP
Over excavation of utility trenches (if needed per NAPL Contingency Plan)	EP
VCP-Approved Clean Fill:	
Source Documentation (e.g., facility affidavit for clean material)	EP
Analytical Results (in absence of facility affidavit)	EP
Truck Tickets for Imported VCP-Approved Clean Fill	EP
Water Management:	
Grading Permit	Contractor
Groundwater Discharge Approvals and locations (as applicable)	EP
Collection/Reporting of samples of water removed from excavations	EP
Documentation of what is sent to WWTP or Outfalls	EP
Health and Safety protocols:	
HASP Acknowledgement (HASP cover page and management approval page)	Contractor

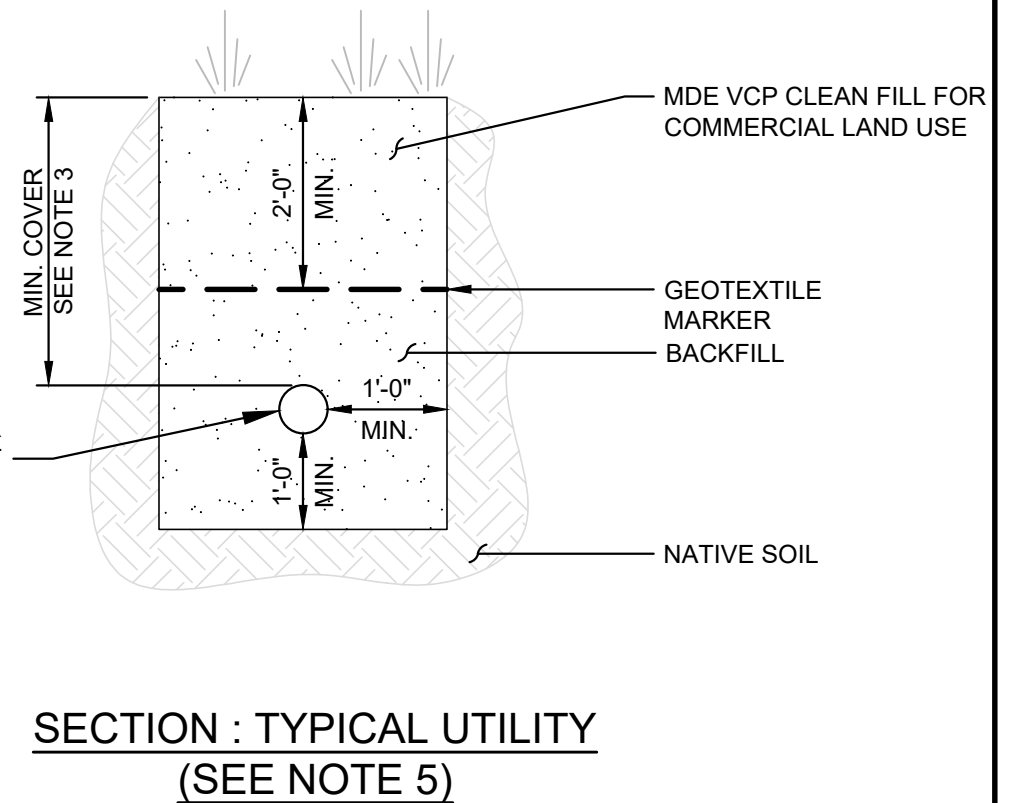
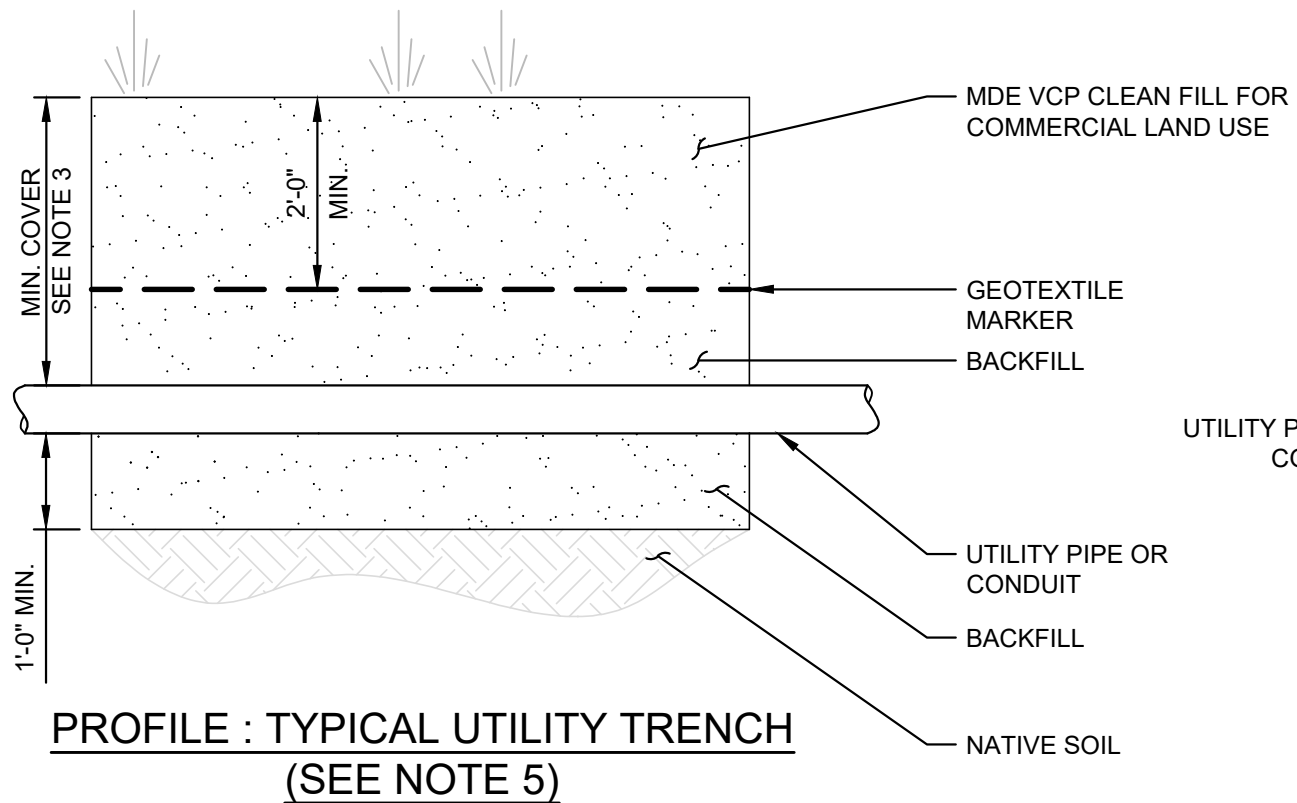
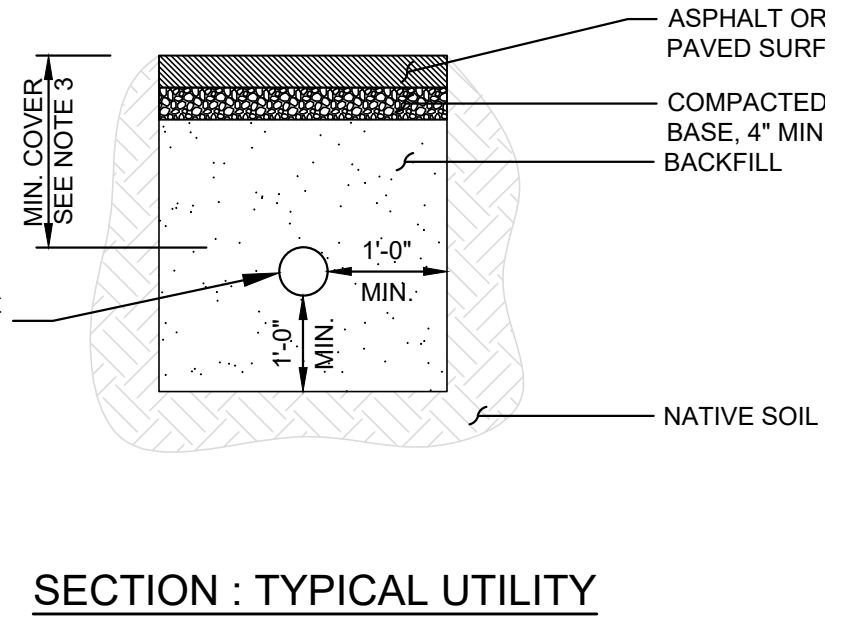
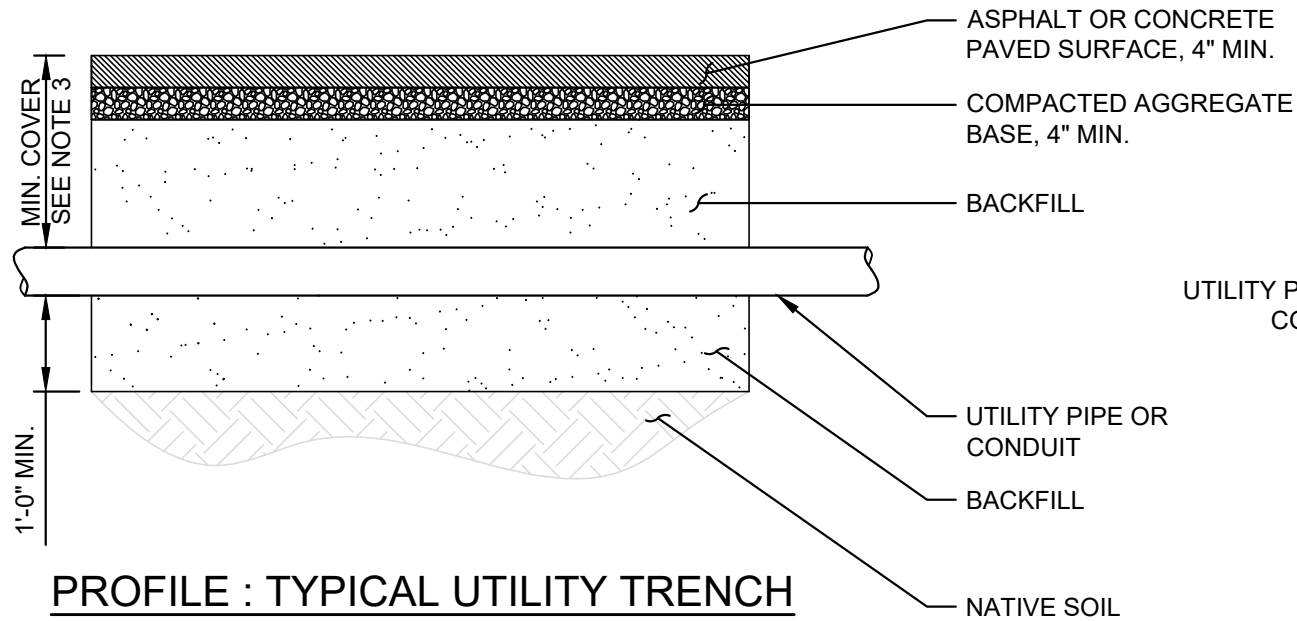
TPA = Tradepoint Atlantic

