

PORI LAGOON CORRECTIVE MEASURES STUDY REPORT

AREA B: PARCEL B22
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), has prepared this Palm Oil Recovery, Inc. (PORI) Lagoon Corrective Measures Study (CMS) Report to address soil and groundwater impacts within and surrounding the former PORI Lagoon area on Parcel B22 of the TPA property located in Sparrows Point, Maryland. The PORI Lagoon was located approximately 250 feet to the south of the Tin Mill Canal (TMC), which ultimately discharges to Bear Creek through the National Pollution Discharge Elimination System (NPDES) Outfall 014 beyond the Humphrey Creek Wastewater Treatment Plan (HCWWTP). The location of the PORI Lagoon is indicated on **Figure 1**.

The northern portion of Parcel B22 (encompassing the PORI Lagoon) is proposed for industrial redevelopment and has been designated as Sub-Parcel B22-2. The Response and Development Work Plan (RADWP) for Sub-Parcel B22-2 (Revision 0 dated November 9, 2020) was approved conditionally by the Maryland Department of the Environment (MDE) and United States Environmental Protection Agency (USEPA) through email correspondence on December 16, 2020. Sub-Parcel B22-2 consists of approximately 45.0 acres and is slated for development and occupancy as a logistics center (Logistics Center III). The proposed logistics center building will be located to the south of the PORI Lagoon and will have a total area of approximately 700,000 square feet, including storage and office space.

All investigation phases in the vicinity of the PORI Lagoon were approved by the MDE and the USEPA prior to implementation. The investigation of the PORI Lagoon was implemented in compliance with requirements pursuant to the following:

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

An application to enter the TPA property into the Maryland Department of the Environment Voluntary Cleanup Program (MDE-VCP) was submitted to MDE and delivered on June 27, 2014. The property's current and anticipated future use is Tier 3 (Industrial), and plans for the property include demolition and redevelopment over the next several years. The portion of Parcel B22 encompassing the PORI Lagoon is also part of the acreage that remains subject to the requirements of the Multimedia Consent Decree between Bethlehem Steel Corporation, the USEPA, and the MDE (effective October 8, 1997) as documented in correspondence received from USEPA on September 12, 2014.

1.1. SITE HISTORY

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

Parcel B22 includes a portion of the Finishing Mills Area, which included a number of significant industrial operations. The former facilities and processes in the Finishing Mills Area generally included hot and cold milling and various plating operations including chrome, tin, and zinc alloys. The PORI Area was located in the northern section of the Finishing Mills Area and the northern portion of Parcel B22. The Phase I Environmental Site Assessment (ESA) prepared by Weaver Boos Consultants (dated May 19, 2014) identified several Recognized Environmental Conditions (RECs) and Solid Waste Management Units (SWMUs) associated with the PORI Lagoon:

PORI Oil/Water Separator (REC 10, Finding 36, also listed as SWMU 71):

The oil/water separator received waste oil and water from the cold rolling operations across the facility. Including external sources, the unit received and processed nearly 1 million gallons of waste oil per month. The PORI operations adhered to strict requirements for inflow oil, because the operation needed to meet NPDES discharge criteria and the processed waste oil needed to meet specifications for resale. There were no known or reported releases from the oil/water separator.

PORI Holding Tank (REC 1P, Finding 37, also listed as SWMU 72):

After passing through the oil/water separator, the recovered oil was transferred to the PORI holding tanks for storage. There were no known or reported releases from the holding tanks.

PORI Lagoon (REC 1Q, Finding 38, also listed as SWMU 73):

After passing through the oil/water separator, the wastewater was then piped to the PORI Lagoon. Within the PORI Lagoon, additional waste oil was skimmed and transferred back to the oil/water separator. Water from the PORI Lagoon was discharged to the TMC through a permitted outfall.

1.2. OBJECTIVES

The objectives of this CMS Report are to provide a summary of the nature and extent of contamination in the vicinity of the PORI Lagoon, evaluate the presence and significance of potential discharges of groundwater contamination derived from the PORI Lagoon to the TMC, and provide recommendations for corrective measures. This CMS Report includes a summary of past investigations; site investigation methods and analytical results; an evaluation of the Resource Conservation and Recovery Act (RCRA) Threshold Criteria and Balancing Criteria; and a recommendation for appropriate corrective measures (which have been implemented).

2.0 PORI LAGOON INVESTIGATIONS

Several investigation phases have been completed in the vicinity of the PORI Lagoon between 2015 and 2020. This report provides a comprehensive summary of past investigation activities. Work Plans and agency approvals are referenced in each sub-section below, as applicable. The investigations utilized methods and protocols that followed the procedures included in the Quality Assurance Project Plan (QAPP) dated April 5, 2016 which was approved by the agencies to support the investigation and remediation of the TPA property. Information regarding the project organization, field activities and detailed sampling methods, sampling equipment, sample handling and management procedures, the selected laboratory and analytical methods, quality control and quality assurance procedures, investigation-derived waste (IDW) management methods, and reporting requirements are described in detail in the QAPP. All site characterization activities were conducted under the property-wide Health and Safety Plan (HASP).

Unless otherwise noted, the soil and groundwater samples collected during the various phases of investigation were submitted to Pace Analytical Services, Inc. (PACE) to be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) via USEPA Method 8260, TCL semi-volatile organic compounds (SVOCs) via USEPA Methods 8270 and 8270 SIM, Oil & Grease via USEPA Method 9071 or 1664, and total petroleum hydrocarbon (TPH) diesel range organics (DRO) and gasoline range organics (GRO) via USEPA Methods 8015. Select samples were analyzed by Alpha Analytical, Inc. (Alpha) rather than PACE for polynuclear aromatic hydrocarbons (PAHs) via USEPA Method 8270 SIM. The soil and groundwater samples collected after the initial Parcel B22 Phase II Investigation and Finishing Mills Groundwater Phase II Investigation (i.e., during supplemental investigation phases) were analyzed for PAHs only, in lieu of full SVOCs. The relevant laboratory reports for each investigation phase (and data validation reports for select samples, as applicable) are included as electronic attachments.

Additional analyses were performed for inorganics and PCBs during the initial Parcel B22 and Finishing Mills Groundwater Phase II Investigations as well as the TMC Sediment Characterization Investigation (which included sample collection within the PORI Lagoon and is discussed in Section 2.1), but these contaminants were ruled out as concerns. The contaminants of concern derived from the PORI Lagoon are VOCs, SVOCs, and TPH/Oil & Grease.

2.1. TIN MILL CANAL SEDIMENT CHARACTERIZATION

The TMC Sediment Characterization work was conducted from April 2015 to November 2016 pursuant to a sampling and analysis Work Plan approved by the MDE and USEPA on March 24, 2015 (prepared by EnviroAnalytics Group, LLC (EAG) dated March 2015) and two separate Work Plan Addenda approved by the MDE and USEPA on August 11, 2015 (prepared by EAG dated August 2015) and July 27, 2016 (prepared by EAG dated July 2016).

The objective of the TMC Sediment Characterization investigation was to characterize the nature and extent of contamination in sediments in the TMC. Sediment samples were collected from 16 transects along the length of the TMC and from 1 transect along the channel within the PORI Lagoon. The investigation scope included the collection of discrete depth samples as well as composite samples. During the investigation, a total of 143 sediment samples were collected and analyzed. Sediment samples were analyzed for VOCs, SVOCs, metals, cyanide, and/or PCBs. TPH/Oil & Grease analyses were not completed during this investigation.

The sampling and analysis plan for the TMC Sediment Characterization was developed to provide adequate coverage throughout the TMC to identify potential releases of hazardous substances and/or petroleum products. PCBs were identified at elevated levels within the TMC during the initial investigation but were further delineated in a subsequent phase and were ultimately defined to a known area of the TMC (not within the PORI Lagoon). The complete findings of the sediment investigation were provided in the Sediment Characterization Report for the Tin Mill Canal (Revision 3 dated January 4, 2018).

2.2. FINISHING MILLS GROUNDWATER INVESTIGATION

The Finishing Mills Groundwater Phase II Investigation was conducted from May to July 2016 under the approved Finishing Mills Groundwater Work Plan (Revision 1 dated July 7, 2016). A total of 71 groundwater samples were collected from temporary groundwater sample collection points (commonly referred to as piezometers) and permanent wells (both historical and newly constructed) during the groundwater investigation. The completed findings of the Finishing Mills Groundwater Phase II Investigation were presented to the agencies within the Finishing Mills Groundwater Phase II Investigation Report (Revision 0 dated November 30, 2016).

A total of 10 shallow groundwater samples (from five piezometers and five monitoring wells) from the Finishing Mills Groundwater Phase II Investigation were located in the vicinity of the PORI Lagoon. Several of these locations were positioned in the upgradient or crossgradient direction to the south and/or east of the lagoon, and others were positioned along the TMC, which is the presumed discharge location for shallow groundwater. Soil boring observation logs and piezometer construction logs for the five piezometers (FM-004-PZS, FM-005-PZS, FM-006-PZS, FM-007-PZS, and FM-013-PZS) are provided in **Appendix A**. Well construction logs are not available for the five historical wells located along the TMC (TM09-PZM007, TM11-PZM007, TM13-PZM007, TM15-PZM007, TM15-PZM011).

Table 1 provides a summary of organic compounds (VOCs, SVOCs, and TPH/Oil & Grease) detected among the groundwater samples completed during various investigations. The organic Project Action Limit (PAL) exceedances from the Finishing Mills Groundwater Phase II Investigation are shown on **Figure 2**. During the implementation of the Finishing Mills Groundwater Work Plan, TPH-DRO/GRO analysis was required at every location, but Oil & Grease analysis was not required or completed. The detected results are provided in comparison

to the PALs. The PALs for relevant PAHs have been adjusted upward based on updated toxicity data published in the USEPA Regional Screening Level (RSL) Resident Tapwater Table.

The Finishing Mills Groundwater Phase II Investigation identified concentrations of several organic compounds above the PALs among the groundwater samples surrounding the PORI Lagoon. Exceedances of naphthalene and TPH-DRO were generally observed to be widespread in the Finishing Mills Area, with maximum detected concentrations of 113 µg/L (at TM15-PZM007) and 4,480 µg/L (at FM-005-PZS), respectively. Each groundwater collection point was also inspected for evidence of non-aqueous phase liquid (NAPL) using an oil-water interface probe prior to sampling. None of the groundwater sample collection points from the Finishing Mills Groundwater Investigation showed evidence of NAPL during these checks.

The groundwater sample collection points used in the Finishing Mills Groundwater Phase II Investigation were surveyed by a Maryland-licensed surveyor to obtain top of casing (TOC) elevation data. A synoptic round of groundwater measurements was collected on October 3, 2016 from each location included in the Finishing Mills monitoring network. The groundwater elevation data from these shallow groundwater points were used to create a groundwater elevation contour map (**Figure 3**). As shown in **Figure 3**, the highest groundwater elevations in the shallow hydrogeologic zone are located to the southeast of the PORI Lagoon. Shallow groundwater appears to flow from the southeast to the northwest toward the TMC, which is the presumed discharge location.

The piezometers installed during the Finishing Mills Groundwater Phase II Investigation were properly abandoned between October 2016 and January 2017 by a licensed driller and in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36.

2.3. PARCEL B22 PHASE II INVESTIGATION

The Parcel B22 Phase II Investigation was conducted from May to July 2016 under the approved Parcel B22 Work Plan (Revision 1 dated June 2, 2016). A total of 387 soil samples (from 180 boring locations) were collected for analysis as part of the Parcel B22 Phase II Investigation. Groundwater samples were not collected during the Parcel B22 Phase II Investigation, but groundwater conditions were investigated separately under the Finishing Mills Groundwater Investigation, discussed above in Section 2.2. The completed findings of the Parcel B22 Phase II Investigation were presented within the Parcel B22 Phase II Investigation Report (Revision 1 dated August 8, 2019) and supplemented by a Comment Response Letter (dated April 7, 2020).

Four soil borings were completed directly adjacent to the PORI Lagoon: B22-119-SB, B22-120-SB, B22-121-SB, and B22-174-SB. Soil boring observation logs for these four borings are provided in **Appendix A. Table 2** provides a summary of organic compounds (VOCs, SVOCs, and TPH/Oil & Grease) detected among the soil boring samples completed during various investigations. The soil boring PAL exceedance locations and results are shown on **Figure 4**.

During the implementation of the Parcel B22 Work Plan, TPH-DRO/GRO analysis was required at every location, but Oil & Grease analysis was not required or completed. The detected results are provided in comparison to the PALs. The PALs for relevant PAHs have been adjusted upward based on updated toxicity data published in the USEPA RSL Composite Worker Soil Table.

The Parcel B22 Phase II Investigation identified elevated concentrations of naphthalene and benzo[a]pyrene in the subsurface soil samples collected from soil boring B22-119-SB, which was installed at a location on the north side of the PORI Lagoon. The highest concentrations of these organic constituents were in samples collected in the interval from 9 to 10 feet below ground surface (bgs). At 10 feet bgs, naphthalene was detected at a concentration of 2,040 mg/kg and benzo[a]pyrene was detected at a concentration of 84.9 mg/kg. In the overlying sample collected at 9 feet bgs, the naphthalene and benzo[a]pyrene concentrations were significantly lower (with concentrations of 32.8 mg/kg and 0.26 mg/kg, respectively). A black and viscous product was observed in soil boring B22-119-SB within the soil core from 9 to 10 feet bgs, corresponding to the elevated analytical results.

The PORI Lagoon had also been targeted by soil borings B22-120-SB, B22-121-SB, and B22-174-SB, which were located to the southeast of B22-119-SB. None of these additional soil borings had elevated naphthalene or benzo[a]pyrene detections. It should be noted that soil boring B22-119-SB was located in the suspected downgradient groundwater flow direction from the lagoon.

A temporary groundwater piezometer was installed at B22-119-SB to determine the presence or absence and potential mobility of NAPL in groundwater. There was no measurable light or dense NAPL present in the screening piezometer (B22-119-PZ) during the 0-hour, 48-hour, or 30-day gauging events. The screening piezometer was later abandoned on October 11, 2016 in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36. Additional site activities related to NAPL delineation at the PORI Lagoon are discussed in Section 2.5.

2.4. PORI LAGOON CHARACTERIZATION INVESTIGATIONS

2.4.1. Phase 1 (Soil, Test Pits, and Groundwater)

The initial phase of supplemental investigation work at the PORI Lagoon was conducted in 2018 under the Work Plan for the Characterization of Naphthalene and Benzo[a]pyrene Impacts at the PORI Lagoon dated April 19, 2018. A total of 12 soil borings, two test pit locations, and four groundwater sample locations were utilized to collect samples in the vicinity of the lagoon.

The 12 soil borings were completed from May 7 to 9, 2018. At each boring location, soil samples were collected from the intervals of 4 to 5, 9 to 10, and 14 to 15 feet bgs (subject to minor field adjustment) using a Geoprobe[®] direct push rig. The samples were biased to target intervals with evidence of contamination based on field screening observations including odors, staining, elevated photoionization detector (PID) readings, etc. Temporary piezometers were also installed

at four of the soil boring locations (B22-119-SB, B22-119I-SB, B22-119J-SB, and B22-119K-SB) to further characterize groundwater impacts downgradient from the lagoon. Boring observation logs and piezometer construction logs for each location are provided in **Appendix A**. On May 31 and June 1, 2018, the four piezometers that were present at that time (B22-119-PZ, B22-119I-PZ, B22-119J-PZ, and B22-119K-PZ) were purged to facilitate sample collection. The groundwater purge logs are included as **Appendix B**.

Two test pits (B22 TP 1 and B22 TP 2) were completed on June 5, 2018 approximately 20 feet to the southeast and approximately 45 feet to the east, respectively, from B22-119-SB. The eastern test pit targeted the outflow pipe that runs from the PORI Lagoon to the north toward the TMC. A soil sample was collected from each test pit along the sidewall above the water table, at approximately 12 feet bgs relative to the surrounding ground surface at the top of the PORI Lagoon. A photograph log with representative photos from the test pitting is provided in **Appendix C**. As shown in the photograph log, a length of sheet piling was observed at the northwestern edge of the PORI Lagoon.

Table 2 shows that seven out of 12 soil borings (B22-119-SB, B22-119B-SB, B22-119E-SB, B22-119F-SB, B22-119G-SB, B22-119H-SB, B22-119I-SB) had concentrations of naphthalene and/or benzo[a]pyrene detected in one or more soil samples above their respective PALs. Several other PAHs were identified above their respective PALs in sample B22-119H-SB-11 only. Oil & Grease exceeded its PAL of 6,200 mg/kg in sample B22-119B-SB-15 with a detected concentration of 35,800 mg/kg. The soil boring PAL exceedance locations and results are shown on **Figure 4**. During the original Phase II Investigation in 2016, there were elevated concentrations of naphthalene and benzo[a]pyrene in sample B22-119-SB-10 (corresponding with observations of NAPL). B22-119-SB was re-installed during this supplemental investigation, and NAPL was again observed in the soil core (7 to 10 feet bgs). NAPL was not observed in any other borings although odors were noted at several locations. The soil borings with the highest naphthalene and benzo[a]pyrene concentrations identified during this supplemental phase of investigation (B22-119E-SB and B22-119H-SB) were the two borings completed closest to the original boring B22-119-SB.

Two additional soil samples were collected from a depth of approximately 12 feet bgs (measured relative to the surrounding ground surface at the top of the PORI Lagoon) from the two test pit locations (B22 TP 1 and B22 TP 2). The results from these test pit soil samples are provided on **Table 3**. The test pit PAL exceedance locations and results are shown on **Figure 5**. These test pit samples had naphthalene detections of 0.31 mg/kg and 0.26 mg/kg and benzo[a]pyrene detections of 0.62 mg/kg and 0.71 mg/kg, respectively. These detections were below the PALs for naphthalene and benzo[a]pyrene; however, TPH-DRO and Oil & Grease were both detected above the PAL of 6,200 mg/kg.

The results from the groundwater sampling event utilizing the first four piezometers installed at the PORI Lagoon (B22-119-PZ, B22-119I-PZ, B22-119J-PZ, and B22-119K-PZ) are provided on **Table 1**. The groundwater PAL exceedance locations and results in the immediate vicinity of the lagoon are shown on **Figure 6**. A groundwater sample was not successfully collected from B22-119K-PZ in 2018 due to observations of NAPL and heavy silt within the piezometer (as indicated on the purge log). The groundwater sample collected from B22-119-PZ, corresponding to the soil boring with observed NAPL and the highest concentrations of naphthalene and benzo[a]pyrene during the original Phase II Investigation, had aqueous PAL exceedances including TPH/Oil & Grease, various PAHs including naphthalene (2,550 µg/L) and benzo[a]pyrene (57.3 µg/L), and benzene (859 µg/L).

2.4.2. Phase 2 (Groundwater)

Following review of the initial characterization findings (presented in the Characterization of Naphthalene and Benzo[a]pyrene Impacts Interim Submittal dated August 8, 2019), and as described in the PORI Lagoon Interim Submittal Comment Response Letter dated January 14, 2020, MDE requested additional groundwater sampling to determine the extent of SVOCs, Oil & Grease, TPH-DRO/GRO, benzene, and NAPL contamination in the vicinity of the PORI Lagoon.

The MDE selected three locations to provide additional groundwater coverage, including a groundwater sample from NAPL screening piezometer B22-119N-PZ (which was installed as part of a related NAPL delineation investigation discussed in Section 2.5), and two new piezometers at locations as close as possible to the eastern and western sides of the PORI Lagoon, which were later designated as B22-119R-PZ and B22-119S-PZ. The two new piezometers were installed at the requested locations on May 21, 2020. A slight sheen was observed in the soil core at B22-119S-PZ. On May 27, 2020, the sampling scope was expanded to include a resample of B22-119-PZ, as well as sampling B22-119M-PZ and B22-119Q-PZ. Soil boring observation and piezometer construction logs for each piezometer are provided in **Appendix A**. The six groundwater samples were collected from the designated locations on May 27 and 28, 2020. The groundwater purge logs are included as **Appendix B**.

The results from the supplemental groundwater sampling event utilizing the six designated piezometers are provided on **Table 1** (along with the results from each groundwater investigation phase). The groundwater PAL exceedance locations and results from the locations in the direct vicinity of the PORI Lagoon are shown on **Figure 6**. The only VOC that was detected above the PAL during the May 2020 groundwater sampling event was benzene with exceedances at B22-119-PZ (with a concentration of 835 µg/L) and B22-119S-PZ (with a concentration of 50.5 µg/L). The highest concentration of naphthalene that was detected in groundwater during the May 2020 sampling event was 886 µg/L in B22-119-PZ. This concentration is significantly lower than the original groundwater sample at B22-119-PZ collected on May 31, 2018 (2,550 µg/L). The next highest naphthalene concentration that was detected in groundwater during the May 2020 event

was at B22-119S-PZ (120 µg/L). TPH-DRO was detected above its PAL (47 µg/L) in all six groundwater samples collected in May 2020, with the highest detection of 19,700 µg/L in B22-119-PZ. Oil & Grease and TPH-GRO were detected above their PALs (47 µg/L) in five samples and two samples, respectively.

The piezometers in the vicinity of the PORI Lagoon (from Phase 1 and Phase 2) were properly abandoned on June 8, 2020, by a licensed driller and in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36. B22-119I-PZ was previously found to be destroyed on September 3, 2019, and therefore was unable to be abandoned.

2.4.3. Phase 3 (Test Pits)

A number of test pits were completed to further characterize the sediments in the bottom of the PORI Lagoon. These test pits were completed using an excavator at six locations (B22-TP-1 through B22-TP-6) on June 17, 2020. Three excavator buckets of soil were removed from each test pit. Material from each test pit was screened with a PID and soil samples were collected for analysis at three distinct 1-foot depth intervals (0 to 1 foot, 2 to 3 feet, and 4 to 5 feet). A sample could not be collected at a depth of 5 feet from B22-TP-4 due to equipment refusal. A photograph log with representative photos from the test pitting is included as **Appendix C**.

The analytical soil results from the supplemental test pit samples are provided on **Table 3** (along with the results from the test pits completed in 2018). The test pit PAL exceedance locations and results from both investigation phases (2018 and 2020) are shown on **Figure 5**. Each test pit sample collected on June 17, 2020 had an exceedance of TPH-DRO and/or Oil & Grease. Several elevated concentrations were identified among the test pit samples above the PAL of 6,200 mg/kg. The highest detected concentrations of TPH-DRO and Oil & Grease among all the test pit samples were 46,900 mg/kg and 198,000 mg/kg, respectively, both detected at B22-TP-4-3. A visible sheen was also observed in the excavator bucket (on the water) by the ARM field personnel providing oversight during the completion of B22-TP-4. Despite the elevated concentrations of TPH-DRO and Oil & Grease, the concentrations of VOCs and PAHs detected in the test pit soil samples were comparatively low. There were five PAL exceedances of benzo[a]pyrene among the test pits samples, with a maximum detected concentration of only 11 mg/kg in B22-TP-4-3.

2.4.4. Phase 4 (Groundwater)

ARM submitted a PORI Lagoon Characterization Report dated September 1, 2020 to discuss the prior phases of investigation at the PORI Lagoon. Following review of the PORI Lagoon Characterization Report, MDE requested additional groundwater samples be collected to further investigate groundwater contamination associated with the PORI Lagoon, and to provide additional data to support the preparation of this CMS Report. The supplemental work was proposed under a PORI Lagoon Work Plan Letter dated October 22, 2020. The Work Plan Letter was approved by the MDE via email on October 29, 2020 with the stipulation that one additional

piezometer should be installed to the south of the PORI Lagoon (in the presumed upgradient direction) to assist in contouring groundwater elevations. An additional gauging location was also added in the TMC to provide relative surface water elevations and help position future monitoring wells. This supplemental investigation phase was completed in November 2020.

A total of 12 piezometer locations were proposed (including the upgradient location requested by the MDE). During the implementation of fieldwork two piezometers could not be installed due to equipment refusal (B22-119T-PZ and B22-119W-PZ). Additionally, one piezometer was successfully installed but was destroyed by vehicle traffic prior to sample collection (B22-119X-PZ). Soil boring observation and piezometer construction logs for the 10 completed locations are provided in **Appendix A**. NAPL product was observed in the soil core at B22-119K-SB, and a trace sheen was observed in the soil core at B22-119U-SB.

A total of nine groundwater samples were successfully collected during this supplemental investigation phase. The groundwater samples were collected from the designated locations on November 3 and 4, 2020. The groundwater purge logs are included as **Appendix B**. The Work Plan Letter also specified that NAPL would be sampled and characterized; however, measurable NAPL did not accumulate in any of the sample points, so no samples were collected. Each piezometer was also inspected for evidence of NAPL using an oil-water interface probe prior to sampling. None of the groundwater sample points from this phase of the PORI Lagoon investigation showed evidence of NAPL during the pre-sampling checks, although a trace detection of NAPL was later observed at B22-119K-PZ when it was subsequently gauged for the development of a groundwater contour map (discussed below). NAPL had previously been delineated surrounding location B22-119K-PZ as discussed in detail in Section 2.5.

The results from the supplemental groundwater sampling event utilizing the nine designated piezometers are provided in **Table 1** (along with the results from the preceding groundwater investigation phases). The groundwater PAL exceedance locations and results from the supplemental investigation phase (November 2020) are shown on **Figure 7**, except the results from B22-119K-PZ and B22-119Q-PZ are shown on **Figure 6** since they were collected in such close proximity to the lagoon and both were investigated previously. Exceedances of naphthalene, TPH-DRO, and Oil & Grease were generally observed to be widespread in the vicinity of the lagoon during this investigation phase, with the maximum detections of all three compounds observed at B22-119V-PZ with concentrations of 141 µg/L, 8,080 µg/L, and 3,100 J µg/L, respectively.

The groundwater sample collection points used in this phase of the PORI Lagoon investigation were surveyed by a Maryland-licensed surveyor to obtain TOC elevation data. A synoptic round of groundwater measurements was collected on November 18, 2020 from each piezometer as well as select monitoring wells positioned to the north along the TMC. A supplemental measurement was also collected from a surveyed location on the bridge crossing the TMC (to the northeast of the PORI lagoon) to provide elevation data to compare the shallow groundwater elevations to the

TMC water surface. The groundwater elevation data from these shallow piezometers and monitoring wells were used to create a localized groundwater elevation contour map (**Figure 8**).

Based on the contours shown in **Figure 8**, shallow groundwater appears to flow from the south to the north toward the TMC. This is generally consistent with the contouring developed from the Finishing Mills Groundwater Phase II Investigation (see Section 2.2 and **Figure 3**), although the trend of groundwater to flow toward the west or northwest is not apparent on the localized map. The TMC elevation recorded at the bridge (0.9 feet above mean sea level (amsl)) was assigned to the full length of the TMC visible on the contour map. Several groundwater locations exhibited elevations below 0.9 feet amsl and at B22-119K-PZ the reported elevation was below 0 feet amsl. The level in the TMC fluctuates due to rainfall and HCWWTP operations. The reported groundwater elevation at B22-119CC-PZ (4.15 feet amsl) provides evidence that groundwater flow is generally toward the TMC; however, the hydraulic gradient appears quite flat directly along the TMC perimeter. The low elevation reported at B22-119K-PZ could be anomalous but suggests groundwater migration from this area to the TMC may be inhibited.

The piezometers remaining in the vicinity of the PORI Lagoon (installed during Phase 4) will be properly abandoned by a licensed driller and in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36.

2.5. NAPL DELINEATION INVESTIGATION

As described above, four piezometers (B22-119-PZ, B22-119I-PZ, B22-119J-PZ, and B22-119K-PZ) were installed in May 2018 during the initial phase of the PORI Lagoon characterization investigation. Approximately 48-hours after its installation, B22-119K-PZ (screened from 4.5 to 24.5 feet bgs) had accumulated 0.14 feet of NAPL in the piezometer screen. As a result of the measurable NAPL detection, and to further delineate the extent of NAPL in groundwater, six additional piezometers (B22-119L-PZ, B22-119M-PZ, B22-119N-PZ, B22-119O-PZ, B22-119P-PZ, and B22-119Q-PZ) were installed on October 12, 2018. None of the six additional delineation piezometers had measurable NAPL during the 0-hour, 48-hour, or 30-day gauging events. The locations of the piezometers and delineation findings are shown on **Figure 9**. The dates of gauging activities, as well as NAPL thickness measurements and water level measurements, have been included in **Table 4**. This table also includes the installation date of each piezometer, as well as relevant construction details (total depths, screen intervals, etc.). Soil boring observation and piezometer construction logs were completed for all delineation piezometers installed around B22-119-PZ and are provided in **Appendix A**.

Following conclusion of the required gauging events, a NAPL Delineation Completion Report and Permanent Well Installation Work Plan was submitted to the agencies dated December 4, 2019. The Delineation Completion Report requested the abandonment of the NAPL delineation network and recommended a future monitoring and recovery program for the NAPL identified at B22-119K-PZ via the installation of a permanent 2-inch diameter groundwater well. At the time that

the Delineation Completion Report was submitted to the agencies, B22-119K-PZ was the only temporary piezometer that had any detections of NAPL.

During the expansion of the groundwater investigation in May 2020, two additional temporary piezometers were installed as B22-119R-PZ and B22-119S-PZ, and a total of six supplemental groundwater samples were collected (B22-119-PZ, B22-119M-PZ, B22-119N-PZ, B22-119Q-PZ, B22-119R-PZ and B22-119S-PZ). During the groundwater sampling, an oil-water interface probe was used to gauge all six temporary piezometers. The oil-water interface probe made no indication that NAPL was encountered. During the initial groundwater purge, the field personnel developed each temporary piezometer. This was completed using dedicated tubing to remove any settled sediment at the bottom of the piezometer prior to initiating a purging record to monitor parameter stabilization. During this piezometer development, a viscous milky-colored product appearing to be a dense NAPL was observed in the purge water at B22-119M-PZ and B22-119Q-PZ. The two piezometers are located south and southwest of the temporary piezometer where NAPL was originally detected (B22-119K-PZ); however, the product did not appear to be the same type of NAPL based on its color, lack of odors, lack of reactivity to the oil-water interface probe, and density.

The field personnel removed as much of the unknown product from the two temporary piezometers prior to initiating the groundwater sampling. Based on the gauging measurements, approximately 2.6 feet of the milky-colored product was present in B22-119M-PZ, and approximately 3.1 feet of the product was present in B22-119Q-PZ during the development. No other temporary piezometer had any observations of NAPL during the May 2020 groundwater sampling activities. Based on the analytical results returned for locations B22-119M-PZ and B22-119Q-PZ, the milky-colored product does not appear to represent a significant continuing source of PAHs or VOCs which could present a potential VI concern.

It should also be noted that approximately two weeks after concluding the May 2020 groundwater sampling, the piezometers were abandoned (as noted Section 2.4.2). On the abandonment date approximately 0.17 feet of NAPL was detected with the oil-water interface probe in B22-119K-PZ, which was already known to be impacted. Additionally, a small amount of NAPL (0.02 feet) was identified with the interface probe in B22-119M-PZ immediately prior to abandonment. The NAPL detected on this date appeared to be the same as the NAPL in B22-119K-PZ.

3.0 DESCRIPTION OF CURRENT SITUATION

3.1. SOIL CONDITIONS SUMMARY

Naphthalene and other PAHs were detected at elevated levels in the soil samples collected from B22-119-SB and the immediately surrounding borings B22-119E-SB and B22-119H-SB. NAPL was observed at B22-119-SB within the soil core from 9 to 10 feet bgs during the original Phase II Investigation in 2016 (corresponding to the elevated analytical results) and from 7 to 10 feet bgs during the supplemental investigation in 2018 (without soil samples collected from the corresponding soil interval). Soil borings B22-119-SB and B22-119K-SB (2020 reinstallation), both located to the north of the PORI lagoon, were the only soil borings with significant NAPL contamination observed in the cores. Two other borings (B22-119S-SB and B22-119U-SB) had observations of a slight sheen observed in the cores.

The test pit samples collected from the PORI Lagoon sediments contained elevated TPH-DRO and Oil & Grease within the lagoon footprint. One soil boring sample (B22-119B-SB-15) collected at the northeastern perimeter of the lagoon contained an elevated concentration of Oil & Grease comparable to the test pit sediment results. Although the sediments in the PORI Lagoon are impacted with TPH-DRO and Oil & Grease, the concentrations of VOCs and PAHs in the test pit samples were low and did not exceed the PALs with the exception of benzo[a]pyrene. The low concentrations of VOCs and PAHs in the sediments indicate these materials are not likely to present a vapor intrusion (VI) concern.

3.2. GROUNDWATER CONDITIONS SUMMARY

The most significant dissolved contamination in groundwater was observed at B22-119-PZ, which exhibited the maximum concentrations of most organic constituents including naphthalene and TPH-DRO. The maximum concentration of Oil & Grease in groundwater was observed at B22-119M-PZ. Both of these piezometers were located on the northern side of the PORI Lagoon in close proximity to the lagoon itself. Numerous sample points were located between these two locations and the TMC, which is the presumed discharge location for shallow groundwater. The groundwater results obtained from B22-119CC-PZ were relatively low, and the only PAL exceedances at this location were relatively low levels of naphthalene and TPH-DRO.

It should be noted that B22-119K-PZ was the only piezometer which accumulated NAPL (measurable or trace) that was reactive to the oil-water interface probe. The NAPL at B22-119K-PZ has since been delineated as discussed in detail in Section 2.5. An unknown milky-colored product was observed at locations B22-119M-PZ and B22-119Q-PZ during groundwater purging but did not appear to be the same type of NAPL that was identified at B22-119K-PZ. The groundwater samples obtained from B22-119K-PZ, B22-119M-PZ, and B22-119Q-PZ had relatively low concentrations of organic compounds, with the exception of the elevated Oil &

Grease at B22-119M-PZ (which was the maximum detection of this parameter). The presence of elevated Oil & Grease at B22-119M-PZ is indicative of lubricating oil.

3.2.1. Isocontour Maps

The locations of all groundwater sample collection points are shown on **Figure 10**. Based on the results from the various phases of preceding investigation, concentration isocontour maps have been developed for dissolved-phase naphthalene, TPH-DRO, and Oil & Grease, and are presented on **Figure 11**, **Figure 12**, and **Figure 13**, respectively. In cases where multiple sampling events were completed at a given location (e.g., B22-119-PZ, B22-119Q-PZ) the analytical results from the most recent sampling event were included in the preparation of the isocontour maps.

As seen on **Figure 11**, elevated concentrations of naphthalene are present in the immediate vicinity of the PORI Lagoon. The dissolved-phase naphthalene contamination has been delineated and does not extend to the TMC. TM15-PZM007 is the only sample point located along the TMC exhibiting a notable concentration of naphthalene (113 µg/L), but the impacts may not be derived from the PORI Lagoon as this well is located in the apparent crossgradient direction.

As shown on **Figure 12** and **Figure 13**, TPH-DRO and Oil & Grease exhibited a similar distribution among the groundwater sample points. While elevated concentrations of these contaminants were observed in the immediate vicinity of the PORI Lagoon, the concentrations were notably lower in the sample points positioned along the TMC. In the case of TPH-DRO, several samples in the Finishing Mills Area (e.g., FM-004-PZS) exhibited concentrations that are comparable to those observed along the TMC to the north of the PORI Lagoon. The dataset for Oil & Grease was somewhat limited because the samples obtained during the Finishing Mills Groundwater Phase II Investigation were not analyzed for Oil & Grease. Additionally, it is notable that the PACE laboratory reporting limit for Oil & Grease was elevated, so the non-detect results do not necessarily indicate a lack of impacts. However, the available Oil & Grease data indicate a similar trend as was noted in the TPH-DRO data, with the concentrations observed at the PORI Lagoon dissipating prior to reaching the sample points along the TMC.

The concentration isocontour maps presented on **Figure 11**, **Figure 12**, and **Figure 13** indicate that although elevated concentrations of organics are present in the immediate vicinity of the PORI Lagoon, the concentrations dissipate significantly prior to reaching the sample points along the TMC. Based on the groundwater elevation contours shown in **Figure 8**, shallow groundwater appears to flow from the south to the north toward the TMC. Several groundwater locations exhibited elevations below the water level reported in the TMC, indicating the TMC may act as a receiving stream or discharge to the immediately surrounding area based on fluctuations in rainfall and HCWWTP operations. The hydraulic gradient appears quite flat directly along the TMC perimeter. The low elevation reported at B22-119K-PZ (-0.45 feet amsl) could be anomalous but suggests groundwater migration from this area to the TMC may be inhibited.

3.2.2. Groundwater Vapor Intrusion Assessment

Groundwater data from all sample collection events (2016 through 2020) were screened to determine whether the individual sample results exceeded the USEPA VI Screening Levels (set to a Target Cancer Risk (TCR) of $1E-5$ and Target Hazard Quotient (THQ) of 1) as determined by the online VI Screening Level (VISL) Calculator (<https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls>). The PALs specified in the QAPP are based upon drinking water use, which is not a potential exposure pathway for groundwater on the property.

Two aqueous results exceeded the individual VI TCR or THQ criteria specified by the VISL Calculator during both the 2018 and 2020 groundwater sampling events. Each exceedance was identified at B22-119-PZ. In 2018, the maximum naphthalene and benzene detections of 2,550 $\mu\text{g/L}$ and 859 $\mu\text{g/L}$, respectively, at B22-119-PZ exceeded the corresponding TCR VISLs of 200 $\mu\text{g/L}$ and 69 $\mu\text{g/L}$. Similarly, in May 2020 the maximum naphthalene and benzene detections of 886 $\mu\text{g/L}$ and 835 $\mu\text{g/L}$, respectively, exceeded the same VISLs.

Following the initial screening, a cumulative VI risk assessment was also performed for each individual sample location, with the results separated by cancer risk versus non-cancer hazard. All compounds with detections (and corresponding VISLs) were included in the computation of the cumulative cancer risk, and all compounds with detections exceeding 10% of the THQ level were included in the evaluation of non-cancer hazard. One location (B22-119-PZ) exceeded a cumulative VI cancer risk of $1E-5$ during the 2018 and 2020 sampling events, due to the elevated detections of naphthalene and benzene at this sample location. There were no exceedances of the acceptable VI non-cancer hazard identified during the cumulative evaluation. The results of the cumulative VI comparisons are provided in **Table 5**.

The presence and absence of groundwater impacts in the vicinity of the PORI Lagoon have been adequately described. Groundwater is not used on the TPA property (and is not proposed to be utilized). Location B22-119-PZ exhibited concentrations of benzene and naphthalene which could present a potential VI risk if a structure were to be proposed in this area. The groundwater impacts at B22-119-PZ have been adequately delineated, and the elevated VI risk does not appear to be widespread beyond this isolated location. As outlined in the Sub-Parcel B22-2 RADWP, B22-119-PZ is located to the north of the PORI Lagoon and outside of the footprint of the proposed logistics center building, which is planned for construction to the south of the PORI Lagoon. Further, the data obtained from B22-119CC-PZ to the south of the PORI Lagoon indicates a lack of significant groundwater impacts.

4.0 EVALUATION OF THE CORRECTIVE MEASURES ALTERNATIVES

4.1. GENERAL

Based on the results and conclusions of the preceding investigations at the PORI Lagoon, this section presents a summary of the identification and evaluation of remedial alternatives for the PORI Lagoon in general accordance with USEPA guidance under RCRA. In particular, this section presents the establishment of media cleanup objectives, the identification of remedial alternatives for meeting the cleanup objectives, and a recommendation of the most appropriate remedial alternatives based on the evaluation.

4.2. ESTABLISHMENT OF MEDIA CLEANUP OBJECTIVES

This section summarizes the cleanup objectives for the PORI Lagoon based on the results of the preceding investigations, plans for redevelopment (as outlined in the Sub-Parcel B22-2 RADWP), applicable environmental cleanup regulations, and an evaluation of potential risks to human health and the environment. In general, the objectives for the PORI Lagoon are to mitigate potential risks to future Composite and Construction Workers associated with the identified contamination in the lagoon sediments, and to reduce the cross-media transfer of contaminants to groundwater. These objectives are further discussed as follows:

- Potential future direct contact risks to impacted materials should be mitigated through appropriate containment, treatment, stabilization, and/or removal actions. This objective shall be achieved concurrent with development on Sub-Parcel B22-2. The entire surface area of the lagoon will be capped to prevent direct contact. Areas surrounding the lagoon are addressed in the RADWP.
- Potential future inhalation risks from VOCs/SVOCs should be mitigated through appropriate containment, treatment, stabilization, and/or removal actions. This objective shall be achieved concurrent with development on Sub-Parcel B22-2. At present, there are no occupied structures proposed for construction above the PORI Lagoon; however, soil gas sampling within the building footprint (located south of the PORI Lagoon) was performed pursuant to agency approved methods on December 10, 2020. Results from the soil gas sampling event are detailed in the Sub-Parcel B22-2 Soil Gas Investigation Report (Revision 0 dated January 5, 2021) which indicated a lack of risk to future workers in the proposed building via the VI to indoor air risk pathway.
- The selected remedy should prevent cross-media transfer of contaminants from the PORI Lagoon materials to groundwater. This objective is achieved by the implementation of the selected remedial alternatives. Sentinel monitoring wells will be installed downgradient from the PORI Lagoon outside of the Sub-Parcel B22-2 development boundary. The

proposed downgradient groundwater monitoring plan (including point of compliance, compliance thresholds, and contingency response actions) is discussed in Section 5 of this CMS Report. Ultimately the monitoring wells will be incorporated into the property-wide groundwater monitoring program.

4.3. IDENTIFICATION & SELECTION OF CORRECTIVE MEASURES ALTERNATIVES

This section presents the identification of corrective measure alternatives evaluated in this CMS Report. The corrective measure alternatives were developed based on the description of the current situation, communications with the USEPA and the MDE, similar remedies implemented elsewhere on the property, and professional experience with the identification of corrective measure alternatives, and consist of the following:

- Alternative 1 – No Action Alternative: This alternative does not include the implementation of any corrective measures, and essentially represents leaving the PORI Lagoon in its historical condition. This alternative does not address the media cleanup objectives, but is presented as a baseline condition for comparison purposes.
- Alternative 2 – In-Situ Stabilization of Impacted Sediments: This alternative was developed to meet the cleanup objectives, and generally involves mixing the PORI Lagoon sediments with dry Portland cement to encapsulate the sediments and reduce the leaching of contaminants into the surrounding groundwater.
- Alternative 3 – Excavation and Removal of Impacted Sediments: This alternative was developed to meet the media cleanup objectives, and generally involves the excavation and removal of PORI Lagoon sediments to approximately 5 feet below the observed water table where a hard bottom was observed. Sediments were characterized utilizing the Toxicity Characteristic Leaching Procedure (TCLP) method to determine if the material could be disposed of in Greys Landfill. Sediments are dried to the extent practical prior to transportation to the on-site Greys Landfill.
- Alternative 4 – Low-Permeability Capping: This alternative was developed to meet the media cleanup objectives, and generally involves the following major activities: placement of a low-permeability cap above the PORI Lagoon (consisting of a pavement cap consistent with the Sub-Parcel B22-2 RADWP requirements) to prevent direct contact exposures, long-term property use restrictions including a requirement for further evaluation of vapor controls for any future building built over this fill, and downgradient groundwater monitoring to ensure that the controls remain effective.

The combined approaches of Alternative 3 – Excavation and Removal of Impacted Sediments and Alternative 4 – Low-Permeability Capping were determined to be the most effective corrective measures for the PORI Lagoon. This combination of these alternatives satisfies the media cleanup

objectives, and is an appropriate and favorable corrective measure alternative for the PORI Lagoon sediments. A detailed description of the selected alternatives is provided in Section 4.4, and an evaluation against the RCRA Threshold Criteria and Balancing Criteria is provided in Section 4.5. The implementation of the selected alternatives is discussed in Section 4.6.

4.4. DETAILED DESCRIPTION OF CORRECTIVE MEASURES

Based on the results of the preceding investigation activities, the most appropriate remedy for the PORI Lagoon was to remove the impacted sediment and cap the minimal remaining sediments in place using a low-permeability cap to provide a protective barrier for future exposures. Sediments in the lagoon have since been removed to the extent practicable and transported to the on-site Greys Landfill. The removal of the sediments was detailed in the PORI Lagoon Excavation Completion Report (Revision 0 dated January 6, 2021), which was approved by the MDE via email on January 25, 2021. The forthcoming cap remedy will also reduce infiltration through any remaining PORI Lagoon sediments during precipitation events; thus, the cap will further reduce (but not eliminate) the cross-media transfer of contaminants to groundwater. Contaminants below the water table elevation have been substantially removed during the excavation and the risk of further contamination of the groundwater has been significantly reduced.

The acceptability of the capping remedy was contingent on no building or occupied structure being built above the PORI Lagoon area, which is consistent with the Sub-Parcel B22-2 RADWP. If an occupied structure is proposed above the PORI Lagoon in the future, additional remedial actions or mitigative measures would be required to be evaluated. This evaluation would also take into account the source removal that has been implemented as part of the corrective measures remedy. The PORI Lagoon is located beneath an area designated to be developed as a parking lot on Sub-Parcel B22-2. Therefore, the cap installed above the PORI Lagoon will meet the requirements for pavement caps as outlined in the Sub-Parcel B22-2 RADWP, specifically, all paved areas will be installed with a minimum of 4 inches of compacted aggregate base and a minimum of 4 inches of overlying pavement surface. The excavated PORI Lagoon area has been filled using reclaimed processed slag aggregate and will be capped as part of the RADWP.

The areas downgradient from the PORI Lagoon will be subject to a long-term groundwater monitoring plan. The proposed downgradient well network is shown on **Figure 14** and includes one existing historical monitoring well (TM13-PZM007) and four new monitoring wells. Two of the newly proposed wells are located directly along the perimeter of the TMC, and two sentinel wells will be located roughly 100 to 150 feet downgradient from the PORI Lagoon. The final placement of the sentinel wells may be adjusted to ensure they are placed outside of the Sub-Parcel B22-2 development boundary. A NAPL recovery well shall also be installed at the former location of B22-119K-PZ, which was the only location to accumulate measurable NAPL that was reactive to the oil-water interface probe. Based on the limited accumulation of NAPL, a passive recovery method such as an absorbent down-well sock will be used. The monitoring and reporting schedule for the well network is established in Section 5 of this CMS Report.

Site-specific health and safety controls will be implemented to mitigate Construction Worker risks during the remaining remedy installation. This includes using Modified Level D Personal Protective Equipment (PPE) for those completing ground intrusive work throughout the project duration in accordance with the requirements of the property-wide PPE Standard Operating Procedure (SOP) that was provided with the Sub-Parcel B22-2 RADWP.

Institutional controls will also be required to be established to protect future Composite and Construction Workers against inadvertent contact with potentially impacted media. The anticipated institutional controls requirements were specified in the RADWP but are also summarized below.

4.5. EVALUATION OF CORRECTIVE MEASURES AGAINST RCRA CRITERIA

The selected excavation and capping remedy with institutional controls was evaluated for consistency with the RCRA Threshold Criteria and Balancing Criteria. The Threshold Criteria assess the overall protection of human health and the environment, as well as achievement of media cleanup objectives and control of sources of releases. The Balancing Criteria assess long-term effectiveness and permanence; reduction of toxicity, mobility or volume; short-term effectiveness; implementability; cost effectiveness; and community and State acceptance.

4.5.1. Threshold Criteria

Protect Human Health and the Environment: The assessment against this criterion evaluates how the remedy, as a whole, protects and maintains protection of human health and the environment. This criterion is satisfied when response actions are complete. The purpose of this remedy was to remove impacted sediments and provide a protective barrier between human site users and any remaining impacted materials, and to protect the environment by preventing surface water from contacting any potentially impacted materials remaining in place. The capping and institutional control remedy will eliminate risk to current and future industrial workers by preventing exposure to on-site media in the PORI Lagoon. Groundwater does not present a direct human health hazard since there is no groundwater use on the property. Implementation of the proposed site and groundwater use restrictions will address the residual risk and will also protect future workers by eliminating or controlling potential exposure pathways, thus, reducing potential intake and contact of contaminants by human receptors. Additionally, soil gas has been sampled within the proposed building footprint (outside of the PORI Lagoon area) prior to remedy implementation. The soil gas analyses did not identify elevated concentrations of contaminants in soil vapors and inhalation of contaminants is not believed to be a risk for future site workers in the proposed building. Results of the soil vapor sampling were detailed in the Sub-Parcel B22-2 Soil Gas Investigation Report (Revision 0 dated January 5, 2021).