EP = Environmental Professional

APPENDIX F

GENERAL NOTES:

- 1. ALL PIPES OR CONDUIT SHALL BE LEAK-PROOF AND WATERTIGHT. ALL JOINTS SHALL BE SEALED OR GASKETED.
- 2. ALL PIPES SHALL BE PROPERLY PLACED AND BEDDED TO PREVENT MISALIGNMENT OR LEAKAGE. PIPE BEDDING SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE THE POTENTIAL FOR ACCUMULATION OF WATER AND CONCENTRATED INFILTRATION.
- 3. MINIMUM COVER ABOVE UTILITY SHALL BE BASED ON SPECIFIC UTILITY REQUIREMENTS.
- 4. TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.
- 5. FOR ANY UTILITY SEGMENT WHICH GOES THROUGH AN AREA WHICH IS DESIGNATED TO RECEIVE A LANDSCAPED CAP, THE UPPER 2 FEET OF BACKFILL MUST MEET THE REQUIREMENTS OF MDE VCP CLEAN FILL FOR COMMERCIAL LAND USE. IN THIS CASE THE MDE VCP CLEAN FILL WILL BE UNDERLAIN BY A GEOTEXTILE MARKER FABRIC. UTILITY SEGMENTS WHICH GO THROUGH AREAS WHICH DO NOT REQUIRE CAPPING OR ARE DESIGNATED TO RECEIVED A PAVED CAP WILL BE BACKFILLED WITH MATERIALS APPROVED BY MDE FOR THIS USE.



APPENDIX G

Utility Excavation NAPL Contingency Plan

Revision 5 – September 20, 2022

Objectives:

The purpose of this plan is to describe procedures to be followed in the event that non-aqueous phase liquid (NAPL) is encountered in utility trenches or other excavations during development of the Tradepoint Atlantic property. The specific objectives of this plan and the procedures outlined herein are:

1. To ensure identification and proper management of NAPL contaminated soils.
2. To ensure proper worker protection for working in areas of NAPL contamination.
3. To ensure that the installation of new utilities does not create new preferential flow paths for the migration of NAPL or soil vapors.