Achieve Media Cleanup Objective: The assessment against this criterion describes how the remedy meets the cleanup objectives, which are risk reduction and prevention of cross-media

transfer. Sediments in the lagoon have been removed to the extent practicable. The capping remedy will also protect current/future Composite Workers and Construction Workers from potential exposures to constituents remaining in the PORI Lagoon at levels that may result in risks of adverse health effects. The capping remedy will also reduce infiltration through any remaining PORI Lagoon sediments during precipitation events; thus, the cap will further reduce (but not eliminate) the cross-media transfer of contaminants to groundwater. The additional control measures included in the proposed remedy, such as Materials Management Plan requirements and groundwater use restrictions, provide a mechanism to further control and reduce potential further releases of contaminants. This is achieved by eliminating the potential for groundwater use and requiring proper planning for intrusive activities. Given the controlled site access and groundwater use restrictions, the remedy will attain soil and groundwater objectives. The activity use restrictions will eliminate current and future unacceptable exposures to both soil and groundwater.

Control the Source of Releases: In its RCRA Corrective Action proposed remedies, USEPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. Controlling the sources of contamination relates to the ability of the proposed remedy to reduce or eliminate, to the maximum extent practicable, further releases. The removal of the bulk of the contaminant source is anticipated to significantly reduce or eliminate the migration of contaminants from the PORI Lagoon. The capping remedy will also reduce infiltration through any remaining PORI Lagoon sediments during precipitation events, thus further controlling the source and reducing the cross-media transfer of contaminants by 1) lowering the water table and reducing the volume of saturated material, and 2) reducing the amount of water infiltrating through media (via precipitation) which will reduce the partitioning of organics based on the concentration gradient between the solid media and the water.

4.5.2. Balancing Criteria

Long-Term Reliability and Effectiveness: The assessment against this criterion evaluates the long-term effectiveness of the remedy in maintaining protection of human health and the environment after the response objectives have been met. The primary focus of this criterion is the extent and effectiveness of the controls that may be required to manage the risk posed by untreated wastes in the PORI Lagoon. The excavation and capping remedies have been proven to be effective in the long-term at similar sites with similar conditions. The capping remedy will permanently contain any remaining contaminated media in place. In order for the cap to effectively act as a barrier, regular inspections will be required to determine if erosion or cracks have formed that could expose workers to contaminated materials. Additionally, the areas downgradient from the PORI Lagoon will be subject to a long-term groundwater monitoring plan to ensure that the controls remain effective. The monitoring network shall include wells directly along the perimeter of the TMC as well as sentinel wells between the TMC and the PORI Lagoon.

Institutional controls will be implemented to protect future Composite and Construction Workers against inadvertent contact with potentially impacted media. The anticipated institutional controls

are specified in the Sub-Parcel B22-2 RADWP, but include groundwater use restrictions, notice to the MDE and/or USEPA in the event of future excavations that will breach the remedy, requirement for a HASP in the event of future excavations, characterization and disposal requirements for any excavated material, and implementation of inspection procedures and maintenance of the containment remedies. The Tenant on Sub-Parcel B22-2 will be required to sign onto the Environmental Covenant with restriction in the No Further Action Letter (NFA) issued by the MDE.

The remedy will maintain protection of human health and the environment over time by controlling exposures to the constituents potentially remaining in the PORI Lagoon and reducing the cross-media transfer of contaminants to groundwater. The long-term effectiveness is high, as use restrictions are readily implementable and easily maintained. Given the historical, heavily industrial uses of the surrounding property area, including the presence of landfills, land and groundwater use restrictions are expected to continue in the long term.

Reduction of Toxicity, Mobility, or Volume of Waste: The assessment against this criterion evaluates the anticipated performance of specific technologies that a remedial action alternative may employ. The removal of the impacted sediment has substantially reduced the volume of waste in the PORI Lagoon. Subsequent capping will prevent infiltration through the unsaturated zone and reduce the potential for cross-media transfer into groundwater. Thus, the volume and mobility of contaminants are reduced by the removal and capping remedy.

Short-term Effectiveness: The assessment against this criterion examines how well the remedy protects human health and the environment during the construction and implementation until response objectives have been met. This criterion also includes an estimate of the time required to achieve protection for either the entire site or individual elements associated with specific site areas or threats. The risks to the Construction Worker during remedy implementation are mitigated by executing the Modified Level D PPE requirements outlined in the property-wide PPE SOP. The short-term risk to site workers following these upgraded health and safety measures during implementation of the remedy will be low, leading to a high level of short-term effectiveness for protection of future site users and the environment. Short-term effectiveness in protecting on-site workers and the environment will be achieved through establishing appropriate management, construction, health and safety, and security procedures. Proper water management protocols will be implemented to prevent discharges offsite. Security and fences will be used to control access during construction on Sub-Parcel B22-2.

Implementability: The assessment against this criterion evaluates the technical and administrative feasibility, including the availability of trained and experienced personnel, materials, and equipment. Technical feasibility includes the ability to construct and operate the technology, the reliability of the technology, and the ability to effectively monitor the technology. Administrative feasibility includes the capability of obtaining permits, meeting permit

requirements, and coordinating activities of governmental agencies. The proposed remedy will use readily available, typically acceptable, and proven technologies.

Cost Effectiveness: The assessment against this criterion evaluates the capital costs, annual Operating and Maintenance (O&M) costs, and the net present value (NPV) of this remedy relative to alternatives. The cost of excavation and disposal were mitigated by the availability of on-site excavation equipment and the on-site Greys Landfill. The capping remedy remedial costs will be incurred as part of the site development on Sub-Parcel B22-2 and are consistent with the RADWP.

State Support / Agency Acceptance: MDE has been involved throughout the investigation and redevelopment process. MDE has accepted the excavation (source removal) remedy. The proposed capping restrictions included in the proposed remedy are generally recognized as commonly employed measures for long-term stewardship.

The selected excavation and capping remedy with institutional controls will satisfy the RCRA Threshold Criteria and Balancing Criteria and will do so in a manner that ensures reliable implementation and effectiveness. The remedy is cost-effective and consistent with the proposed development plan.

4.6. IMPLEMENTATION

Implementation of the excavation and removal remedy was detailed in the PORI Lagoon Excavation Completion Report (Revision 0 dated January 5, 2021), which was approved by the MDE via email on January 25, 2021. Material removal was completed over a roughly two-week period beginning in late-December 2020. Material was removed and transported to Greys Landfill, located elsewhere on the TPA property. Excavated material was dewatered within the local drainage area of the PORI Lagoon, such that all water removed from the wet material would flow back into the lagoon. Material was sampled for TCLP parameters and determined to be non-hazardous prior to disposal. Material was excavated to approximately 5 feet below the observed water table, where a hard bottom was encountered. Following the completion of material removal, confirmation samples were collected from the sidewalls surrounding the lagoon to verify the removal of the significantly contaminated material. Confirmation sample results were detailed in the Excavation Completion Report.

The PORI Lagoon has since been backfilled using MDE-approved materials (reclaimed processed slag aggregate). The PORI Lagoon is located beneath an area designated to be developed as a parking lot. Therefore, the cap installed above the PORI Lagoon will meet the requirements for pavement caps as outlined in the Sub-Parcel B22-2 RADWP, specifically, all paved areas will be installed with a minimum of 4 inches of compacted aggregate base and a minimum of 4 inches of overlying pavement surface. The capping activities will be conducted concurrent with development on Sub-Parcel B22-2.

5.0 MONITORING & CONTINGENCY MEASURES

Source material excavation is anticipated to significantly reduce or eliminate the migration of contaminants from the PORI Lagoon to the TMC. Following the completion of capping (concurrent with Sub-Parcel B22-2 development), the areas downgradient from the PORI Lagoon will be subject to a long-term groundwater monitoring plan. The well network will be further evaluated and ultimately be incorporated into the property-wide groundwater monitoring program.

The proposed downgradient well network is shown on **Figure 14** and includes one existing historical monitoring well (TM13-PZM007) and four new monitoring wells. Two of the newly proposed wells are located directly along the perimeter of the TMC, and two sentinel wells will be located roughly 100 to 150 feet downgradient from the PORI Lagoon. The final placement of the sentinel wells may be adjusted to ensure they are placed outside of the Sub-Parcel B22-2 development boundary.

The five downgradient wells are proposed to be monitored for VOCs, SVOCs, and TPH/Oil & Grease. Initially, the well network will be sampled on a quarterly basis until three consecutive quarters of groundwater data reflect a stable or decreasing trend in groundwater contaminants at the point of compliance wells (discussed in Section 5.1). An initial report presenting the well installation logs and first round of sampling data will be provided to the agencies within 30 days of the receipt of data. The subsequent groundwater monitoring results will be presented to the MDE on a quarterly basis. Downgradient well installation and groundwater monitoring are anticipated to be completed in the fourth quarter of 2021, after the Sub-Parcel B22-2 development project is completed (anticipated by August 2021).

A NAPL recovery well shall also be installed at the former location of B22-119K-PZ, which was the only location to accumulate measurable NAPL that was reactive to the oil-water interface probe. Based on the limited accumulation of NAPL, a passive recovery method such as an absorbent down-well sock will be used. The passive NAPL recovery results will be submitted to the MDE on an annual basis.

5.1. POINT OF COMPLIANCE

Groundwater monitoring will be completed at the proposed downgradient groundwater monitoring network presented on **Figure 14**. The point of compliance for the monitoring well network will be the row of three wells (TM13-PZM007 and the two additional proposed monitoring wells) located along the southern bank of the TMC. The two sentinel wells, located roughly 100 to 150 feet downgradient from the PORI Lagoon, will act as early detection points for the potential migration of groundwater contaminants.

5.2. COMPLIANCE THRESHOLDS

Groundwater within the area downgradient of the lagoon will be analyzed for VOCs, SVOCs, and TPH/Oil & Grease. The table below outlines the compliance threshold concentrations for each of the analytes to be evaluated at the three point of compliance wells. The proposed thresholds are significantly below the historical contaminant levels for VOCs, SVOCs, TPH-DRO, and Oil & Grease observed in the direct vicinity of the PORI Lagoon (as shown on the report attachments), and significantly below the Constituent Threshold Limits for treatment at the HCWWTP.

<u>Analyte</u>	<u>Concentration (ug/L)</u>
VOCs	500
SVOCs	500
TPH-DRO	5,000
TPH-GRO	5,000
Oil & Grease	5,000

5.3. CONTINGENCIES FOR COMPLIANCE EXCEEDANCES

An exceedance of these compliance thresholds will necessitate an evaluation of contingency response actions. The magnitude and consistency of the exceedance and the compound exceeding the threshold will dictate the necessity and selection of appropriate response actions. The agencies will be notified of any exceedances at the point of compliance and, if warranted, a Work Plan will be submitted to propose appropriate response actions. Potential response actions are outlined below. Additional design details would be prepared and submitted within the Work Plan prior to implementation.

Sparge Curtain Extraction – This response action will involve the injection of pressurized air through sparge wells into the saturated zone of the subsurface to volatilize and promote biodegradation of groundwater and soil contaminants. In sparge curtain applications, a vacuum is applied to the subsurface through extraction wells to remove the soil vapors from the subsurface. If necessary, a sparge curtain extraction system would likely be installed upgradient of the point of compliance and downgradient of the PORI Lagoon. This remediation method has been proven to be effective elsewhere on the TPA property.

In-Situ Activated Carbon Injection – This response action will involve the injection of liquified activated carbon into the subsurface. A carbon remedy would typically be injected through specialized wells at high pressures to disperse the activated carbon across an area upgradient of the point of compliance. Activated carbon can treat volatile and petroleum compounds through adsorption and biodegradation.

6.0 JUSTIFICATION & RECOMMENDATION OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the detailed evaluation of corrective measures alternatives discussed in Section 4, the combined approaches of Alternative 3 – Excavation and Removal of Impacted Sediments and Alternative 4 – Low-Permeability Capping were determined to be the most effective corrective measures for the PORI Lagoon. These combined alternatives clearly satisfy the evaluation criteria better than the No Action Alternative, and are an appropriate and favorable corrective measure response for the PORI Lagoon sediments. Supporting rationale for selection of the remedial alternatives is summarized below:

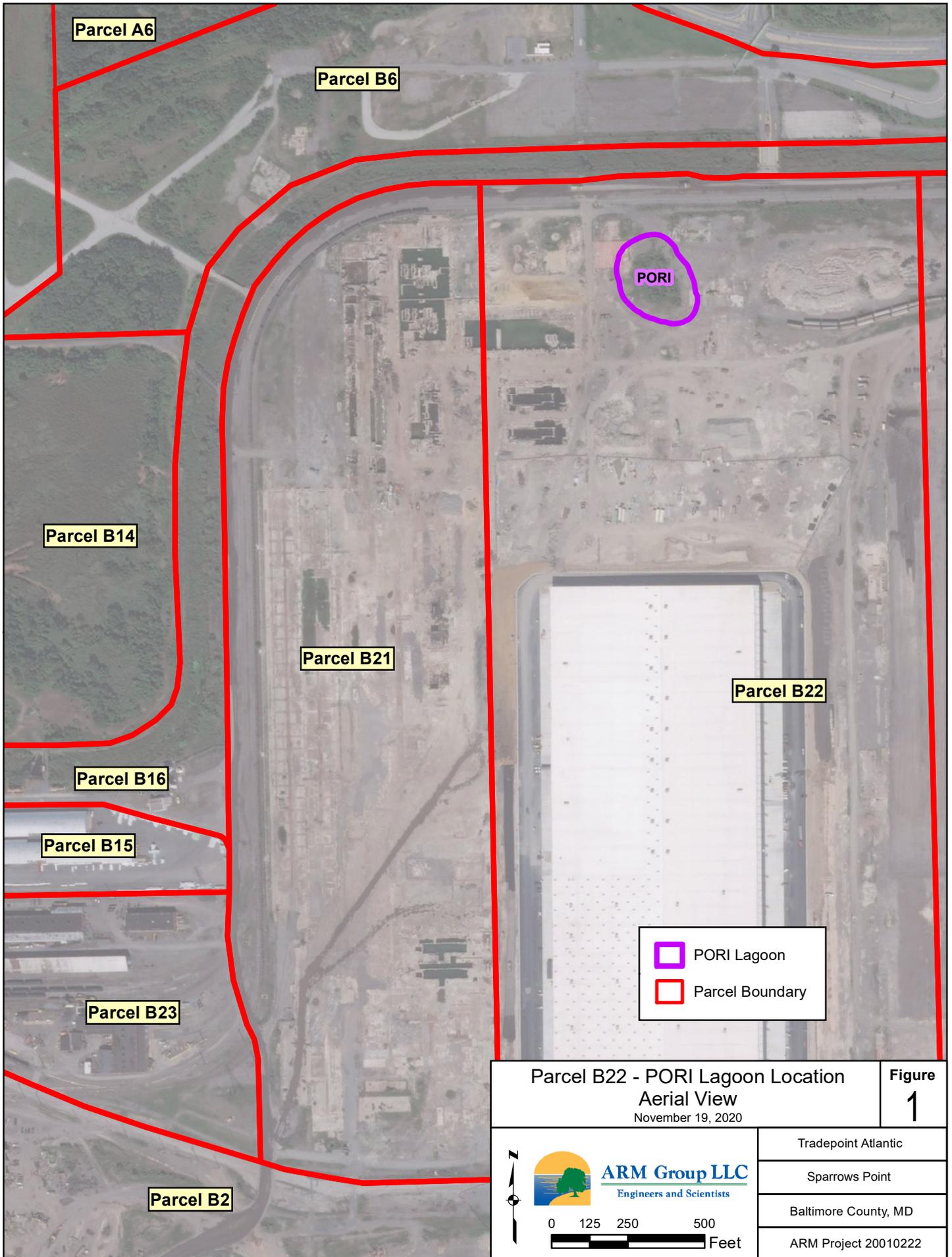
- The alternatives meet the media cleanup objectives;
- The alternatives satisfy the RCRA Threshold Criteria and Balancing Criteria;
- The alternatives are readily implemented with proven and reliable technologies;
- The alternatives provide for protection of human health and the environment; and
- The alternatives can be conducted in accordance with applicable regulations.

Implementation of the material excavation and removal remedy was detailed in the PORI Lagoon Excavation Completion Report (Revision 0 dated January 5, 2021), which was approved by the MDE via email on January 25, 2021. The PORI Lagoon has since been backfilled using MDE-approved materials (reclaimed processed slag aggregate). The capping activities above the former lagoon will be conducted concurrent with development on Sub-Parcel B22-2. Pavement thickness will meet the requirements specified in the RADWP.

7.0 REFERENCES

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FIGURES



Parcel A6

Parcel B6

Parcel B14

Parcel B21

Parcel B22

Parcel B16

Parcel B15

Parcel B23

Parcel B2

PORI

-  PORI Lagoon
-  Parcel Boundary

Parcel B22 - PORI Lagoon Location
Aerial View

November 19, 2020

Figure
1



ARM Group LLC
Engineers and Scientists

0 125 250 500
Feet

Tradepoint Atlantic

Sparrows Point

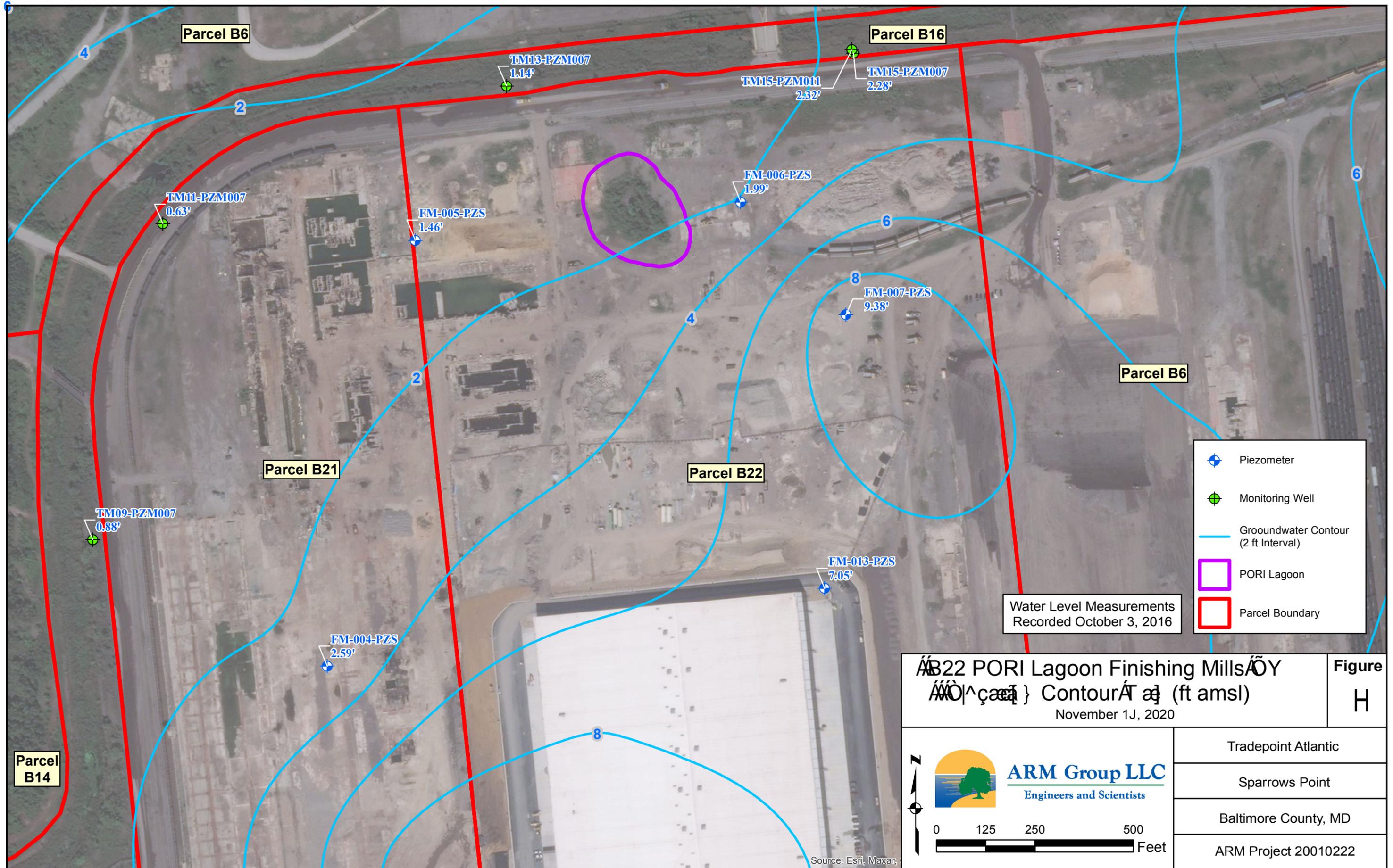
Baltimore County, MD

ARM Project 20010222



**B22 PORI Lagoon Finishing Mills Phase II
Organics GW PAL Exceedances (ug/L)** **Figure 2**
November 19, 2020

 <p>ARM Group LLC Engineers and Scientists</p>	Tradepoint Atlantic
	Sparrows Point
	Baltimore County, MD
	ARM Project 20010222



	Piezometer
	Monitoring Well
	Groundwater Contour (2 ft Interval)
	PORI Lagoon
	Parcel Boundary

Water Level Measurements Recorded October 3, 2016

B22 PORI Lagoon Finishing Mills
 Contour (ft amsl)

November 1J, 2020

Figure

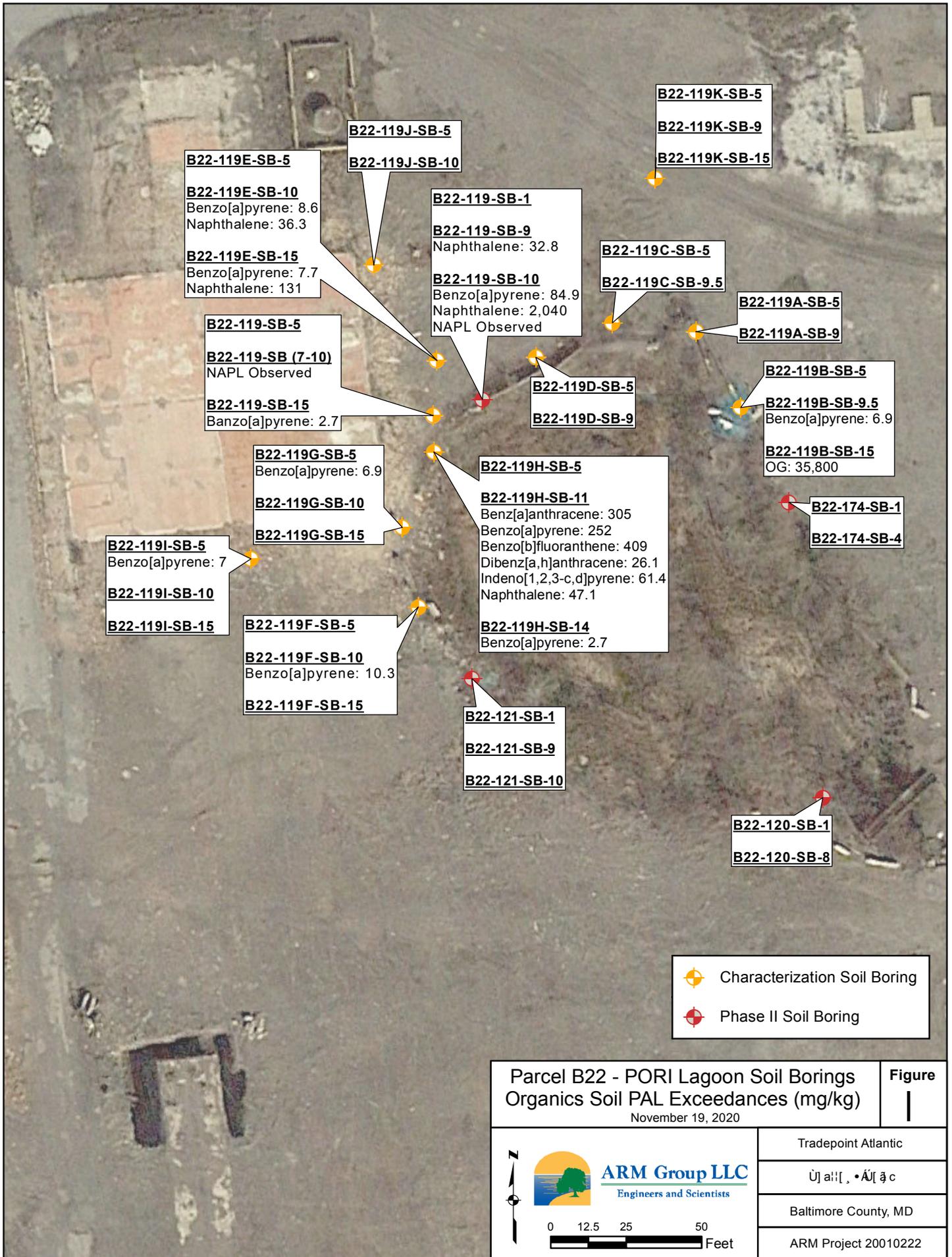
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ARM Group LLC
 Engineers and Scientists