Identification of Oil & Grease and Petroleum Contaminated Soil:

An Environmental Professional (EP) will be on-site to determine if soils show evidence of the presence of NAPL during installation of utility trenches or other excavation activities completed during development. NAPL-contaminated soils can be identified by the presence of free oil. Free oil (NAPL) is liquid oil which could potentially be drained or otherwise extracted from the soil, and is the focus of this contingency plan, although severe staining accompanied by odors may be addressed via similar contingency measures provided herein (based on the judgement of the EP).

If NAPL is encountered during construction, potentially impacted material from the excavation will be removed and separated on plastic / covered with the same. Additional discussion of removal of material is in the **Soil Excavation, Staging, Sampling and Disposal** section below. If NAPL is encountered in an area where there is no known historical NAPL impact, the MDE will be notified (see **Initial Reporting** section) and the open excavation may be allowed to sit overnight. If after removal of the initial material identified additional NAPL impacted material enters the open excavation, the extent of impacts may be delineated and additional material removed / segregated. .

Soil Excavation, Staging, Sampling and Disposal:

The EP will monitor all utility trenching and excavation activities for signs of potential contamination. In particular, soils will be monitored with a hand-held photoionization detector (PID) for potential volatile organic compounds (VOCs) and will also be visually inspected for the presence of staining, petroleum waste materials, or other indications of NAPL contamination that may be different than what was already characterized.

Soil exhibiting physical evidence of NAPL contamination, which is located within a proposed new utility or subsurface structure (i.e., foundation, sump, electrical vault, underground tank, etc.), will

be excavated and segregated for disposal at the on-site nonhazardous landfill (Greys Landfill) or an off-site facility pending the completion of required analytical testing. If NAPL material continues to enter the open excavation, additional excavation may be continued in the field based on visual screening supplemented by the PID.

Any recovered NAPL impacted material will be segregated and collected for disposal. As required for disposal, samples impacted by NAPL will be collected for profiling/waste characterization and submitted to a fixed laboratory. Upon receipt of any additional characterization analytical results, the stockpiles will be tracked from generation to disposal.

Initial Reporting:

If evidence of NAPL in soil or groundwater is encountered during excavation in an area with no known historic NAPL impact, it will be reported to the MDE. Information regarding the location and characteristics of NAPL contaminated material will be documented as follows:

- Location (Site / Parcel ID with map);
- Approximate extent of contamination (horizontally and vertically – prepare a sketch including dimensions);
- Relative degree of contamination (i.e. free oil with strong odor vs. staining); and
- Visual documentation (take photographs and complete a photograph log)

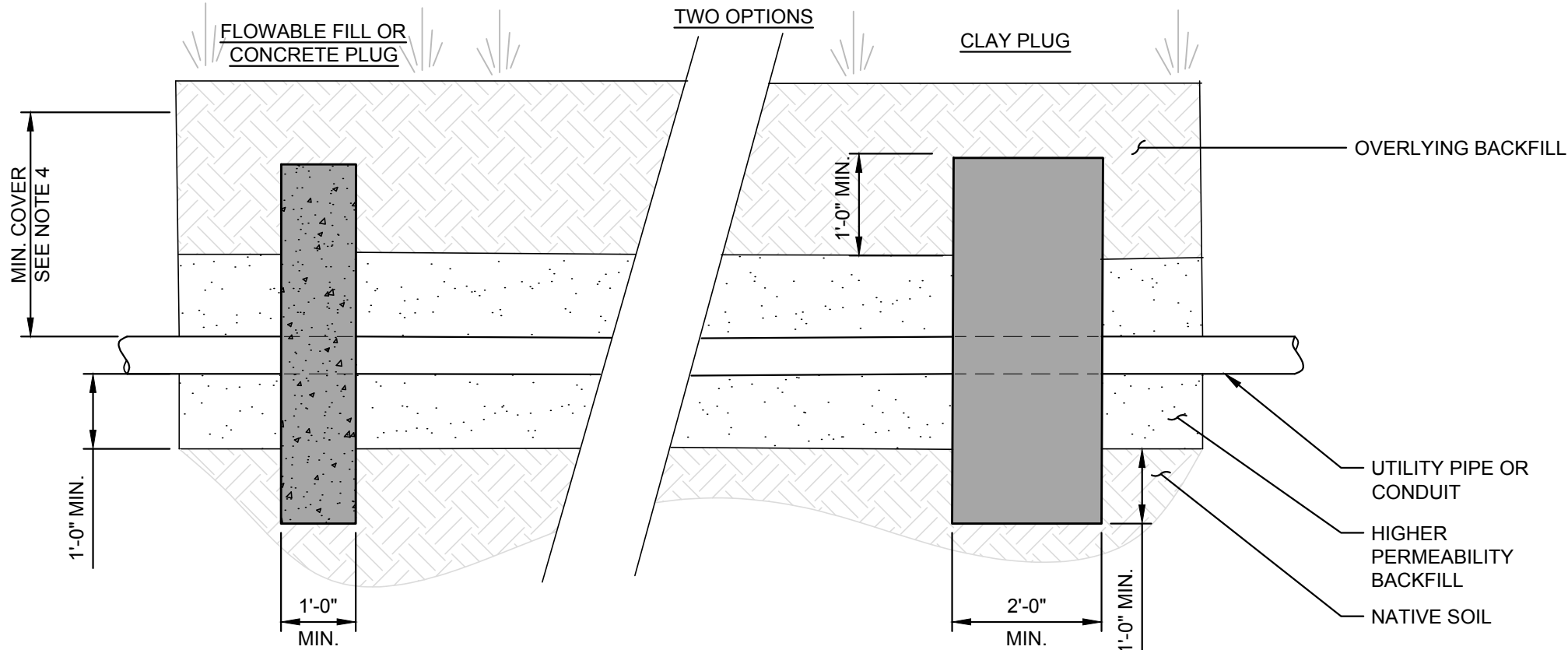
Utility Installations in Impacted Areas:

Underground piping or conduits installed through areas of known NAPL contamination shall be leak proof and water tight. All joints will be adequately sealed or gasketed, and pipes or conduits will be properly bedded and placed to prevent leakage. Trench backfill will meet the MDE definition of clean fill, or be otherwise approved by the MDE. Bedding must be properly placed and compacted below the haunches of the pipe. Clay, flowable fill, or concrete plugs may be placed every 100 feet across any permeable bedding to minimize the preferential flow and concentration of water along the bedding of such utilities.

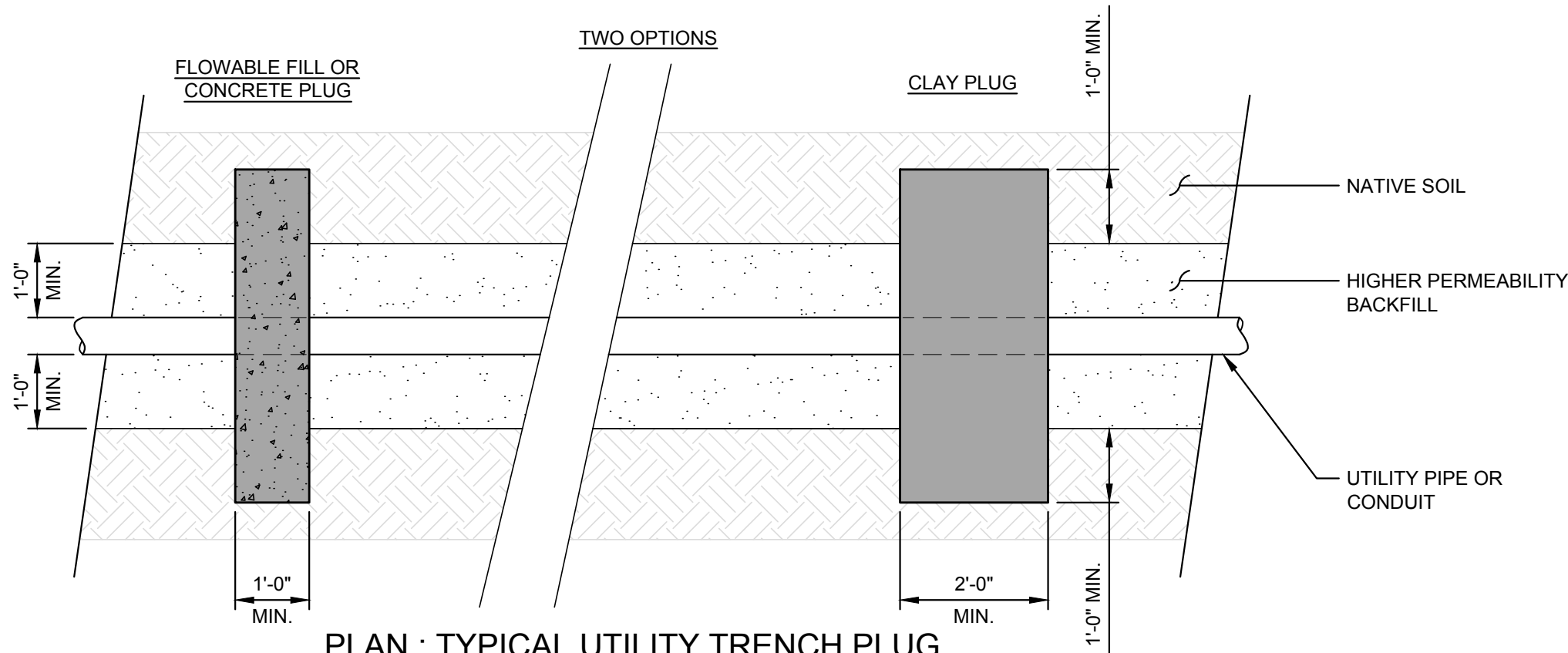
If required, each trench plug will be constructed with a 2-foot-thick clay plug or 1-foot-thick flowable fill or concrete plug, perpendicular to the pipe, which extends at least 1 foot in all directions beyond the permeable pipe bedding. The plug acts as an anti-seep collar, and will extend above the top of the pipe. A specification drawing for installation of the trench plug has been provided as **Figure 1**.