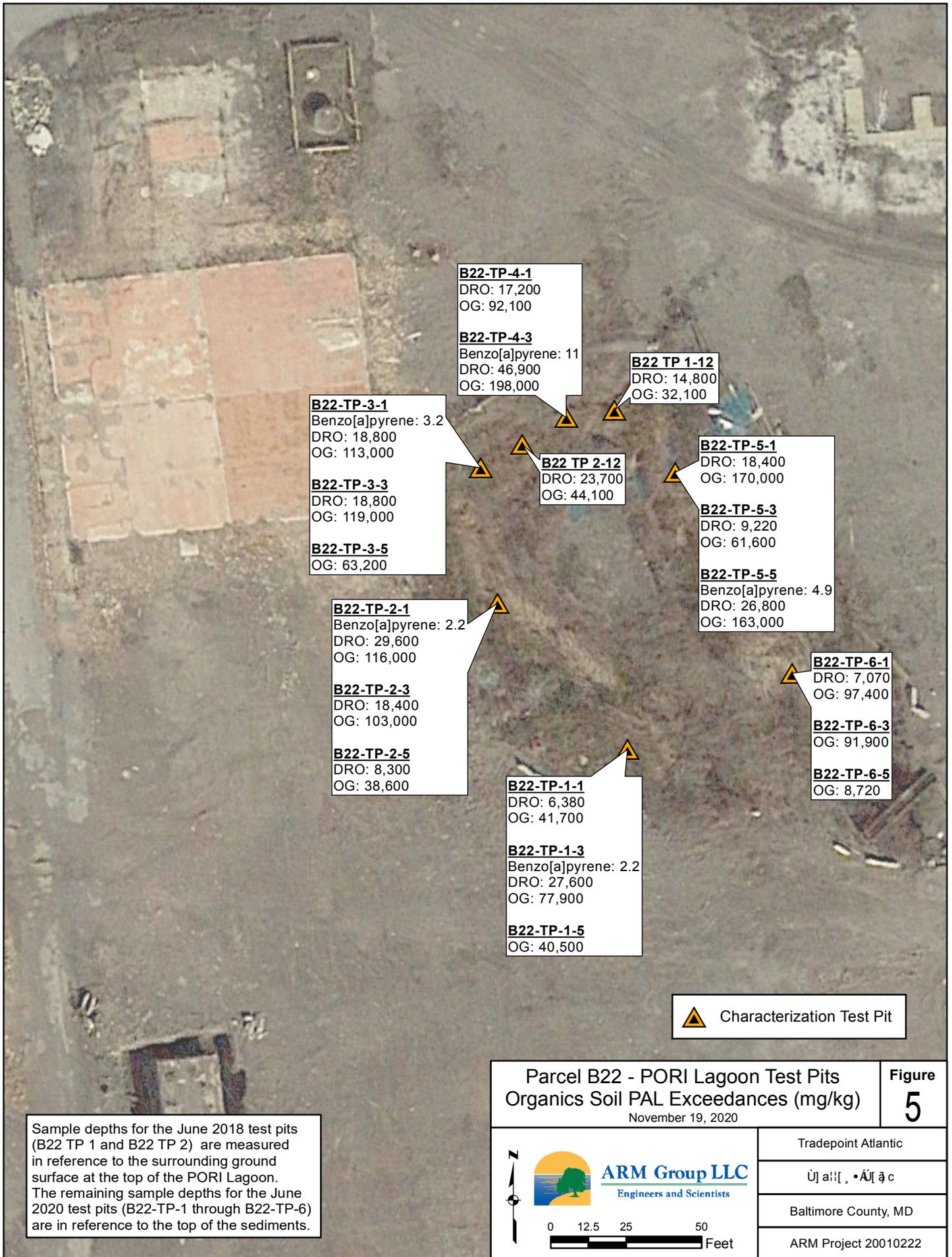
0 125 250 500 Feet

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010222

Source: Esri, Maxar,



<p>Parcel B22 - PORI Lagoon Soil Borings Organics Soil PAL Exceedances (mg/kg) November 19, 2020</p>		<p>Figure 1</p>
		<p>Tradepoint Atlantic</p>
		<p>Ü] a[[, •ÁU[ã c</p>
		<p>Baltimore County, MD</p>
		<p>ARM Project 20010222</p>



Parcel B22 - PORI Lagoon Test Pits
 Organics Soil PAL Exceedances (mg/kg)

Figure
5

November 19, 2020



ARM Group LLC
 Engineers and Scientists

0 12.5 25 50 Feet

Tradepoint Atlantic

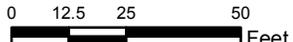
11111

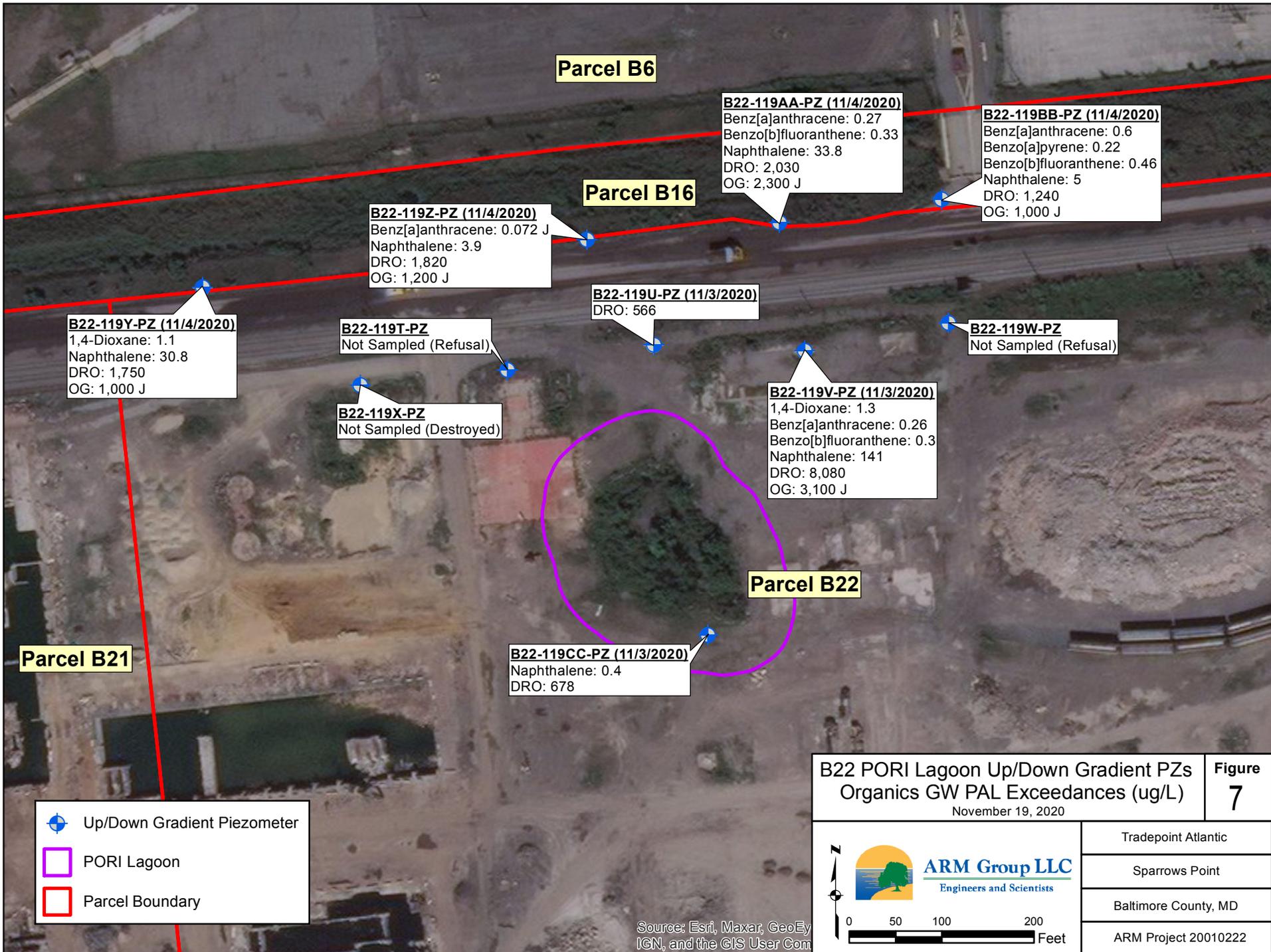
Baltimore County, MD

ARM Project 20010222



 Characterization Piezometer

B22 PORI Lagoon Organics GW PAL Exceedances (ug/L) November 19, 2020		Figure 6
		Tradepoint Atlantic
		Sparrows Point
		Baltimore County, MD
		ARM Project 20010222



Parcel B6

Parcel B16

Parcel B22

Parcel B21

B22-119AA-PZ (11/4/2020)
 Benz[a]anthracene: 0.27
 Benzo[b]fluoranthene: 0.33
 Naphthalene: 33.8
 DRO: 2,030
 OG: 2,300 J

B22-119BB-PZ (11/4/2020)
 Benz[a]anthracene: 0.6
 Benzo[a]pyrene: 0.22
 Benzo[b]fluoranthene: 0.46
 Naphthalene: 5
 DRO: 1,240
 OG: 1,000 J

B22-119Z-PZ (11/4/2020)
 Benz[a]anthracene: 0.072 J
 Naphthalene: 3.9
 DRO: 1,820
 OG: 1,200 J

B22-119U-PZ (11/3/2020)
 DRO: 566

B22-119W-PZ
 Not Sampled (Refusal)

B22-119Y-PZ (11/4/2020)
 1,4-Dioxane: 1.1
 Naphthalene: 30.8
 DRO: 1,750
 OG: 1,000 J

B22-119T-PZ
 Not Sampled (Refusal)

B22-119X-PZ
 Not Sampled (Destroyed)

B22-119V-PZ (11/3/2020)
 1,4-Dioxane: 1.3
 Benz[a]anthracene: 0.26
 Benzo[b]fluoranthene: 0.3
 Naphthalene: 141
 DRO: 8,080
 OG: 3,100 J

B22-119CC-PZ (11/3/2020)
 Naphthalene: 0.4
 DRO: 678

**B22 PORI Lagoon Up/Down Gradient PZs
 Organics GW PAL Exceedances (ug/L)**
 November 19, 2020

**Figure
 7**

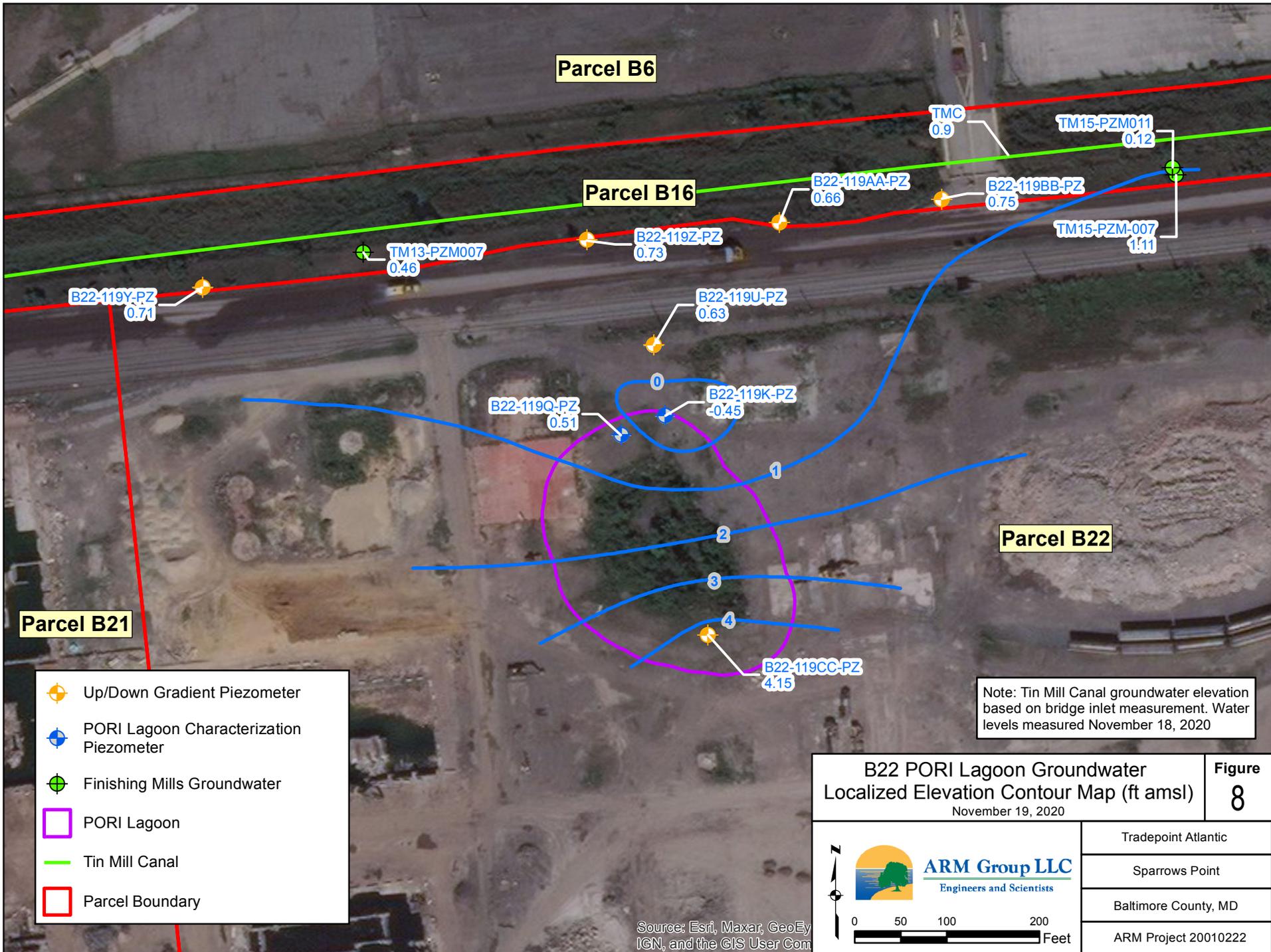
- Up/Down Gradient Piezometer
- PORI Lagoon
- Parcel Boundary

ARM Group LLC
 Engineers and Scientists

0 50 100 200
 Feet

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010222

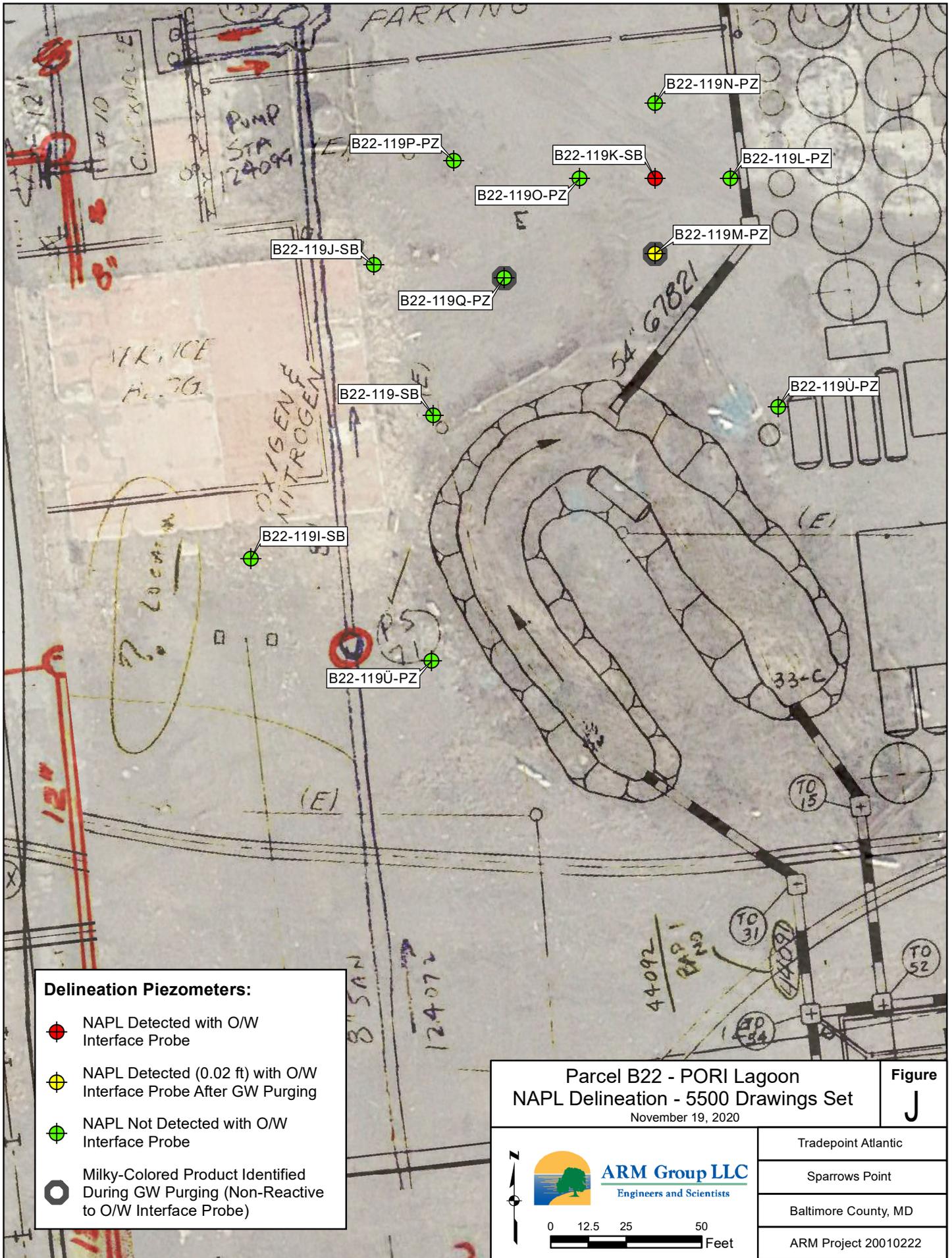
Source: Esri, Maxar, GeoEye, IGN, and the GIS User Com



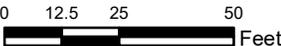
Note: Tin Mill Canal groundwater elevation based on bridge inlet measurement. Water levels measured November 18, 2020

B22 PORI Lagoon Groundwater Localized Elevation Contour Map (ft amsl) November 19, 2020		Figure 8
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic
		Sparrows Point
		Baltimore County, MD
		ARM Project 20010222

Source: Esri, Maxar, GeoEye, IGN, and the GIS User Com



- Delineation Piezometers:**
- NAPL Detected with O/W Interface Probe
 - NAPL Detected (0.02 ft) with O/W Interface Probe After GW Purging
 - NAPL Not Detected with O/W Interface Probe
 - Milky-Colored Product Identified During GW Purging (Non-Reactive to O/W Interface Probe)

<p>Parcel B2 - PORI Lagoon NAPL Delineation - 5500 Drawings Set November 19, 2020</p>		<p>Figure J</p>
 <p>ARM Group LLC Engineers and Scientists</p>		<p>Tradepoint Atlantic</p>
		<p>Sparrows Point</p>
<p>0 12.5 25 50 Feet</p>		<p>Baltimore County, MD</p>
<p>ARM Project 20010222</p>		<p>ARM Project 20010222</p>



**B22 PORI Lagoon CMS
Groundwater Sample Locations**

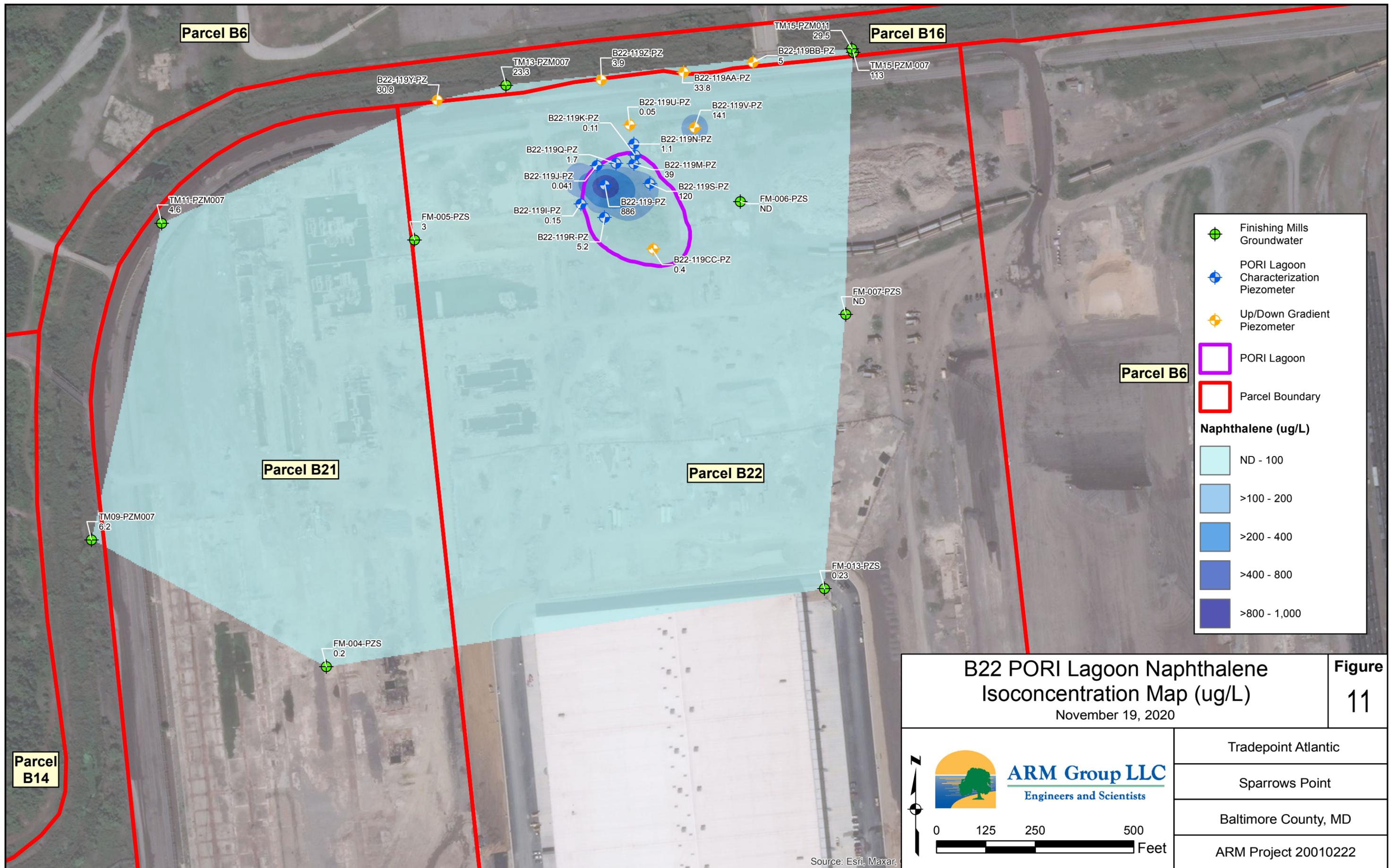
November 19, 2020

**Figure
10**



Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010222

Source: Esri, Maxar,



B22 PORI Lagoon Naphthalene Isoconcentration Map (ug/L)

November 19, 2020

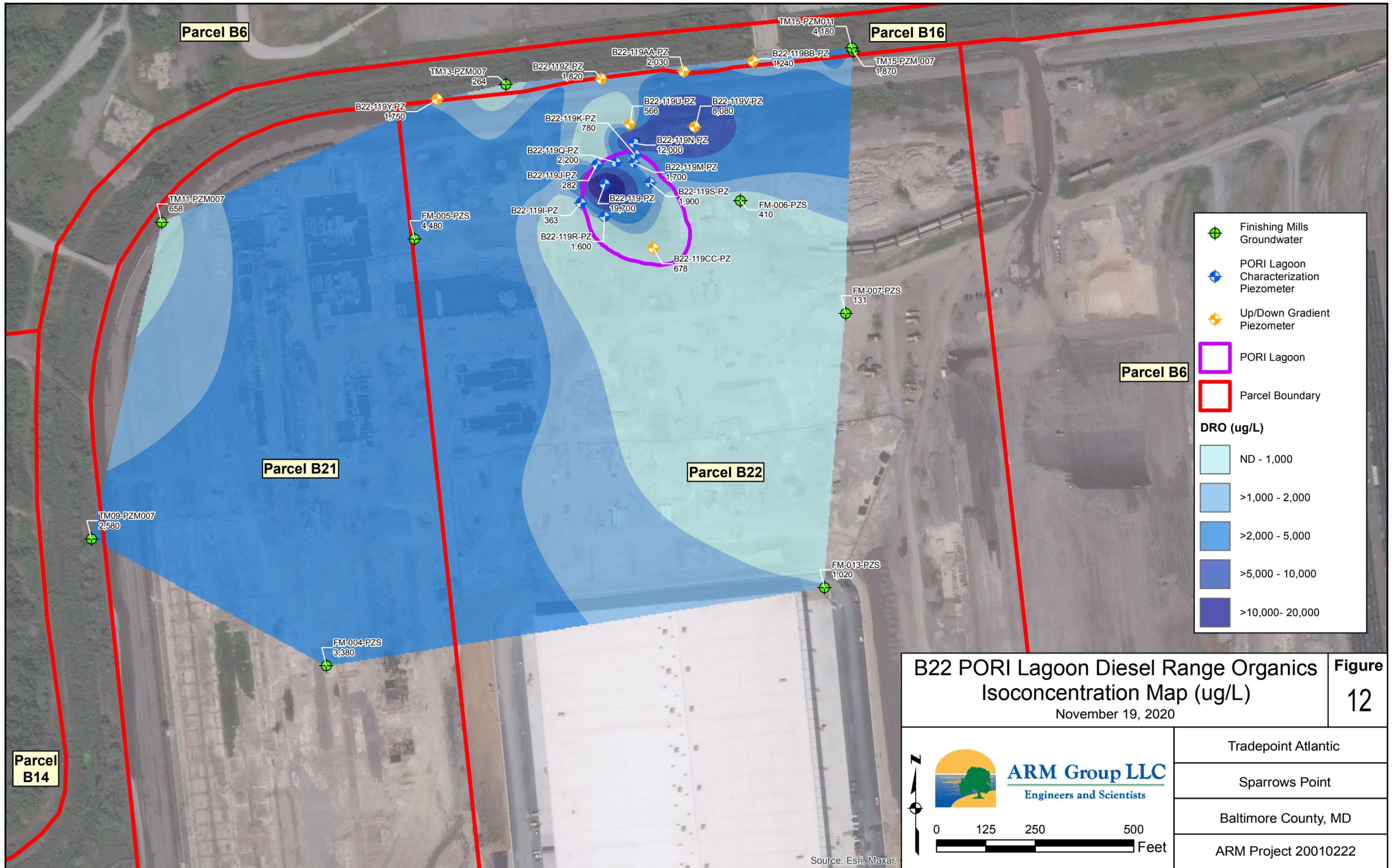
Figure 11


ARM Group LLC
 Engineers and Scientists

0 125 250 500
 Feet

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010222

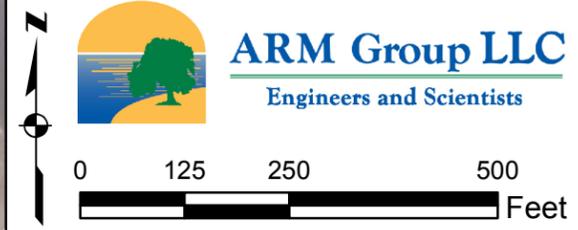
Source: Esri, Maxar,



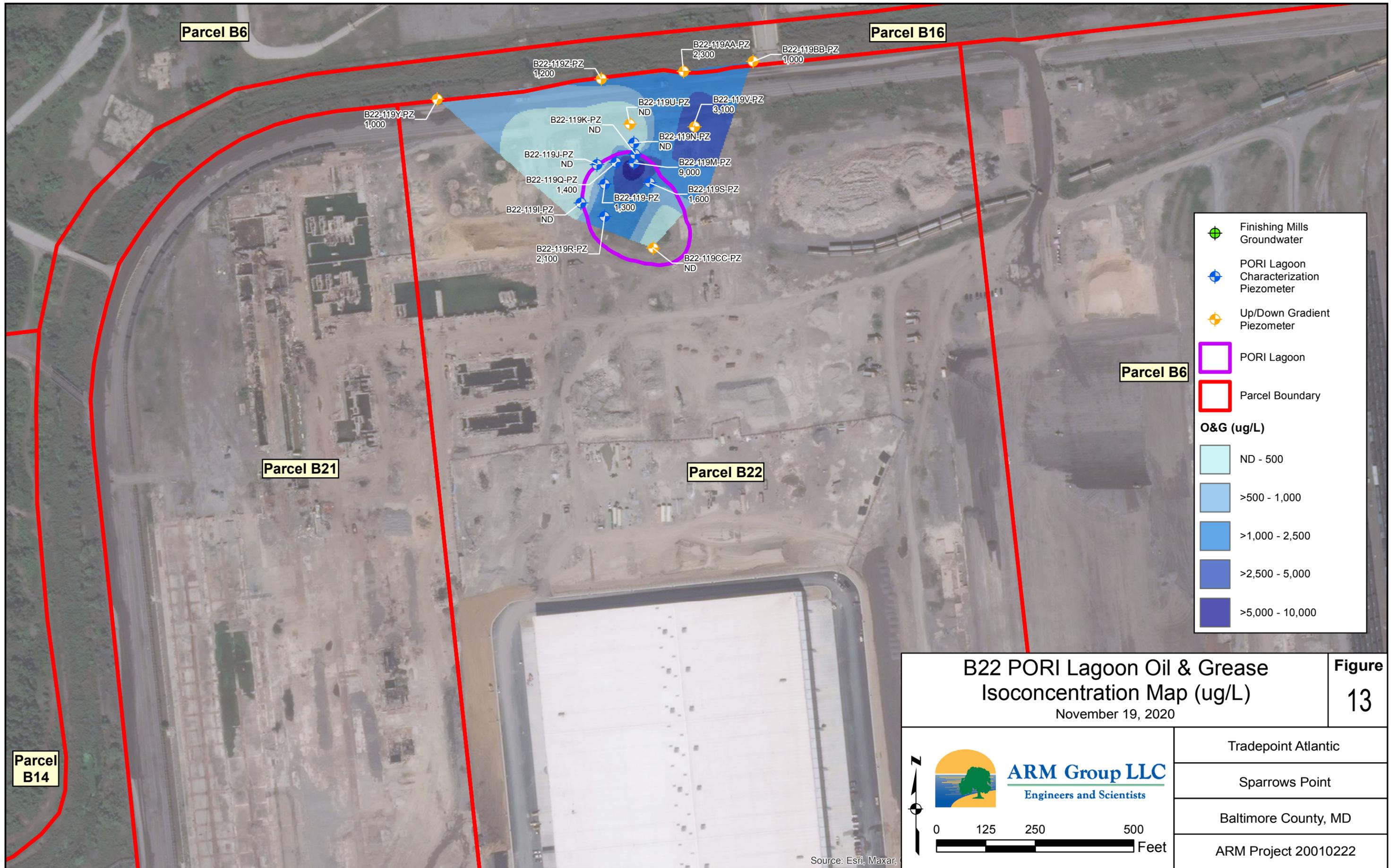
	Finishing Mills Groundwater
	PORI Lagoon Characterization Piezometer
	Up/Down Gradient Piezometer
	PORI Lagoon
	Parcel Boundary
DRO (ug/L)	
	ND - 1,000
	>1,000 - 2,000
	>2,000 - 5,000
	>5,000 - 10,000
	>10,000 - 20,000

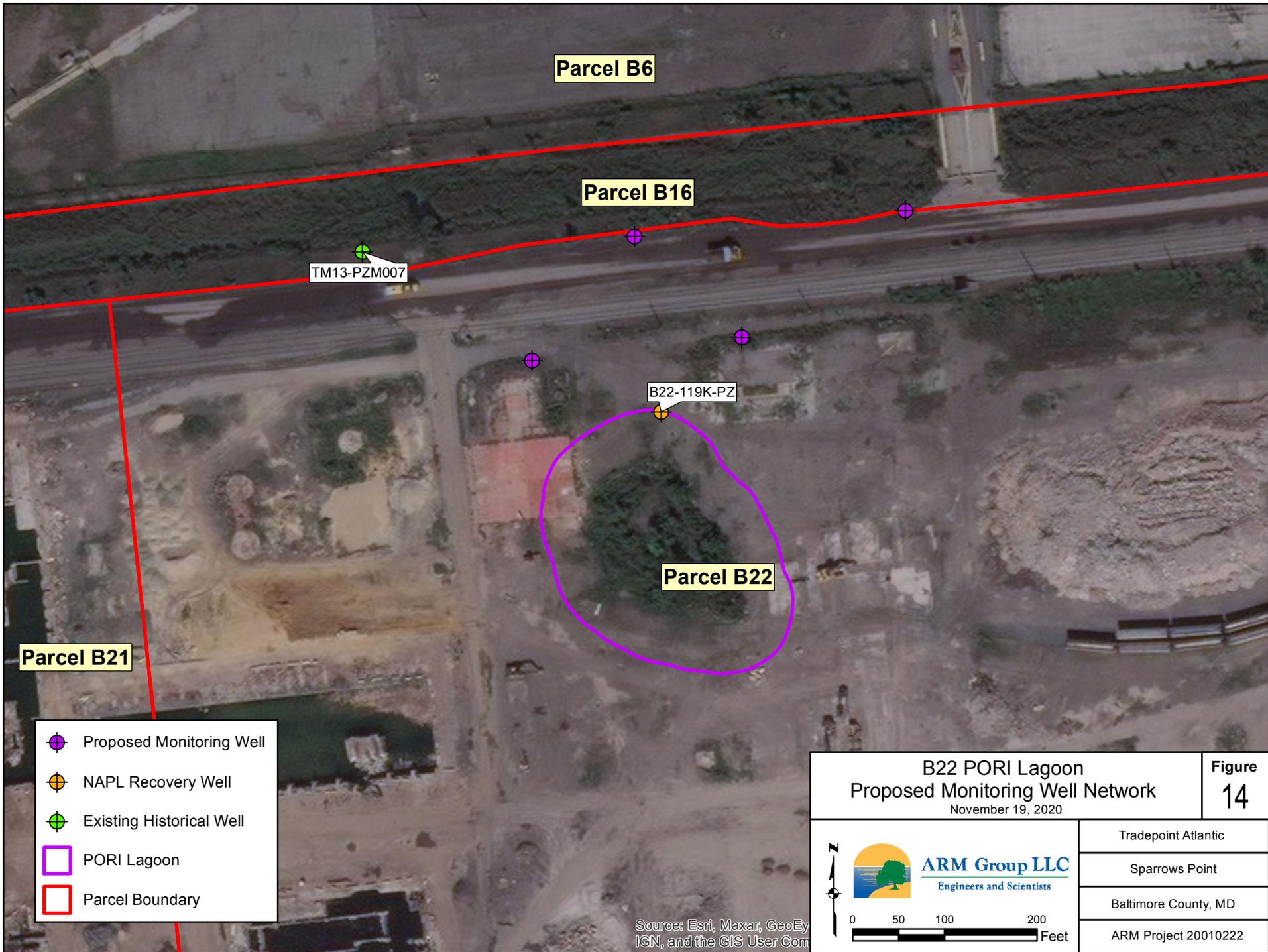
B22 PORI Lagoon Diesel Range Organics Isoconcentration Map (ug/L) **Figure 12**
November 19, 2020

 ARM Group LLC Engineers and Scientists	Tradepoint Atlantic
	Sparrows Point
	Baltimore County, MD
	ARM Project 20010222



Source: Esri, Maxar,





B22 PORI Lagoon Proposed Monitoring Well Network November 19, 2020		Figure 14
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic
		Sparrows Point
		Baltimore County, MD
		ARM Project 20010222

Source: Esri, Maxar, GeoEye, IGN, and the GIS User Com

TABLES

Table 1 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	B22-119-PZ*	B22-119-PZ*	B22-119I-PZ*	B22-119I-PZ*	B22-119J-PZ*	B22-119K-PZ*	B22-119M-PZ*	B22-119N-PZ*	B22-119Q-PZ*	B22-119Q-PZ*	B22-119R-PZ*	B22-119S-PZ*	B22-119U-PZ*	B22-119V-PZ*	B22-119Y-PZ*	
			5/28/2020	5/31/2018	5/31/2018	6/1/2018	5/31/2018	11/3/2020	5/27/2020	5/27/2020	11/3/2020	5/28/2020	5/27/2020	5/27/2020	11/3/2020	11/3/2020	11/4/2020	
Volatile Organic Compounds																		
1,1-Dichloroethane	µg/L	2.7	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1
1,1-Dichloroethene	µg/L	7	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	50 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	50 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	14,000	37.4 J	58.3	58.3	18.9	6.9 J	10 U	6.3 J	10 U	13.7	10 U	10 U	8.2 J	5.8 J	10.3	6.2 J	
Benzene	µg/L	5	835	859	1 U	1 U	1 U	1 U	0.75 J	1.6	0.63 J	3.2	0.63 J	50.5	1 U	2.6	1 U	
Bromomethane	µg/L	7.5	5 U	5 U	1 U	1 U	1 U	1.5	1 U	1.1 B	0.92 B	1 U	1 U	1 U	1.2	1.4	1 U	
Carbon disulfide	µg/L	810	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.5	1 U	1 U	1 U	1.3	1 U	
Chloroform	µg/L	0.22	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Chloromethane	µg/L	190	5 U	5 U	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Cyclohexane	µg/L	13,000	50 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Ethylbenzene	µg/L	700	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.64 J	1 U	0.87 J	1 U	
Isopropylbenzene	µg/L	450	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.82 J	1 U	
Methyl tert-butyl ether (MTBE)	µg/L	14	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.61 J	1 U	1 U	2.6	1 U	
Methylene Chloride	µg/L	5	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.5	
Tetrachloroethene	µg/L	5	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Toluene	µg/L	1,000	79.4	124	0.36 J	1 U	1 U	1 U	0.34 J	0.63 J	1 U	0.8 J	0.32 J	9.7	1 U	1.4	1 U	
Trichloroethene	µg/L	5	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Xylenes	µg/L	10,000	24.6	49.3	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	4.4	3 U	5	3 U	
Semi-Volatile Organic Compounds^																		
1,1-Biphenyl	µg/L	0.83	N/A	24.4 J	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dioxane	µg/L	0.46	0.69	0.87	N/A	0.1 U	0.098 U	0.098 U	0.18	0.1 U	0.17	0.21	3	0.1 U	0.1 U	1.3	1.1	
2,4-Dimethylphenol	µg/L	360	N/A	673	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2-Chlorophenol	µg/L	91	N/A	98 U	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2-Methylnaphthalene	µg/L	36	31.3	75.6	N/A	0.074 J	0.098 U	0.031 J	5.2	2	0.089 J	0.27	1.6	3.7	0.1 U	20.1	0.52	
2-Methylphenol	µg/L	930	N/A	1,820	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3&4-Methylphenol(m&p Cresol)	µg/L	930	N/A	1,260	N/A	2 U	2 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Acenaphthene	µg/L	530	36.6	29.7	N/A	0.49	0.098 U	0.052 J	8	0.99	0.11	0.19	1.8	2.9	1.7	18.2	0.19	
Acenaphthylene	µg/L	530	4.9	38.4	N/A	0.1 U	0.098 U	0.047 J	0.3	0.61	0.038 J	0.069 J	0.081 J	0.68	0.1 U	0.89	0.12	
Acetophenone	µg/L	1,900	N/A	98 U	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Anthracene	µg/L	1,800	18.9	72.7	N/A	0.19	0.066 J	0.067 J	2.7	1.8	0.13	0.096 J	0.46	2	0.073 J	4.2	0.23	
Benzo[a]anthracene	µg/L	0.03	4.4	65.8	N/A	0.14	0.098 U	0.073 J	0.3	4.2	0.056 J	0.21	0.11	2	0.1 U	0.26	0.1 U	
Benzo[a]pyrene	µg/L	0.2	3	57.3	N/A	0.12	0.098 U	0.055 J	0.037 J	3.8	0.031 J	0.2	0.038 J	1.7	0.013 J	0.15	0.1 U	
Benzo[b]fluoranthene	µg/L	0.25	5.4	77.9	N/A	0.19	0.098 U	0.1	0.07 J	6.5	0.044 J	0.44	0.057 J	1.8	0.1 U	0.3	0.1 U	
Benzo[g,h,i]perylene	µg/L		1.3	18.7	N/A	0.06 J	0.098 U	0.098 U	0.095 U	1.9	0.1 U	0.13	0.095 U	0.78	0.1 U	0.05 J	0.1 U	
Benzo[k]fluoranthene	µg/L	2.5	4.4	27.7	N/A	0.07 J	0.098 U	0.097 J	0.095 U	5.6	0.024 J	0.36	0.095 U	0.69	0.1 U	0.28	0.1 U	
bis(2-chloroethoxy)methane	µg/L	59	N/A	98 U	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
bis(2-Ethylhexyl)phthalate	µg/L	6	N/A	98 U	N/A	0.32 J	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Caprolactam	µg/L	9,900	N/A	245 U	N/A	0.4 J	2.5 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Carbazole	µg/L		N/A	208	N/A	N/A	1.8	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Chrysene	µg/L	25	3.6	63.8	N/A	0.13	0.098 U	0.078 J	0.15	4.4	0.046 J	0.23	0.07 J	1.6	0.1 U	0.21	0.1 U	
Dibenz[a,h]anthracene	µg/L	0.025	0.43 J	6.5	N/A	0.1 U	0.098 U	0.098 U	0.095 U	0.82	0.1 U	0.043 J	0.095 U	0.27	0.1 U	0.1 U	0.1 U	
Di-n-butylphthalate	µg/L	900	N/A	98 U	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Fluoranthene	µg/L	800	20.1	181	N/A	0.52	0.098 U	0.15	5.8	7.7	0.16	0.42	0.53	5.7	0.048 J	2.2	0.13	
Fluorene	µg/L	290	41.9	96.6	N/A	0.43	0.098 U	0.041 J	8.8	1.7	0.084 J	0.22	1.9	4.8	0.15	16.6	0.28	
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	1.3	20.5	N/A	0.051 J	0.098 U	0.098 U	0.095 U	2	0.1 U	0.11	0.095 U	0.83	0.1 U	0.049 J	0.1 U	
Naphthalene	µg/L	0.12	886	2,550	N/A	0.15	0.041 J	0.11	39	1.1	1.7	6.2	5.2	120	0.05 J	141	30.8	
Pentachlorophenol	µg/L	1	N/A	245 U	N/A	2.5 U	2.5 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Phenanthrene	µg/L		73.6	537	N/A	0.87	0.098 U	0.1	18.8	7.4	0.24	0.47	1.9	8.7	0.062 J	19.9	0.24	
Phenol	µg/L	5,800	N/A	437	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Pyrene	µg/L	120	13.8	126	N/A	0.39	0.098 U	0.14	3.7	6.2	0.17	0.42	0.33	3.7	0.1 U	1.3	0.14	
TPH/Oil & Grease																		
Diesel Range Organics	µg/L	47	19,700	17,200	N/A	363	282	780	1,700	12,000	2,200	2,770	1,600	1,900	566	8,080	1,750	
Gasoline Range Organics	µg/L	47	1,470	2,460	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	129 J	200 U	200 U	200 U	
Oil & Grease	µg/L	47	1,300 J	1,700 J	N/A	4,750 U	4,770 U	4,750 U	9,000	4,750 U	1,400 J	1,200 J	2,100 J	1,600 J	4,750 U	3,100 J	1,000 J	

Detections in bold

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

^ PAH compounds were analyzed via SIM

* indicates non-validated data

N/A indicates that the parameter was not analyzed for this sample

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

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

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

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

**Table 1 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Groundwater**

Parameter	Units	PAL	B22-119Z-PZ*	B22-119AA-PZ*	B22-119BB-PZ*	B22-119CC-PZ*	FM-004-PZS	FM-005-PZS*	FM-006-PZS	FM-007-PZS*	FM-013-PZS	TM09-PZM007*	TM11-PZM007*	TM13-PZM007	TM15-PZM007*	TM15-PZM011*
			11/4/2020	11/4/2020	11/4/2020	11/3/2020	6/16/2016	5/25/2016	6/9/2016	5/25/2016	6/9/2016	6/28/2016	6/29/2016	6/27/2016	6/24/2016	6/24/2016
Volatile Organic Compounds																
1,1-Dichloroethane	µg/L	2.7	1 U	1 U	1 U	1 U	1 U	0.45 J	1 U	1 U	0.75 J	2.5	1	1 U	1 U	1 U
1,1-Dichloroethene	µg/L	7	1 U	1 U	1 U	1 U	0.72 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	10 U	3 J												
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	10 U	1.3 J												
Acetone	µg/L	14,000	10 U	10 U	10 U	13.6	10 U	3.8 J	10 U	10 U	2.5 J	13.3				
Benzene	µg/L	5	1 U	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.71 B	0.41 J	2.6	2	1.2
Bromomethane	µg/L	7.5	1 U	1 U	1 U	2.5	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	µg/L	810	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.5	0.99 B	0.48 J	1.2	1.5
Chloroform	µg/L	0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.67 J	0.87 J	1 U	1 U	1 U	1 U	1 U
Chloromethane	µg/L	190	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	µg/L	13,000	10 U	0.27 J	0.19 J											
Ethylbenzene	µg/L	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.75 J	1 U	1 U	1 U	0.58 J	1 U
Isopropylbenzene	µg/L	450	1 U	1.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.18 J	1 U
Methyl tert-butyl ether (MTBE)	µg/L	14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	µg/L	5	1 U	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.2	1 U	1 U	1 U	1 U
Toluene	µg/L	1,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.5	0.48 J	0.18 J	1	0.95 J	0.69 J
Trichloroethene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.1	1 U	1 U	1 U	1 U
Xylenes	µg/L	10,000	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	4.6	0.77 J	3 U	3 U	3.9	2.1 J
Semi-Volatile Organic Compounds^																
1,1-Biphenyl	µg/L	0.83	N/A	N/A	N/A	N/A	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3.6	0.35 J
1,4-Dioxane	µg/L	0.46	0.17	0.099 U	0.099 U	0.099 U	10.3	0.94	0.091 J	0.1 U	0.85	1.9	2.1	0.1 U	0.1 U	0.17
2,4-Dimethylphenol	µg/L	360	N/A	N/A	N/A	N/A	1 U	0.53 J	1 U	1 U	1 U	261	0.55 J	1	2.4	5.1
2-Chlorophenol	µg/L	91	N/A	N/A	N/A	N/A	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.41 J
2-Methylnaphthalene	µg/L	36	0.96	7.6	1.5	0.081 J	0.064 J	0.36	0.1 U	0.026 J	0.21	0.71 J	0.18 B	1.5	18.1	1.9
2-Methylphenol	µg/L	930	N/A	N/A	N/A	N/A	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.7	5.1
3&4-Methylphenol(m&p Cresol)	µg/L	930	N/A	N/A	N/A	N/A	2.1 U	2.1 U	2 U	2.1 U	2.1 U	145	2.1 U	1.6 J	4.9	21.5
Acenaphthene	µg/L	530	0.91	5.1	0.7	0.11	0.1 J	0.15	0.21	0.026 J	0.1 U	0.68	0.52	0.38	17.1	2.4
Acenaphthylene	µg/L	530	0.17	0.95	3	0.099 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 J	0.16	0.72	5.1	0.17
Acetophenone	µg/L	1,900	N/A	N/A	N/A	N/A	1 U	1 U	1 U	1 U	0.43 J	1 U	1 U	1 U	1 U	0.43 J
Anthracene	µg/L	1,800	0.31	1.3	2.5	0.24	0.56	0.055 J	0.013 J	0.1 U	0.023 J	0.27	0.12	0.47	1.3	0.38
Benz[a]anthracene	µg/L	0.03	0.072 J	0.27	0.6	0.099 U	0.11	0.1 U	0.1 U	0.1 U	0.1 U	0.024 J	0.1 U	0.073 J	0.078 J	0.04 J
Benzo[a]pyrene	µg/L	0.2	0.058 J	0.16	0.22	0.099 U	0.07 J	0.1 U	0.0081 J	0.1 U						
Benzo[b]fluoranthene	µg/L	0.25	0.15	0.33	0.46	0.099 U	0.12 J	0.1 U	0.019 J	0.017 J	0.1 U					
Benzo[g,h,i]perylene	µg/L		0.099 U	0.099 U	0.099 U	0.099 U	0.032 J	0.1 U	0.1 U							
Benzo[k]fluoranthene	µg/L	2.5	0.14	0.31	0.44	0.099 U	0.057 J	0.1 U	0.016 J	0.1 U	0.1 U					
bis(2-chloroethoxy)methane	µg/L	59	N/A	N/A	N/A	N/A	1 U	1 U	1 U	1 U	1 U	10.2 U	1 U	1 U	0.55 J	1 U
bis(2-Ethylhexyl)phthalate	µg/L	6	N/A	N/A	N/A	N/A	0.33 J	1 U	1 U	0.24 J	1 U	1 U	0.29 J	1 U	0.23 J	0.34 J
Caprolactam	µg/L	9,900	N/A	N/A	N/A	N/A	2.6 U	25.5 U	2.6 U	1.4 J	2.6 U	2.6 U				
Carbazole	µg/L		N/A	N/A	N/A	N/A	1 U	0.22 J	1 U	1 U	1 U	0.73 J	1 U	1.6	24.5	3.1
Chrysene	µg/L	25	0.12	0.22	0.34	0.099 U	0.086 J	0.1 U	0.037 J	0.045 J	0.03 J					
Dibenz[a,h]anthracene	µg/L	0.025	0.099 U	0.099 U	0.099 U	0.099 U	0.1 UJ	0.1 U	0.1 U							
Di-n-butylphthalate	µg/L	900	N/A	N/A	N/A	N/A	1 U	1 U	1 U	1 U	0.12 J	1 U	1 U	1 U	1 U	1 U
Fluoranthene	µg/L	800	0.35	1.6	4.1	0.068 J	0.2	0.1 U	0.064 J	0.039 J	0.1 U	0.23	0.071 J	1.1	1.6	0.36
Fluorene	µg/L	290	0.8	6.8	4.7	0.099 J	0.11	0.26	0.035 J	0.033 J	0.1 U	0.92	0.064 J	1.2	11.9	1.4
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	0.099 U	0.099 U	0.03 J	0.099 U	0.1 UJ	0.1 U	0.1 U							
Naphthalene	µg/L	0.12	3.9	33.8	5	0.4	0.2	3	0.03 B	0.059 B	0.23	6.2	4.6	23.3	113	29.5
Pentachlorophenol	µg/L	1	N/A	N/A	N/A	N/A	2.6 U	1.1 J	1 J	0.97 J						
Phenanthrene	µg/L		1.3	8.7	7.8	0.22	0.32	0.4	0.062 J	0.082 J	0.021 J	1.6	0.16	3.3	12.5	1.9
Phenol	µg/L	5,800	N/A	N/A	N/A	N/A	1 U	0.28 J	1 U	0.23 J	0.22 J	4.7	1 U	1 U	0.9 J	38
Pyrene	µg/L	120	0.29	1.1	3.1	0.048 J	0.15	0.1 U	0.048 J	0.028 J	0.1 U	0.14	0.053 J	0.67	1	0.22
TPH/Oil & Grease																
Diesel Range Organics	µg/L	47	1,820	2,030	1,240	678	3,380 J	4,480	410 J	131	1,020 J	2,580	658	264 J	1,870	4,180
Gasoline Range Organics	µg/L	47	200 U	86.6 J	200 U											
Oil & Grease	µg/L	47	1,200 J	2,300 J	1,000 J	4,750 U	N/A	N/A								