GENERAL NOTES:

- 1. ALL PIPES OR CONDUIT PASSING THROUGH AREAS OF PETROLEUM CONTAMINATION SHALL BE LEAK-PROOF AND WATERTIGHT. ALL JOINTS SHALL BE SEALED OR GASKETED.
- 2. ALL PIPES SHALL BE PROPERLY PLACED AND BEDDED TO PREVENT MISALIGNMENT OR LEAKAGE. PIPE BEDDING SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE THE POTENTIAL FOR ACCUMULATION OF WATER AND CONCENTRATED INFILTRATION.
- 3. ANTI-SEEP COLLARS FROM THE PIPE MANUFACTURER, THAT ARE PRODUCED SPECIFICALLY FOR THE PURPOSE OF PREVENTING SEEPAGE AROUND THE PIPE, ARE ACCEPTABLE IF INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND ONLY WITH PRIOR APPROVAL BY TPA.
- 4. MINIMUM COVER ABOVE UTILITY SHALL BE BASED ON SPECIFIC UTILITY REQUIREMENTS.
- 5. TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.
- 6. FOR ADDITIONAL REQUIREMENTS, INCLUDING THE USE OF MDE VCP CLEAN FILL FOR INDUSTRIAL LAND USE AND INSTALLATION OF GEOTEXTILE MARKER FABRIC, REFER TO NOTE 5 ON THE TYPICAL UTILITY CROSS SECTIONS.
- 7. ALL UTILITIES INSTALLED THROUGH AREAS CONTAINING NAPL OR ELEVATED CHEMICAL IMPACTS WITH THE POTENTIAL TO TRANSMIT VAPORS ALONG PREFERENTIAL FLOW PATHWAYS SHALL BE EITHER 1) BACKFILLED WITH LOW PERMEABILITY BACKFILL MATERIAL (LESS THAN OR EQUAL TO THE PERMEABILITY OF THE EXISTING SUBGRADE), OR 2) INSTALLED WITH TRENCH PLUGS ALONG THE ALIGNMENT IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN AND THE FOLLOWING NOTES:
 - A.) UTILITY TRENCH PLUGS SHALL BE INSTALLED AT 100-FOOT (MAX.) INTERVALS THROUGH ALL AREAS OF NAPL CONTAMINATION.
 - B.) UTILITY TRENCH PLUGS SHALL EXTEND A MINIMUM OF 1-FOOT IN ALL DIRECTIONS BEYOND ANY HIGHER PERMEABILITY BACKFILL MATERIALS (I.E., MATERIALS EXCEEDING THE PERMEABILITY OF THE EXISTING SUBGRADE).



SECTION : TYPICAL UTILITY TRENCH PLUG



PLAN : TYPICAL UTILITY TRENCH PLUG



ARM Group LLC
Engineers and Scientists

UTILITY TRENCH PLUG
Sparrows Point Site
Tradepoint Atlantic

September 2020
Not to Scale
160443M

Figure
1

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