Detections in bold

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

^ PAH compounds were analyzed via SIM

* indicates non-validated data

N/A indicates that the parameter was not analyzed for this sample

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

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

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

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

**Table 2 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Soil Borings**

Parameter	Units	PAL	B22-119-SB-1	B22-119-SB-9	B22-119-SB-10*	B22-119-SB-5*	B22-119-SB-15*	B22-119A-SB-5*	B22-119A-SB-9*	B22-119B-SB-5*	B22-119B-SB-9.5*	B22-119B-SB-15*	B22-119C-SB-5*
			5/19/2016	5/19/2016	5/19/2016	5/8/2018	5/8/2018	5/7/2018	5/7/2018	5/7/2018	5/7/2018	5/7/2018	5/7/2018
Volatile Organic Compounds													
2-Butanone (MEK)	mg/kg	190,000	0.011 U	0.0061 J	N/A	0.0097 U	0.0098 U	0.013	0.0096 U	0.012 U	0.012 U	0.0098 U	0.011 U
Acetone	mg/kg	670,000	0.011 U	0.023 J	N/A	0.0097 U	0.02	0.33	0.072	0.039	0.049	0.23	0.038
Benzene	mg/kg	5.1	0.0056 U	3.9 J	N/A	0.0049 U	0.14	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Carbon disulfide	mg/kg	3,500	0.0056 U	0.007 U	N/A	0.0049 U	0.0053	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Ethylbenzene	mg/kg	25	0.0056 U	0.096 J	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Isopropylbenzene	mg/kg	9,900	0.0056 U	0.018	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Methyl Acetate	mg/kg	1,200,000	0.056 U	0.07 U	N/A	0.049 U	0.049 U	0.073	0.023 J	0.0025 J	0.23	0.079	0.012 J
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0056 U	0.007 U	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Styrene	mg/kg	35,000	0.0056 U	0.032 J	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Toluene	mg/kg	47,000	0.0056 U	1.4 J	N/A	0.0049 U	0.0062	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0016 J	0.0056 U
Xylenes	mg/kg	2,800	0.017 U	0.75 J	N/A	0.015 U	0.0078 J	0.017 U	0.014 U	0.018 U	0.019 U	0.015 U	0.017 U
Semi-Volatile Organic Comounds[^]													
1,1-Biphenyl	mg/kg	200	0.07 U	0.18 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	0.07 U	0.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	0.072 U	1.7	N/A	0.067	0.79	0.15	0.013	0.36	0.013	2.7	0.086
2-Methylphenol	mg/kg	41,000	0.07 U	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	1.4 J	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	0.072 U	0.38 J	N/A	0.012	0.89	0.024	0.0031 J	0.053	0.00095 J	2.1	0.018
Acenaphthylene	mg/kg	45,000	0.011 J	0.72 J	N/A	0.019	0.14	0.035	0.035	0.092	0.0039 J	0.31	0.054
Anthracene	mg/kg	230,000	0.025 J	0.42 J	N/A	0.07	1.3	0.2	0.034	0.78	0.011	3.1	0.13
Benz[a]anthracene	mg/kg	21	0.2	0.35 J	N/A	0.28	2.9	0.86	0.28	8.2	0.14	3.2	0.84
Benzaldehyde	mg/kg	120,000	0.07 R	0.099 R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	0.16	0.26 J	84.9	0.26	2.7	0.84	0.28	6.9	0.17	1.7	0.8
Benzo[b]fluoranthene	mg/kg	21	0.4	0.57 J	N/A	0.55	4.3	1.1	0.43	12.8	0.28	2.6	1.3
Benzo[g,h,i]perylene	mg/kg		0.058 J	0.082 J	N/A	0.087	0.54	0.43	0.14	1.2	0.098	0.63	0.28
Benzo[k]fluoranthene	mg/kg	210	0.33	0.47 J	N/A	0.43	3.3	0.41	0.12	3.1	0.095	2.1	0.34
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.028 B	0.099 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	mg/kg		0.07 U	1.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	0.21	0.27 J	N/A	0.26	2.2	0.66	0.21	6.4	0.12	2.7	0.64
Dibenz[a,h]anthracene	mg/kg	2.1	0.018 J	0.03 J	N/A	0.039	0.24	0.2	0.06	0.94	0.04	0.21	0.15
Diethylphthalate	mg/kg	660,000	0.07 U	0.099 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	0.27	1.5 J	N/A	0.45	5.9	1.1	0.33	9.2	0.097	9.5	1.1
Fluorene	mg/kg	30,000	0.072 U	1.2	N/A	0.0091	1.3	0.031	0.0051 J	0.078	0.0017 J	4.2	0.017
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.049 J	0.086 J	N/A	0.091	0.59	0.46	0.15	3.2	0.1	0.68	0.34
Naphthalene	mg/kg	8.6	0.072 U	32.8	2,040	0.064	2.8	0.084	0.018	0.23	0.026	0.48	0.082
Phenanthrene	mg/kg		0.046 J	2.5	N/A	0.31	6.5	0.93	0.12	4.9	0.081	13.8	0.45
Phenol	mg/kg	250,000	0.07 U	1.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	0.25	1 J	N/A	0.45	4.7	0.93	0.29	7.7	0.091	7.3	0.96
TPH/Oil & Grease													
Diesel Range Organics	mg/kg	6,200	20.5 J	124 J	N/A	71	287	46.9	32.1	498	22.2	4,090	75.5
Gasoline Range Organics	mg/kg	6,200	13 U	11.1 J	N/A	10 U	11 U	10.6 U	10.2 U	18.3 U	9.8 U	10.8 U	12.2 U
Oil & Grease	mg/kg	6,200	N/A	N/A	N/A	302	1,200	224	186	644	218	35,800	242

Detections in bold

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

* indicates non-validated data

[^] PAH compounds were analyzed via SIM

N/A indicates that the parameter was not analyzed for this sample

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

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

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

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

**Table 2 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Soil Borings**

Parameter	Units	PAL	B22-119C-SB-9.5*	B22-119D-SB-5*	B22-119D-SB-9*	B22-119E-SB-5*	B22-119E-SB-10*	B22-119E-SB-15*	B22-119F-SB-5*	B22-119F-SB-10*	B22-119F-SB-15*	B22-119G-SB-5*
			5/7/2018	5/7/2018	5/7/2018	5/7/2018	5/7/2018	5/7/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018
Volatile Organic Compounds												
2-Butanone (MEK)	mg/kg	190,000	0.01 U	0.012 U	0.0088 U	0.011 U	0.0094 U	0.0091 U	0.011 U	0.0092 U	0.0093 U	0.0086 U
Acetone	mg/kg	670,000	0.06	0.15	0.067	0.11	0.051	0.051	0.059	0.0092 U	0.012	0.056
Benzene	mg/kg	5.1	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.14	0.43	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Carbon disulfide	mg/kg	3,500	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.0063	0.0022 J	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Ethylbenzene	mg/kg	25	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.007	0.014	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Isopropylbenzene	mg/kg	9,900	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.0019 J	0.002 J	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Methyl Acetate	mg/kg	1,200,000	0.12	0.019 J	0.038 J	0.053 U	0.021 J	0.21	0.0084 J	0.046 U	0.046 U	0.013 J
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.0047 U	0.0045 U	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Styrene	mg/kg	35,000	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.0013 J	0.002 J	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Toluene	mg/kg	47,000	0.0052 U	0.002 J	0.0044 U	0.0053 U	0.041	0.13	0.0054 U	0.0046 U	0.0046 U	0.0043 U
Xylenes	mg/kg	2,800	0.016 U	0.018 U	0.013 U	0.016 U	0.067	0.12	0.016 U	0.014 U	0.014 U	0.013 U
Semi-Volatile Organic Comounds^												
1,1-Biphenyl	mg/kg	200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	0.036	0.028	0.031	0.034	5.3	13.7	0.066	0.8	0.0035 J	0.028
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	0.019	0.003 J	0.022	0.013	1.1	3.4	0.073	3.7	0.0014 J	0.31
Acenaphthylene	mg/kg	45,000	0.013	0.0082	0.022	0.053	2.6	5.7	0.054	0.55	0.0086 U	0.092
Anthracene	mg/kg	230,000	0.067	0.024	0.11	0.13	6.4	7.6	0.4	9.9	0.001 J	1.5
Benz[a]anthracene	mg/kg	21	0.2	0.091	0.41	0.45	9.7	8.7	1.3	13.4	0.0027 J	10.3
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	0.17	0.079	0.34	0.36	8.6	7.7	1.3	10.3	0.0011 J	6.9
Benzo[b]fluoranthene	mg/kg	21	0.35	0.19	0.68	0.85	11.5	10.7	2.3	18.3	0.0014 J	10
Benzo[g,h,i]perylene	mg/kg		0.056	0.034	0.11	0.097	1.6	1.2	0.48	2	0.0086 U	2.8
Benzo[k]fluoranthene	mg/kg	210	0.25	0.14	0.5	0.63	3.5	3.4	1.8	16	0.0086 U	4.2
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	mg/kg		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	0.16	0.09	0.3	0.35	6.2	5.2	0.99	7.9	0.0012 J	7.6
Dibenz[a,h]anthracene	mg/kg	2.1	0.028	0.015	0.054	0.057	1.1	0.69	0.2	0.89	0.0086 U	1.4
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	0.35	0.18	0.67	0.74	24.9	25.7	3	23.4	0.0047 J	17
Fluorene	mg/kg	30,000	0.026	0.0032 J	0.028	0.021	8.5	15.5	0.064	5.3	0.0017 J	0.1
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.064	0.036	0.13	0.13	2.5	1.6	0.53	2.2	0.0086 U	3.4
Naphthalene	mg/kg	8.6	0.055	0.043	0.039	0.047	36.3	131	0.15	1.3	0.013	0.025
Phenanthrene	mg/kg		0.32	0.1	0.44	0.47	33.1	42.9	1.4	29.6	0.0052 J	8.9
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	0.27	0.16	0.53	0.69	14	14.8	2.5	17.8	0.0036 J	12.9
TPH/Oil & Grease												
Diesel Range Organics	mg/kg	6,200	49.3	59.2	37.6	229	395	246	177	370	8.7	38.4
Gasoline Range Organics	mg/kg	6,200	14.2 U	9.9 U	15.7 U	11.5 U	11.5 U	12 U	22.9 U	10.8 U	10.3 U	14 U
Oil & Grease	mg/kg	6,200	253	130	230 J	847	1,790	1,710	1,150	2,840	207 J	316

Detections in bold

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

* indicates non-validated data

^ PAH compounds were analyzed via SIM

N/A indicates that the parameter was not analyzed for this sample

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

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

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

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

**Table 2 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Soil Borings**

Parameter	Units	PAL	B22-119G-SB-10*	B22-119G-SB-15*	B22-119H-SB-5*	B22-119H-SB-11*	B22-119H-SB-14*	B22-119I-SB-5*	B22-119I-SB-10*	B22-119I-SB-15*	B22-119J-SB-5*	B22-119J-SB-10*
			5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/9/2018	5/9/2018
Volatile Organic Compounds												
2-Butanone (MEK)	mg/kg	190,000	0.0097 U	0.009 U	0.01 U	0.013 U	0.0095 U	0.0094 U	0.0089 U	0.011 U	0.0096 U	0.01 U
Acetone	mg/kg	670,000	0.19	0.031	0.018	0.047	0.0095 U	0.022	0.011	0.011	0.015	0.025
Benzene	mg/kg	5.1	0.0049 U	0.0045 U	0.0052 U	0.0063 J	0.004 J	0.0047 U	0.0044 U	0.0029 J	0.0048 U	0.005 U
Carbon disulfide	mg/kg	3,500	0.0044 J	0.0053	0.0052 U	0.0065 J	0.0056	0.008	0.0027 J	0.013	0.0048 U	0.005 U
Ethylbenzene	mg/kg	25	0.0049 U	0.0045 U	0.0052 U	0.0031 J	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U
Isopropylbenzene	mg/kg	9,900	0.0049 U	0.0045 U	0.0052 U	0.0065 U	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U
Methyl Acetate	mg/kg	1,200,000	0.049 U	0.0014 J	0.0016 J	0.021 J	0.048 U	0.0034 J	0.044 U	0.053 U	0.048 U	0.05 U
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0013 J	0.0045 U	0.0052 U	0.0065 U	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U
Styrene	mg/kg	35,000	0.0049 U	0.0045 U	0.0052 U	0.0065 U	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U
Toluene	mg/kg	47,000	0.0049 U	0.0045 U	0.0052 U	0.0065 U	0.0016 J	0.0015 J	0.0044 U	0.0023 J	0.0048 U	0.005 U
Xylenes	mg/kg	2,800	0.015 U	0.014 U	0.016 U	0.019 U	0.0067 J	0.0081 J	0.013 U	0.0086 J	0.014 U	0.015 U
Semi-Volatile Organic Comounds^												
1,1-Biphenyl	mg/kg	200	N/A									
2,4-Dimethylphenol	mg/kg	16,000	N/A									
2-Methylnaphthalene	mg/kg	3,000	0.12	0.02	0.096	12.3	0.28	5.3	0.0084 J	0.16	0.026	0.023
2-Methylphenol	mg/kg	41,000	N/A									
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A									
Acenaphthene	mg/kg	45,000	0.25	0.035	0.0098	63.1	0.5	7.3	0.013	0.17	0.0031 J	0.0019 J
Acenaphthylene	mg/kg	45,000	0.027	0.011	0.018	1.1 J	0.048 J	0.63	0.0017 J	0.031	0.0058 J	0.0047 J
Anthracene	mg/kg	230,000	0.21	0.048	0.087	232	1.5	6.7	0.016	0.3	0.023	0.019
Benz[a]anthracene	mg/kg	21	0.48	0.25	0.37	305	3.1	7.9	0.03	0.51	0.082	0.071
Benzaldehyde	mg/kg	120,000	N/A									
Benzo[a]pyrene	mg/kg	2.1	0.48	0.26	0.34	252	2.7	7	0.026	0.48	0.077	0.054
Benzo[b]fluoranthene	mg/kg	21	0.83	0.45	0.71	409	4.5	12.3	0.046	0.84	0.19	0.16
Benzo[g,h,i]perylene	mg/kg		0.15	0.083	0.081	54	0.74	1.6	0.0098	0.12	0.025	0.019
Benzo[k]fluoranthene	mg/kg	210	0.65	0.35	0.56	109	3.5	9.7	0.036	0.66	0.15	0.12
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A									
Carbazole	mg/kg		N/A									
Chrysene	mg/kg	2,100	0.45	0.23	0.31	230	2.2	5.5	0.023	0.39	0.099	0.083
Dibenz[a,h]anthracene	mg/kg	2.1	0.065	0.033	0.043	26.1	0.3	0.63	0.0029 J	0.05	0.011	0.0076
Diethylphthalate	mg/kg	660,000	N/A									
Fluoranthene	mg/kg	30,000	0.78	0.56	0.49	1,490	5.1	20.6	0.059	0.96	0.15	0.14
Fluorene	mg/kg	30,000	0.24	0.032	0.0072	140	0.78	9.6	0.01	0.37	0.0035 J	0.0019 J
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.16	0.084	0.094	61.4	0.77	1.7	0.0091	0.13	0.026	0.02
Naphthalene	mg/kg	8.6	0.43	0.033	0.076	47.1	1.1	6.2	0.058	0.82	0.027	0.026
Phenanthrene	mg/kg		1.2	0.31	0.33	1,890	5	34.8	0.054	1.6	0.1	0.088
Phenol	mg/kg	250,000	N/A									
Pyrene	mg/kg	23,000	0.72	0.51	0.41	1,090	4	13.8	0.048	0.74	0.14	0.12
TPH/Oil & Grease												
Diesel Range Organics	mg/kg	6,200	275	5.3 J	64.5	3,120	276	247	25.2	95.7	44.1	120
Gasoline Range Organics	mg/kg	6,200	11.4 U	9.2 U	12.7 U	14.4 U	11.4 U	10.8 U	9.9 U	11.8 U	10.5 U	12 U
Oil & Grease	mg/kg	6,200	2,540	284	205	5,930	1,600	446	380	1,370	198	370

Detections in bold

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

* indicates non-validated data

^ PAH compounds were analyzed via SIM

N/A indicates that the parameter was not analyzed for this sample

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

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

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

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

**Table 2 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Soil Borings**

Parameter	Units	PAL	B22-119K-SB-5*	B22-119K-SB-9*	B22-119K-SB-15*	B22-120-SB-1*	B22-120-SB-8*	B22-121-SB-1*	B22-121-SB-9*	B22-121-SB-10*	B22-174-SB-1*	B22-174-SB-4*
			5/9/2018	5/9/2018	5/9/2018	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	5/19/2016	6/3/2016
Volatile Organic Compounds												
2-Butanone (MEK)	mg/kg	190,000	0.011 U	0.0076 U	0.009 U	0.011 U	0.011 U	0.0097 U	0.0056 J	N/A	0.013 U	0.011 U
Acetone	mg/kg	670,000	0.023	0.0076 U	0.016	0.011 U	0.011 U	0.0097 U	0.022	N/A	0.013 J	0.0063 J
Benzene	mg/kg	5.1	0.0057 U	0.0038 U	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Carbon disulfide	mg/kg	3,500	0.0057 U	0.0038 U	0.006	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Ethylbenzene	mg/kg	25	0.0057 U	0.0038 U	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Isopropylbenzene	mg/kg	9,900	0.0057 U	0.0038 U	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Methyl Acetate	mg/kg	1,200,000	0.057 U	0.038 U	0.045 U	0.053 U	0.056 U	0.049 U	0.061 U	N/A	0.065 U	0.053 U
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0057 U	0.0038 U	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Styrene	mg/kg	35,000	0.0057 U	0.0038 U	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Toluene	mg/kg	47,000	0.0057 U	0.0038 U	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Xylenes	mg/kg	2,800	0.017 U	0.011 U	0.014 U	0.016 U	0.017 U	0.015 U	0.018 U	N/A	0.019 U	0.016 U
Semi-Volatile Organic Comounds[^]												
1,1-Biphenyl	mg/kg	200	N/A	N/A	N/A	0.055 J	0.023 J	0.017 J	0.025 J	N/A	0.16	0.019 J
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	0.07 U	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
2-Methylnaphthalene	mg/kg	3,000	0.022	0.044	0.021	0.069 J	0.081 U	0.11	0.061 J	N/A	0.024 J	0.081 U
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	0.07 U	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	0.14 U	0.16 U	0.14 U	0.057 J	N/A	0.15 U	0.16 U
Acenaphthene	mg/kg	45,000	0.005 J	0.0065 J	0.017	0.015 J	0.11	0.027	0.1	N/A	0.077 U	0.0082 J
Acenaphthylene	mg/kg	45,000	0.017	0.019	0.0049 J	0.58	0.026 J	0.052	0.054 J	N/A	0.02 J	0.031 J
Anthracene	mg/kg	230,000	0.058	0.049	0.031	0.21	0.68	0.13	0.21	N/A	0.051 J	0.058 J
Benz[a]anthracene	mg/kg	21	0.37	0.2	0.087	0.51	1.5	0.52	0.43	N/A	0.52	0.44
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	0.017 J	0.08 U	0.021 J	0.023 J	N/A	0.017 J	0.082 U
Benzo[a]pyrene	mg/kg	2.1	0.35	0.18	0.091	0.57	1.3	0.47	0.39	0.9	0.57	0.52
Benzo[b]fluoranthene	mg/kg	21	0.71	0.37	0.17	1.3	2.8	1.1	0.86	N/A	1.2	1.1
Benzo[g,h,i]perylene	mg/kg		0.094	0.042	0.021	0.36	0.42	0.16	0.15	N/A	0.38	0.27
Benzo[k]fluoranthene	mg/kg	210	0.55	0.29	0.13	1.1	2.3	0.92	0.71	N/A	0.93	0.96
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	0.038 J	0.08 U	0.018 J	0.081 U	N/A	0.062 J	0.082 U
Carbazole	mg/kg		N/A	N/A	N/A	0.032 J	0.26	0.04 J	0.11	N/A	0.076 U	0.082 U
Chrysene	mg/kg	2,100	0.32	0.14	0.097	0.47	1.2	0.48	0.38	N/A	0.44	0.44
Dibenz[a,h]anthracene	mg/kg	2.1	0.043	0.019	0.0069 J	0.091	0.16	0.073	0.048 J	N/A	0.12	0.089
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	0.17	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
Fluoranthene	mg/kg	30,000	0.57	0.25	0.18	0.8	3.2	1	1.3	N/A	0.52	0.38
Fluorene	mg/kg	30,000	0.0036 J	0.0082	0.025	0.038 J	0.15	0.036	0.12	N/A	0.077 U	0.01 J
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.11	0.046	0.019	0.28	0.42	0.17	0.14	N/A	0.33	0.25
Naphthalene	mg/kg	8.6	0.034	0.06	0.038	0.2	0.031 J	0.092	0.11	N/A	0.022 J	0.033 J
Phenanthrene	mg/kg		0.23	0.18	0.15	0.44	1.9	0.62	0.8	N/A	0.14	0.16
Phenol	mg/kg	250,000	N/A	N/A	N/A	0.019 J	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
Pyrene	mg/kg	23,000	0.48	0.24	0.16	0.66	2.7	0.85	0.94	N/A	0.5	0.34
TPH/Oil & Grease												
Diesel Range Organics	mg/kg	6,200	78.6	60.4	113	151	124	105	557	N/A	149	257
Gasoline Range Organics	mg/kg	6,200	11.6 U	10.1 U	9.4 U	10.8 U	11.1 U	10.7 U	7.8 J	N/A	11.2 U	11.2 U
Oil & Grease	mg/kg	6,200	308	279	1,430	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Detections in bold

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

* indicates non-validated data

[^] PAH compounds were analyzed via SIM

N/A indicates that the parameter was not analyzed for this sample

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

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

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

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

**Table 3 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Test Pits**

Parameter	Units	PAL	B22 Test Pit 1-12*	B22 Test Pit 2-12*	B22-TP-1-1*	B22-TP-1-3*	B22-TP-1-5*	B22-TP-2-1*	B22-TP-2-3*	B22-TP-2-5*	B22-TP-3-1*
			6/5/2018	6/5/2018	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020
Volatile Organic Compounds											
1,2,4-Trichlorobenzene	mg/kg	110	0.0077 U	0.0066 U	0.31 U	0.077 J	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0077 U	0.0066 U	0.31 U	0.15 J	0.37 U	0.15 J	0.086 J	0.46 U	0.0098 U
1,4-Dichlorobenzene	mg/kg	11	0.0077 U	0.031	0.26 J	0.71	0.17 J	1.4	0.93	0.51	0.0093 J
2-Butanone (MEK)	mg/kg	190,000	0.015 U	0.02	0.63 U	0.18 J	0.75 U	0.32 J	0.63 U	0.92 U	0.02 U
Acetone	mg/kg	670,000	0.06	0.08	0.63 U	0.18 J	0.27 J	0.32 J	0.22 J	0.33 J	0.02 U
Carbon disulfide	mg/kg	3,500	0.0077 U	0.024	0.18 J	0.37	0.17 J	0.24 J	0.32	0.14 J	0.0098 U
Chloromethane	mg/kg	460	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0091 J
Ethylbenzene	mg/kg	25	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
Isopropylbenzene	mg/kg	9,900	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
Methyl Acetate	mg/kg	1,200,000	0.077 U	0.066 U	1.3 J	0.42 J	0.16 J	0.8 J	0.26 J	0.33 J	0.098 U
Toluene	mg/kg	47,000	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
Xylenes	mg/kg	2,800	0.023 U	0.02 U	0.94 U	0.72 U	1.1 U	1 U	0.95 U	1.4 U	0.029 U
Semi-Volatile Organic Compounds^											
2-Methylnaphthalene	mg/kg	3,000	0.13 J	0.24 J	0.046 J	0.25 J	0.039 J	0.49 U	0.075	1.8 U	2.4 U
Acenaphthene	mg/kg	45,000	0.068 J	0.82	0.14	0.54 J	0.22	0.59	0.35	0.69 J	2.4
Acenaphthylene	mg/kg	45,000	0.13 J	0.25 J	0.14	0.32 J	0.061 J	0.13 J	0.15	1.8 U	0.3 J
Anthracene	mg/kg	230,000	0.15 J	0.48	0.18	0.39 J	0.13	0.36 J	0.49	0.84 J	2.9
Benz[a]anthracene	mg/kg	21	0.68	0.84	0.63	0.63 J	0.37	0.49	1	1.5 J	4.2
Benzo[a]pyrene	mg/kg	2.1	0.62	0.71	0.64	2.2	0.35	2.2	1	1.2 J	3.2
Benzo[b]fluoranthene	mg/kg	21	0.92	1.3	0.9	2.8	0.66	2.5	0.8	2	4.7
Benzo[g,h,i]perylene	mg/kg		0.32 J	0.5	0.5	0.66 J	0.32	0.34 J	0.58	0.64 J	2.2 J
Benzo[k]fluoranthene	mg/kg	210	0.35 J	1.2	0.16	0.18 J	0.17	0.14 J	0.84	0.4 J	1.3 J
Chrysene	mg/kg	2,100	0.88	1.2	1.1	1.3	0.82	1.2	1.9	5.8	8.1
Dibenz[a,h]anthracene	mg/kg	2.1	0.45 U	0.43 U	0.13	0.69 U	0.097 J	0.49 U	0.16	1.8 U	2.4 U
Fluoranthene	mg/kg	30,000	1.4	3.6	1.6	1.8	1.1	1.5	4.2	3.7	11
Fluorene	mg/kg	30,000	0.14 J	0.35 J	0.047 J	0.28 J	0.057 J	0.53	0.52	0.93 J	3.6
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.27 J	0.28 J	0.44	0.44 J	0.3	0.21 J	0.62	0.6 J	1.8 J
Naphthalene	mg/kg	8.6	0.31 J	0.26 J	0.11	0.18 J	0.069 J	0.49 U	0.12	1.8 U	2.4 U
Phenanthrene	mg/kg		0.55	0.83	0.27	0.52 J	0.22	0.2 J	0.51	3	12
Pyrene	mg/kg	23,000	1.3	4.1	1.4	2.2	1.4	1.6	3.1	3.6	11
TPH/Oil & Grease											
Diesel Range Organics	mg/kg	6,200	14,800	23,700	6,380	27,600	4,940	29,600	18,400	8,300	18,800
Gasoline Range Organics	mg/kg	6,200	14.8 U	14.7 U	13.1 U	10.2 U	15.7 U	15.1 U	8.9 J	19.9 U	18.4 U
Oil & Grease	mg/kg	6,200	32,100	44,100	41,700	77,900	40,500	116,000	103,000	38,600	113,000

Detections in bold

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

* indicates non-validated data

^ PAH compounds were analyzed via SIM

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

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

**Table 3 - Parcel B22 PORI Lagoon
Summary of Organics Detected in Test Pits**

Parameter	Units	PAL	B22-TP-3-3*	B22-TP-3-5*	B22-TP-4-1*	B22-TP-4-3*	B22-TP-5-1*	B22-TP-5-3*	B22-TP-5-5*	B22-TP-6-1*	B22-TP-6-3*	B22-TP-6-5*
			6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020	6/17/2020
Volatile Organic Compounds												
1,2,4-Trichlorobenzene	mg/kg	110	0.42 U	0.46 U	0.41 U	0.089 J	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
1,2-Dichlorobenzene	mg/kg	9,300	0.42 U	0.46 U	0.41 U	0.33 U	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
1,4-Dichlorobenzene	mg/kg	11	0.42 U	0.16 J	0.41 U	0.13 J	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
2-Butanone (MEK)	mg/kg	190,000	0.85 U	0.92 U	0.83 U	0.67 U	0.095 J	0.82 U	0.42 J	0.9 U	1.5 U	0.0021 J
Acetone	mg/kg	670,000	0.85 U	0.92 U	0.52 J	0.67 U	0.34 J	0.38 J	0.6 J	0.43 J	0.7 J	0.0096 U
Carbon disulfide	mg/kg	3,500	1	0.46 U	0.41 U	0.14 J	0.35 U	0.41 U	0.31 J	0.45 U	0.77 U	0.002 J
Chloromethane	mg/kg	460	0.42 U	0.46 U	0.41 U	0.33 U	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
Ethylbenzene	mg/kg	25	0.42 U	0.46 U	0.41 U	0.33 U	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0013 J
Isopropylbenzene	mg/kg	9,900	0.42 U	0.46 U	0.41 U	0.091 J	0.35 U	0.41 U	0.34 J	0.45 U	0.77 U	0.0053
Methyl Acetate	mg/kg	1,200,000	0.24 J	0.11 J	3.4 J	0.71 J	2.2 J	2.3 J	0.88 J	0.97 J	1.1 J	0.048 U
Toluene	mg/kg	47,000	0.42 U	0.46 U	0.41 U	0.33 U	0.073 J	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
Xylenes	mg/kg	2,800	1.3 U	1.4 U	1.2 U	1 U	1.1 U	1.2 U	1.5 U	1.3 U	2.3 U	0.0047 J
Semi-Volatile Organic Compounds^												
2-Methylnaphthalene	mg/kg	3,000	0.13	0.038 J	1.7	6.4	0.73	0.86	1.8	0.16	0.58	0.44
Acenaphthene	mg/kg	45,000	0.41	0.24	5.5	9.9	0.38 J	0.14	5.8	0.18	3.4	6.2
Acenaphthylene	mg/kg	45,000	0.051	0.05 J	0.69	4.8	0.56 U	0.1	6.2	0.062 J	0.14 J	0.32
Anthracene	mg/kg	230,000	0.81	0.2	2.8	9.3	0.22 J	0.1	3.8	0.068	0.43	2.9
Benz[a]anthracene	mg/kg	21	1.6	0.36	2.2	10	0.32 J	0.22	4.5	0.15	0.57	1.5
Benzo[a]pyrene	mg/kg	2.1	1.3	0.31	2	11	0.38 J	0.22	4.9	0.19	0.53	1
Benzo[b]fluoranthene	mg/kg	21	1.6	0.42	2	11	0.4 J	0.24	5	0.17	0.7	0.94
Benzo[g,h,i]perylene	mg/kg		0.57	0.17	1.1	5.7	0.28 J	0.16	3.4	0.096	0.33 J	0.37
Benzo[k]fluoranthene	mg/kg	210	0.49	0.087 J	1.1	4.1	0.1 J	0.063	2	0.037 J	0.16 J	0.36
Chrysene	mg/kg	2,100	1.6	1	1.8	9.3	0.72	0.26	4.1	0.36	0.94	1.2
Dibenz[a,h]anthracene	mg/kg	2.1	0.22	0.11 U	0.11	1.5	0.56 U	0.04 J	0.87 J	0.064 U	0.11 J	0.11 J
Fluoranthene	mg/kg	30,000	3.6	0.8	5.1	25	0.6	0.36	9.6	0.18	1.2	5.2
Fluorene	mg/kg	30,000	0.38	0.14	3.6	10	0.43 J	0.18	5.6	0.08	0.26 J	3.7
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.71	0.15	1	6.1	0.19 J	0.14	2.4	0.07	0.24 J	0.39
Naphthalene	mg/kg	8.6	0.16	0.028 J	0.62	3.2	0.4 J	0.37	1.3 J	0.26	0.53	1
Phenanthrene	mg/kg		3.6	0.5	10	31	1.3	0.59	18	0.17	0.73	11
Pyrene	mg/kg	23,000	2.8	0.89	4.1	19	1.3	0.42	8.2	0.57	2	4.1
TPH/Oil & Grease												
Diesel Range Organics	mg/kg	6,200	18,800	5,500	17,200	46,900	18,400	9,220	26,800	7,070	5,470	1,030
Gasoline Range Organics	mg/kg	6,200	17.9 U	19.8 U	17.4 U	14 U	10.4 J	17.1 U	20.8 U	19.2 U	32.6 U	13.2
Oil & Grease	mg/kg	6,200	119,000	63,200	92,100	198,000	170,000	61,600	163,000	97,400	91,900	8,720

Detections in bold

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

* indicates non-validated data

^ PAH compounds were analyzed via SIM

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

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

**Table 4 - Parcel B22 PORI Lagoon
NAPL Gauging Activities**

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/19/2016			5/20/2016			5/23/2016		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	-	11.82	-	-	11.23	-	-	10.93	-
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	6/2/2016			7/22/2016			10/11/2016		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	-	11.15	-	-	11.31	-	Abandoned		
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable

NM = Not Measured

SHADED = NAPL Detection

bgs = below ground surface

^ indicates piezometer was missing or destroyed

**Table 4 - Parcel B22 PORI Lagoon
NAPL Gauging Activities**

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/8/2018			5/9/2018			5/10/2018		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	-	17.11	-	NM	NM	NM	-	11.62	-
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	-	27.37	-	NM	NM	NM	-	14.18	-
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NA	NA	NA	-	14.13	-	NM	NM	NM
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NA	NA	NA	-	26.95	-	NM	NM	NM
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/11/2018			8/24/2018			10/12/2018		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NM	NM	NM	-	11.70	-	NM	NM	NM
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NM	NM	NM	-	8.51	-	NM	NM	NM
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	-	14.16	-	-	16.43	-	NM	NM	NM
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	14.33	14.47	0.14	15.30	15.32	0.02	NM	NM	NM
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	-	15.76	-
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	-	14.91	-
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	-	15.64	-
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	-	15.84	-
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	-	15.79	-
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	-	19.48	-
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable

NM = Not Measured

SHADED = NAPL Detection

bgs = below ground surface

^ indicates piezometer was missing or destroyed

**Table 4 - Parcel B22 PORI Lagoon
NAPL Gauging Activities**

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	10/15/2018			11/14/2018			9/3/2019		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NM	NM	NM	NM	NM	NM	-	12.27	-
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	Destroyed								
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NM	NM	NM	NM	NM	NM	-	14.89	-
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NM	NM	NM	NM	NM	NM	trace	15.09	trace
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	-	15.88	-	-	15.21	-	-	15.34	-
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	-	15.03	-	-	14.55	-	-	14.86	-
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	-	15.40	-	-	14.61	-	-	14.68	-
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	-	15.73	-	-	14.83	-	-	12.25	-
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	-	14.63	-	-	13.79	-	-	11.16	-
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	-	17.17	-	-	16.12	-	-	13.83	-
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/21/2020			5/26/2020			6/8/2020		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NM	NM	NM	NM	NM	NM	-	11.33	Abandoned
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	Destroyed								
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NM	NM	NM	NM	NM	NM	-	13.87	Abandoned
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NM	NM	NM	NM	NM	NM	13.10	13.27	Abandoned
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NM	NM	NM	NM	NM	NM	-	14.20	Abandoned
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NM	NM	NM	NM	NM	NM	13.72	13.74	Abandoned
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NM	NM	NM	NM	NM	NM	-	13.50	Abandoned
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NM	NM	NM	NM	NM	NM	-	11.22	Abandoned
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NM	NM	NM	NM	NM	NM	-	10.22	Abandoned
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NM	NM	NM	NM	NM	NM	-	12.75	Abandoned
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	-	13.67	-	-	13.03	-	-	12.99	Abandoned
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	-	19.50	-	-	11.51	-	-	11.52	Abandoned

NA = Not Applicable

NM = Not Measured

SHADED = NAPL Detection

bgs = below ground surface

^ indicates piezometer was missing or destroyed

**Table 5 - Parcel B22 PORI Lagoon
Cumulative Vapor Intrusion Criteria Comparison**

				B22-119-PZ		B22-119-PZ		B22-119I-PZ		B22-119I-PZ		B22-119J-PZ		B22-119K-PZ		B22-119M-PZ		B22-119N-PZ	
				5/28/2020		5/31/2018		5/31/2018		6/1/2018		5/31/2018		11/3/2020		5/27/2020		5/27/2020	
Parameter	Type	Organ Systems	VI Screening Criteria (ug/L)	Conc. (ug/L)	Risk/Hazard														
Cancer Risk																			
1,4-Dioxane	SVOC		130,000	0.69	5.3E-11	0.87	6.7E-11	NA	NA	0.1 U	0	0.098 U	0	0.098 U	0	0.18	1.4E-11	0.1 U	0
Naphthalene	SVOC		200	886	4.4E-05	2,550	1.3E-04	NA	NA	0.15	7.5E-09	0.041 J	2.1E-09	0.11	5.5E-09	39	2.0E-06	1.1	5.5E-08
1,1-Dichloroethane	VOC		330	5 U	0	5 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Benzene	VOC		69	835	1.2E-04	859	1.2E-04	1 U	0	1 U	0	1 U	0	1 U	0	0.75 J	1.1E-07	1.6	2.3E-07
Chloroform	VOC		36	5 U	0	5 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Ethylbenzene	VOC		150	5 U	0	5 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Methyl tert-butyl ether (MTBE)	VOC		20,000	5 U	0	5 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Cumulative Vapor Intrusion Cancer Risk				2E-04		3E-04		0		8E-09		2E-09		6E-09		2E-06		3E-07	
Non-Cancer Hazard																			
1,1-Biphenyl	SVOC	Urinary	140	NA	NA	24.4 J	0.2	NA	NA	1 U	0	0.98 U	0	NA	NA	NA	NA	NA	NA
Cumulative Vapor Intrusion Non-Cancer Hazard				NA		0		NA		0		0		NA		NA		NA	

				B22-119Q-PZ		B22-119Q-PZ		B22-119R-PZ		B22-119S-PZ		B22-119U-PZ		B22-119V-PZ		B22-119Y-PZ		B22-119Z-PZ	
				11/3/2020		5/28/2020		5/27/2020		5/27/2020		11/3/2020		11/3/2020		11/4/2020		11/4/2020	
Parameter	Type	Organ Systems	VI Screening Criteria (ug/L)	Conc. (ug/L)	Risk/Hazard														
Cancer Risk																			
1,4-Dioxane	SVOC		130,000	0.17	1.3E-11	0.21	1.6E-11	3	2.3E-10	0.1 U	0	0.1 U	0	1.3	1.0E-10	1.1	8.5E-11	0.17	1.3E-11
Naphthalene	SVOC		200	1.7	8.5E-08	6.2	3.1E-07	5.2	2.6E-07	120	6.0E-06	0.05 J	2.5E-09	141	7.1E-06	30.80	1.5E-06	3.9	2.0E-07
1,1-Dichloroethane	VOC		330	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1.1	3.3E-08	1 U	0
Benzene	VOC		69	0.63 J	9.1E-08	3.2	4.6E-07	0.63 J	9.1E-08	50.5	7.3E-06	1 U	0	2.6	3.8E-07	1 U	0	1 U	0
Chloroform	VOC		36	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Ethylbenzene	VOC		150	1 U	0	1 U	0	1 U	0	0.64 J	4.3E-08	1 U	0	0.87 J	5.8E-08	1 U	0	1 U	0
Methyl tert-butyl ether (MTBE)	VOC		20,000	1 U	0	1 U	0	0.61 J	3.1E-10	1 U	0	1 U	0	2.6	1.3E-09	1 U	0	1 U	0
Cumulative Vapor Intrusion Cancer Risk				2E-07		8E-07		4E-07		1E-05		3E-09		7E-06		2E-06		2E-07	
Non-Cancer Hazard																			
1,1-Biphenyl	SVOC	Urinary	140	NA	NA														
Cumulative Vapor Intrusion Non-Cancer Hazard				NA		NA		NA		NA		NA		NA		NA		NA	

Yellow highlighted values indicate exceedances of the cumulative vapor intrusion criteria: TCR>1E-05 or THI>1

Conc. = Concentration

NA = Not Sampled

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.

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

**Table 5 - Parcel B22 PORI Lagoon
Cumulative Vapor Intrusion Criteria Comparison**

				B22-119AA-PZ		B22-119BB-PZ		B22-119CC-PZ		FM-004-PZS		FM-005-PZS		FM-006-PZS		FM-007-PZS		FM-013-PZS	
				11/4/2020		11/4/2020		11/3/2020		6/16/2016		5/25/2016		6/9/2016		5/25/2016		6/9/2016	
Parameter	Type	Organ Systems	VI Screening Criteria (ug/L)	Conc. (ug/L)	Risk/Hazard														
Cancer Risk																			
1,4-Dioxane	SVOC		130,000	0.099 U	0	0.099 U	0	0.099 U	0	10.3	7.9E-10	0.94	7.2E-11	0.091 J	7.0E-12	0.1 U	0	0.85	6.5E-11
Naphthalene	SVOC		200	33.8	1.7E-06	5	2.5E-07	0.4	2.0E-08	0.2	1.0E-08	3	1.5E-07	0.03 B	0	0.059 B	0	0.23	1.2E-08
1,1-Dichloroethane	VOC		330	1 U	0	1 U	0	1 U	0	1 U	0	0.45 J	1.4E-08	1 U	0	1 U	0	0.75 J	2.3E-08
Benzene	VOC		69	1.4	2.0E-07	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Chloroform	VOC		36	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	0.67 J	1.9E-07	0.87 J	2.4E-07
Ethylbenzene	VOC		150	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	0.75 J	5.0E-08
Methyl tert-butyl ether (MTBE)	VOC		20,000	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Cumulative Vapor Intrusion Cancer Risk				2E-06		3E-07		2E-08		1E-08		2E-07		7E-12		2E-07		3E-07	
Non-Cancer Hazard																			
1,1-Biphenyl	SVOC	Urinary	140	NA	NA	NA	NA	NA	NA	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Cumulative Vapor Intrusion Non-Cancer Hazard				NA		NA		NA		0		0		0		0		0	

				TM09-PZM007		TM11-PZM007		TM13-PZM007		TM15-PZM007		TM15-PZM011	
				6/28/2016		6/29/2016		6/27/2016		6/24/2016		6/24/2016	
Parameter	Type	Organ Systems	VI Screening Criteria (ug/L)	Conc. (ug/L)	Risk/Hazard								
Cancer Risk													
1,4-Dioxane	SVOC		130,000	1.9	1.5E-10	2.1	1.6E-10	0.1 U	0	0.1 U	0	0.17	1.3E-11
Naphthalene	SVOC		200	6.2	3.1E-07	4.6	2.3E-07	23.3	1.2E-06	113	5.7E-06	29.5	1.5E-06
1,1-Dichloroethane	VOC		330	2.5	7.6E-08	1	3.0E-08	1 U	0	1 U	0	1 U	0
Benzene	VOC		69	0.71 B	0	0.41 J	5.9E-08	2.6	3.8E-07	2	2.9E-07	1.2	1.7E-07
Chloroform	VOC		36	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Ethylbenzene	VOC		150	1 U	0	1 U	0	1 U	0	0.58 J	3.9E-08	1 U	0
Methyl tert-butyl ether (MTBE)	VOC		20,000	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Cumulative Vapor Intrusion Cancer Risk				4E-07		3E-07		2E-06		6E-06		2E-06	
Non-Cancer Hazard													
1,1-Biphenyl	SVOC	Urinary	140	1 U	0	1 U	0	1 U	0	3.6	0.03	0.35 J	0.003
Cumulative Vapor Intrusion Non-Cancer Hazard				0		0		0		0		0	

Yellow highlighted values indicate exceedances of the cumulative vapor intrusion criteria: TCR>1E-05 or THI>1

Conc. = Concentration

NA = Not Sampled

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.

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

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APPENDIX A

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Client : V&A [REDACTED]
 ARM Project No. : 150300M-21-3
 Project Description : Finishing Mills Ground Water
 Site Location : Sparrows Point, MD
 ARM Representative : B. Gehman
 Checked by : W. Mader, P.G., CPSS
 Drilling Company : Green Services, Inc
 Driller : Kevin Pumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 6/9/2016
 Weather : 70s, Partly Sunny

Northing (US ft) : 570071.39
 Easting (US ft) : 1460466.11

Boring ID: FM-004-PZS

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-4') CONCRETE, hard, white, dry		
24		-			-	
5		-		(4-5') Gravelly SAND with SILT, loose, black, dry, non plastic, non cohesive	SW	
20		-		(5-9.8') GRAVEL with SAND, loose, black, dry, non plastic, non cohesive	GW	
10		-		(9.8-10') BRICK debris, loose, wet, non plastic, non cohesive		Wet at 9' bgs
		-		(10-14) No Return		
20		-				
15		-		(14-15') Fill, GRAVEL and BRICK, large, black to red, wet, non plastic, non cohesive		
		-		(15-17') No Return		
0		-				
20						

Total Borehole Depth: 17' bgs.
 Boring terminated at 17' bgs.



Client : V&A [REDACTED]
 ARM Project No. : 150300M-21-3
 Project Description : Finishing Mills Ground water
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : P. Vogel, P.G.
 Drilling Company : Green Services, Inc
 Driller : Kevin Pumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 5/18/2016
 Weather : 60s, Sunny
 Northing (US ft) : 571149.95
 Easting (US ft) : 1460689.17

Boring ID: FM-005-PZS

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B22-071-SB-1	(0-3.0') SILT, soft, brown, dry, non plastic, non cohesive	ML	Some white coating
80		1.6			ML	
		2.4				
		2.9	B22-071-SB-4	(3-4') SILT, firm, yellowish brown, dry, cohesive, low plasticity	ML	
5		0.6		(4-5') Slag GRAVEL and SAND, loose, non cohesive	GP/SP	
		-		(5-10.0') Well graded slag GRAVEL, loose, gray to yellowish red, dry to wet, non plastic, non cohesive	GW	
50		0.3				
		0.3				
10		0.3				
		-		(10-16) Poorly graded slag GRAVEL and SAND, loose, gray, wet, non plastic, non cohesive	GP/SP	
27		-				
		0.0				
		0.0				
15		0.0				Product noted at 14.8' bgs, no odor noted, oily feel, brownish-red
		0.0				Boring refusal at 16' bgs and installed piezometer.

Total Borehole Depth: 16' bgs.



Client : Viasat [a] [c] [c] [c]
 ARM Project No. : 150300M-21-3
 Project Description : Finishing Mills Ground Water
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : P. Vogel, P.G.
 Drilling Company : Green Services, Inc
 Driller : Kevin Pumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 5/18/2016
 Weather : 60s, Sunny
 Northing (US ft) : 571246.35
 Easting (US ft) : 1461514.90

Boring ID: FM-006-PZS

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B22-118-SB-1	(0-1.3') SILT with GRAVEL, soft, brown, dry, non plastic, non cohesive	ML	
		3.0		(1.3-1.4') Concrete, loose, light gray, dry	GP	
	90	3.9		(1.4-2.5') SILT, soft, brown, dry, non plastic, non cohesive	ML	
		13.6		(2.5-2.9') Concrete, loose, gray, dry,	GP	
		6.5		(2.9-3.2') SILT, brown, dry, soft, no cohesion, no plasticity	ML	
5		-		(3.2-6.3') Silty CLAY, firm, brown, moist, non plastic, non cohesive	CL	
		2.5		(6.3-6.5') Concrete, loose, light gray, dry	GP	
	70	4.1		(6.5-8.5') Silty CLAY with some SAND, firm, brown, moist, cohesive, low plasticity	CL	Some sand intermixed
		18.1	B22-118-SB-9	(8.5-8.7') Brick GRAVEL, loose, light yellowish brown, moist, non plastic, non cohesive	GP	
		1.6	B22-118-SB-10	(8.7-10') Silty CLAY with SAND, soft, brown, moist, cohesive, non plastic	CL	
10		-		(10-15') Gravelly SAND, loose, greenish black, wet, non plastic, non cohesive		
	20	-			SP	
		0.0				Wet at 14' bgs
15		-		(15-18') CLAY with trace sand, very soft, greenish black, very moist, high plasticity	CH	
	70	0.0				
		0.0				
		0.0		(18-20') SAND, medium dense, greenish black, wet, non plastic, non cohesive	SP	
20		0.0				Boring terminated at 20' bgs

Total Borehole Depth: 20' bgs.



Client : ~~Via^ [a c t a c t]~~
 ARM Project No. : 150300M-21-3
 Project Description : Finishing Mills Ground Water
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : P. Vogel, P.G.
 Drilling Company : Green Services, Inc
 Driller : Kevin Pumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 5/18/2016
 Weather : 60s, cloudy
 Northing (US ft) : 570960.51
 Easting (US ft) : 1461781.24

Boring ID: FM-007-PZS

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-2') Asphalt and Concrete, gray, moist, loose, non plastic, non cohesive	-	
60	0.4	B22-126-SB-1	(2-3.7')	Brick, gravel sized, loose, yellowish brown, wet, non plastic, non cohesive	-	Wet at 3' bgs
5	1.2		(3.7-4.8')	Brick, sand sized, loose, yellowish brown, wet, non plastic, non cohesive	-	
5	0.5		(4.8-5')	Gravelly CLAY, very soft, light olive gray, wet, high plasticity, cohesive	CH	Mild sewage smell
100	0.0	B22-126-SB-6	(5-6')	Sandy CLAY, very soft, light grayish green grading to dark greenish gray, very moist, high plasticity, cohesive	CH	
100	0.0		(6-10')	Sandy CLAY, very soft, light grayish green grading to dark greenish gray, wet, high plasticity, cohesive	CH	
10	0.0	B22-126-SB-10	(10-23.5')	CLAY, soft, light grayish green with yellow-red mottling, moist to very moist, high plasticity, cohesive	CH	
60	0.0					
15	0.0					
100	0.0					
20	0.0					
100	0.0					
25	0.0			(23.5-30') CLAY, soft, dark gray, moist, high plasticity, cohesive	CH	
100	0.0					
30	0.0					Boring terminated at 30' bgs and installation of piezometer

Total Borehole Depth: 30' bgs.



Client : Viasat [300] CA
 ARM Project No. : 150300M-21-3
 Project Description : Finishing Mills Ground Water
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : W. Mader, P.G., CPSS
 Drilling Company : Green Services, Inc
 Driller : Kevin Pumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 5/18/2016
 Weather : 60s, Cloudy
 Northing (US ft) : 570268.11
 Easting (US ft) : 1461727.93

Boring ID: FM-013-PZS

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-1.7') SAND and GRAVEL, medium sand to small gravel sized, loose, dark olive brown, very moist, non plastic, non cohesive	SP/GP	
	80	1.3		(1.7-2.3') BRICK, loose, red, wet, non plastic, non cohesive	-	
		16.4		(2.3-2.5') CONCRETE, loose, light dray, dry, non plastic, non cohesive	GP	
		3.2		(2.5-4.2') SLAG GRAVEL, loose, very dark greenish gray, wet, non plastic, non cohesive	CL	
5		0.3		(4.2-5') CLAY, very firm, dark greenish gray, dry, cohesive, medium plasticity		
		-		(5-15') CLAY, soft, light yellowish brown, very moist, cohesive, high plasticity		
70		0.0				
		0.0				
10		0.1			CH	Visible water in sleeve
		0.0				
		0.0				
100		0.0				
		0.0				
		0.0				
15		0.0		(15-21.3') CLAY, very soft, dark gray, very moist, cohesive, high plasticity		
		0.0				
		0.0				
100		0.0			CH	
		0.0				
		0.0				
20		0.0				
		0.0				
		0.0				
100		0.0		(21.3-22.9') SAND, loose, dark gray, wet, non plastic, non cohesive	SP	Wet at 21.3" bgs
		0.0				
		0.0		(22.9-25') CLAY, very soft, dark gray, very moist, cohesive, high plasticity	CH	
25		0.0				

Total Borehole Depth: 25' bgs.
 Boring terminated at 25' bgs due to installation of piezometer.



Client : ~~Vista [redacted]~~
 ARM Project No. : 150300M-20-3
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, EIT
 Drilling Company : Green Services, Inc.
 Driller : Kevin Pumphrey
 Drilling Equipment : Geoprobe 7782DT

Soil Boring Installation Date : 5/19/2016
 Piezometer Installation Date : 5/19/2016
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571,293.47
 Easting (US ft) : 1,461,187.62
 0-Hr DTW : 11.82' TOC
 48-Hr DTW : 10.93' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	B22-119-SB-1	(0-0.5') TOPSOIL with small roots, soft, brown, dry, non-plastic, non-cohesive	OL	<p>1" PVC Riser</p> <p>Bentonite Seal</p> <p>Sand Pack</p> <p>1" PVC Screen</p> <p>End Cap</p>
0.5	-	-		(0.5-2.5') SILT, loose, brown, dry, non-plastic, non-cohesive	ML	
1.0	70	1.0		(2.5-2.7') BRICK, loose, yellow, dry, non-plastic, non-cohesive	NA	
1.6	-	-		(2.7-4.1') SILT with trace SAND, loose, dark olive brown, dry, non-plastic, cohesive	ML	
5	-	6.2		(4.1-9') CLAY, firm grading to soft, light olive brown to olive, moist to dry, high plasticity, cohesive, few slag gravel and wood 7.5-9' bgs	CH	
10	100	17.4				
10	-	49.1				
10	-	98.8				
10	-	123	B22-119-SB-9			
10	-	115	B22-119-SB-10	(9-14.8') CLAY, soft, olive, moist to dry, high plasticity, cohesive	CH	
15	50	33.3				
15	-	50.3				
15	-	6.3		(14.8-15') CLAYEY SAND, loose, olive, wet, non-plastic, non-cohesive	SC	
15	100	0.1		(15-18') SANDY CLAY with GRAVEL, very soft, olive, wet, high plasticity, cohesive	CH	
20	-	0.0				
20	-	0.0		(18-22') CLAY, trace SAND, soft, olive to pale olive, very moist, high plasticity, cohesive	CH	
20	100	0.0				
25	-	-		End of Boring		

Wood fragments and black streaks

Product present (9-10' bgs), black, viscous, sticky

Wet at 14.8' bgs

Highly saturated clay from 15-18' bgs

Boring terminated at 22' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 2.63'
 Riser: 0 - 7' bgs
 Screen: 7 - 22' bgs [Slot Size: 0.010"]
 Sand Pack: 5 - 22' bgs [Grain Size: WG #1]
 Bentonite Seal: 0 - 5' bgs [Grain Size: 0-0.5' bgs granular, 0.5-4.5' bgs chips, and 4.5-5' bgs granular]



Client : Viasat [a] [c] [c] [c]
 ARM Project No. : 150300M-20-3
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : C. Burger, P.G.
 Checked by : P. Vogel, P.G.
 Drilling Company : Green Services, Inc
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 5/19/2016
 Weather : 60s, Partly Cloudy

Northing (US ft) : 571,161.52
 Easting (US ft) : 1,461,300.49

Boring ID: B22-120-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		2.0		(0-1') Topsoil, SILT, ORGANIC SOIL	OL	
		0.6	B22-120-SB-1	(1-3') Slag GRAVEL with SILT and SAND, dark brown, dry, large cobbles of slag at 2.5'	GM	
	80	0.1				
		0.1		(3-5') Silty to very fine grained sandy CLAY, soft, dry, olive with light gray to orangish brown mottling, medium plasticity, cohesive	CL	
		0.0				
5		-		(5-10') Silty to sandy CLAY, soft, olive with gray and orangish brown mottling, high plasticity, cohesive, some intermixed angular GRAVEL, Clay and GRAVEL dark gray at bottom of boring		
		2.7				
	60	5.3	B22-120-SB-8		CH	
		0.1				Wet at 8.5' bgs
		0.1				Boring terminated at 10' bgs due to water
10						

Total Borehole Depth: 10' bgs.



Client : ~~Vista~~ [redacted]
 ARM Project No. : 150300M-20-3
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : C. Burger, P.G.
 Checked by : P. Vogel, P.G.
 Drilling Company : Green Services, Inc
 Driller : Don Marchese
 Drilling Equipment : Geoprobe 7822DT

Date : 5/19/2016
 Weather : 60s, Partly Cloudy

Northing (US ft) : 571,200.99
 Easting (US ft) : 1,461,184.17

Boring ID: B22-121-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0				(0-4') Slag GRAVEL and silty CLAY with larger quartz GRAVEL, gray/brown, dry, gravel non cohesive, clay, cohesive, low plasticity	GC	
		7.0	B22-121-SB-1			
		16.2				
90		1.3				
		7.4				
		3.7		(4-5') Silty to very fine grained SAND and CLAY with slag GRAVEL, soft,	SW/SC	Moist at 4' bgs
5		1.6		(5-9') Silty CLAY with gravel, olive, dry, cohesive, low plasticity, orangish brown mottling	CL	
		5.3				
	90	12.4				
		23.2	B22-121-SB-9			Black staining and pungent odor (8.5-10') bgs
		56.8	B22-121-SB-10	(9-10') Slag GRAVEL with wood, SILT and SAND, gray, wet, non cohesive, non plastic	GW	Wet at 9.5' bgs Boring terminated at 10' bgs due to water
10						

Total Borehole Depth: 15' bgs.



ARM Group LLC
Engineers and Scientists

Client : Viasat [30] [30] [30]
 ARM Project No. : 150300M-20-3
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : J. Yapple, P.G.
 Checked by : P. Vogel, P.G.
 Drilling Company : Green Services, Inc
 Driller : Kevin Dumphrey
 Drilling Equipment : Geoprobe 7822DT

Date : 6/3/2016
 Weather : 78F, Mostly Cloudy

Northing (US ft) : 571,259.37
 Easting (US ft) : 1,461,289.11

Boring ID: B22-174-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B22-174-SB-1	(0-5') Well graded silty SAND and GRAVEL, loose, light tan, light gray, red, dark brown, dry to 4', moist 4-5', non cohesive,		
		0.4				
	77	4.3		Clay lense 2.8-3.0'	SM-GW	
		0.2	B22-174-SB-4			
		1.3				
5		-		(5-8') CLAY with trace GRAVEL, soft, brown and gray-green, wet, high plasticity, cohesive	CH	Wet at 5'
		<0.2				
	100	0.5				
		0.2		(8-10') CLAY, soft, gray-green, wet, high plasticity, cohesive, wood fragments	CH	
		0.2				
10						Boring terminated at 10' bgs due to water

Total Borehole Depth: 10' bgs.



Client : ~~Vista [REDACTED]~~
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/7/18
 Weather : Sunny 60s
 Northing (US ft) : 571315.97
 Easting (US ft) : 1461258.41

Boring ID: B22-119A-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-9.5') SAND with GRAVEL, medium to coarse, dense, light to dark brown, slightly moist, no plasticity, no cohesion		
60	0.3					
	0.0					
5	0.6		B22-119A-SB-5		SW	BRICK at 4' bgs
	-					
40	-					
	0.2		B22-119A-SB-9			
	0.0			(9.5-10') CONCRETE		
10	-			(10-12.5') GRAVEL with SAND, black to pale brown, wet, no plasticity, no cohesion		
	100				GW	Wet at 10.5' bgs
	-					
	-					
				End of boring		
15						

Boring terminated at 12.5' bgs due to refusal.



Client : Viasat [a] [c] [c]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/7/18
 Weather : Sunny 60s
 Northing (US ft) : 571290.82
 Easting (US ft) : 1461273.18

Boring ID: B22-119B-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-10.5') SAND with GRAVEL, medium to coarse, dense, slightly moist, light brown to black, no plasticity, no cohesion	SW	
60	5.1					
	4.2					
5	0.6	B22-119B-SB-5				
		-		(10.5-13') GRAVEL with SAND, dense, dark gray to black, wet, no plasticity, no cohesion	GW	Wet at 10.5' bgs
40	-					
	2.2	B22-119B-SB-9.5				
10		0.0		(13-15') CLAY with SAND and GRAVEL, firm, bluish gray to black, wet, low plasticity, cohesive	CL	Odor from 11-15' bgs
	-					
80	-					
	-					
15		1.3	B22-119B-SB-15			
End of boring						

Boring terminated at 12.5' bgs due to refusal



Client : Viasat [a] [c] [c] [c]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/7/18
 Weather : Sunny 60s
 Northing (US ft) : 571318.83
 Easting (US ft) : 1461230.72

Boring ID: B22-119C-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-9.4') SAND with GRAVEL, medium to coarse, dense, pale yellow to black, slightly moist, no plasticity, no cohesion		
60		0.0				
		0.1				
		0.0	B22-119C-SB-5			
5		-			SW	
		-				
60		3.1				
		0.4	B22-119C-SB-9.5			BRICK COBBLES throughout
		2.5		(9.4-9.5') CLAY, tan to dark brown, wet, low plasticity, cohesive	CL	Wet at 9.5' bgs
10		-		(9.5-12') SAND with GRAVEL, medium to coarse, dense, pale yellow to black, wet, no plasticity, no cohesion	SW	
		-				
100		-		(12-15') CLAY with GRAVEL and SAND, very firm, bluish gray to pale brown, wet, no plasticity, no cohesion	CL	Slight odor from 12-15' bgs
		-				
		0.0				
15				End of boring		

Boring terminated at 15' bgs due to water



Client : ~~Vista [REDACTED]~~
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/7/18
 Weather : Sunny 60s
 Northing (US ft) : 571307.43
 Easting (US ft) : 1461205.37

Boring ID: B22-119D-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-12') SAND with GRAVEL, medium to fine, dense, dark brown to bluish gray, slightly moist then wet at 9.5' bgs, no plasticity, no cohesion, with thin light brown to pale brown clay lenses at 8.5' bgs	SW	SLAG and BRICK COBBLES throughout
60	0.4					
	1.2					
5	0.8	B22-119D-SB-5				
	-					
60	4.1					
	5.2	B22-119D-SB-9				
10	0.0					
	-					
80	-					
	-			(13-15') WOOD, possible telephone pole remnants, with thin pale green clay lens at 13.5' bgs	NA	Wet at 9.5' bgs
15				End of boring		

Boring terminated at 15' bgs due to water



Client : Viasat [a] [c] [c]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/7/18
 Weather : Sunny 60s

Northing (US ft) : 571306.32
 Easting (US ft) : 1461172.57

Boring ID: B22-119E-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-7.5') SAND with GRAVEL, medium to coarse, dense, dry to slightly moist, light brown to pale yellow, no plasticity, no cohesion	SW	Firebrick COBBLES at 2.5' bgs
60	0.2	5.6				
5		0.9	B22-119E-SB-5			
50		0.9		(7.5-15') CLAY with SAND and GRAVEL, very firm, pale yellow grading to dark bluish gray, moist, medium plasticity, cohesive	CL	Naphthalene-like odor 7.5-15' bgs No water encountered
		0.3	B22-119E-SB-10			
10		0.6				
40		-				
15		-	B22-119E-SB-15			
End of boring						

Boring terminated at 15' bgs due to maximum depth.



Client : Viasat [a/c]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/8/18
 Weather : Sunny 60s
 Northing (US ft) : 571224.68
 Easting (US ft) : 1461166.47

Boring ID: B22-119F-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-10.5') CLAY with SAND and GRAVEL, firm, pale brown to bluish green grading to black at 8.5' bgs, slightly moist to wet at 8' bgs, low plasticity, cohesive	CL	
	70	0.0				
		0.0				
		0.1				
		0.0	B22-119F-SB-5			
5		-				
		0.3				
	80	0.1				
		0.0				
		0.0	B22-119F-SB-10			
10		-		(10.5-15') CLAY with SAND, firm, black to bluish gray, wet, medium plasticity, cohesive	CL	Naphthalene-like odor from 8-10' bgs Trace SLAG and BRICK COBBLES at 7.5' bgs Petroleum-like odor at 13' bgs
		-				
	80	-				
		0.0				
		0.0	B22-119F-SB-15			
15				End of boring		

Boring terminated at 15' bgs due to water



Client : ~~Vista~~ [redacted]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/8/18
 Weather : Sunny 60s
 Northing (US ft) : 571251.07
 Easting (US ft) : 1461161.13

Boring ID: B22-119G-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS	
0		-		(0-2') SAND with GRAVEL, medium to coarse, loose, dark brown to blackish red, slightly moist, no plasticity, no cohesion	SW		
	80	0.0		(2-15') CLAY with SAND and GRAVEL, firm, very pale brown grading to pale gray from 8-15' bgs, slightly moist to wet at 7.5' bgs, medium plasticity, cohesive	CL	CONCRETE at 4' bgs	
		0.0	B22-119G-SB-5				
5		-					
	80	0.6					Wet at 7.5' bgs
		1.3	B22-119G-SB-10				
10		0.0				Odor from 7.5-15' bgs	
	90	-					
		-	B22-119G-SB-15				
15		-		End of boring			

Boring terminated at 15' bgs due to water



Client : ~~Via^ [a c c a c]~~
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Date : 5/8/18
 Weather : Sunny 70s

Northing (US ft) : 571276.07
 Easting (US ft) : 1461171.61

Boring ID: B22-119H-SB

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-5') SAND with GRAVEL, medium to fine, firm, dark brown, slightly moist, no plasticity, no cohesion	SW	
	60	1.4				
		0.1				
		0.1	B22-119H-SB-5			
5		0.2		(5-14') CLAY with SAND and GRAVEL, very firm, pale greenish blue to pale brown, slightly moist, low plasticity, cohesive	CL	Odor at 11' bgs
	90	1.6				
		4.1				
		0.6				
10		-	B22-119H-SB-11			
		-				
	100	-				
		-	B22-119H-SB-14			
		-				
15		-		(14-15') GRAVEL with SAND, dense, dark brown, wet, no plasticity, no cohesion	GW	Wet at 14' bgs
End of boring						

Boring terminated at 15' bgs due to water



ARM Group LLC
Engineers and Scientists

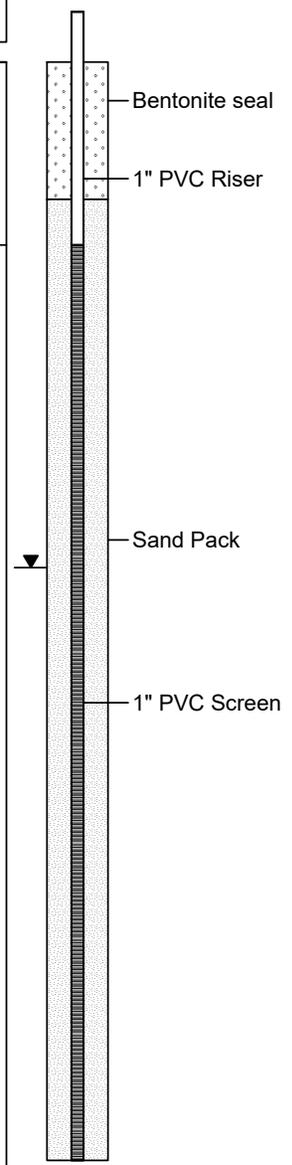
Client : ~~Vista~~ [Redacted]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 5/8/18
 Piezometer Installation Date : 5/8/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571240.63
 Easting (US ft) : 1461111.01
 0-Hr DTW : 27.37' TOC
 48-Hr DTW : 14.18' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119I-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-		(0-4') SAND with GRAVEL, medium to fine, slightly moist, loose, light brown to pale yellow, no plasticity, no cohesion	SW	BRICK fragments from 1-4' bgs
0.5	80	4.4				
5	5.6	7.9	B22-119I-SB-5	(4-25') CLAY with SAND and GRAVEL, dark greenish gray to black, very firm, moist, medium plasticity, cohesive		Odor at 5' bgs
3.7		2.4				
10	100	0.2				
		0.4	B22-119I-SB-10			
15	70	-			CL	
		-	B22-119I-SB-15			
20	100	-				
		-				
25	100	-		End of boring		



Boring terminated at 25' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 3.13'
 Riser: 0 - 4' bgs
 Screen: 4 - 24' bgs [Slot Size: 0.010"]
 Sand Pack: 3 - 24' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]



ARM Group LLC
Engineers and Scientists

Client : ~~Via^] [a c c a a~~
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : S. Kabis
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 5/9/18
 Piezometer Installation Date : 5/9/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571337.95
 Easting (US ft) : 1461151.64
 0-Hr DTW : 14.13' TOC
 48-Hr DTW : 14.16' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119J-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-15') SLAG SAND and GRAVEL with some SLAG COBBLES, loose, black, dry, no plasticity, no cohesion	SW/GW	<p>Bentonite seal</p> <p>1" PVC Riser</p> <p>Sand Pack</p> <p>1" PVC Screen</p> <p>Wet at 9' bgs</p>
0.6						
1.6	80					
1.7						
0.6			B22-119J-SB-5			
5						
0.2						
1.6						
90						
2.5						
1.7						
10						
1.3			B22-119J-SB-10			
-						
-						
80						
-						
-						
15				(15-17') SLAG SAND and GRAVEL, black, wet, dense, no plasticity, no cohesion	SW/GW	
100						
-						
End of boring						

Boring terminated at 16' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 4.13'
 Riser: 0 - 6' bgs
 Screen: 6 - 16' bgs [Slot Size: 0.010"]
 Sand Pack: 3 - 16' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]



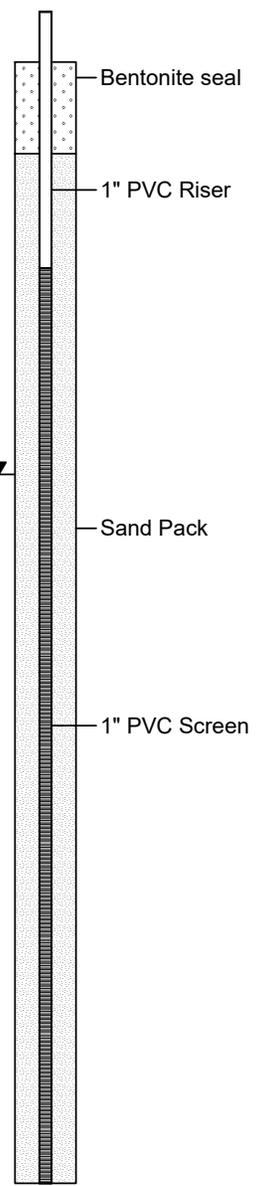
Client : ~~Vista~~ [Redacted]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : S. Kabis
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Ryan Sites
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 5/9/18
 Piezometer Installation Date : 5/9/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571366.76
 Easting (US ft) : 1461244.93
 0-Hr DTW : 26.95' TOC
 48-Hr DTW : 14.46' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119K-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-		(0-7') SLAG SAND and GRAVEL, loose, black, dry, no plasticity, no cohesion		
0.8	80	1.4				
0.4		0.6	B22-119K-SB-5		SW/GW	
5	0.1	0.6				
100	0.7	1.1	B22-119K-SB-9	(8-9') SLAG GRAVEL and SILT, hard, tan, dry, no plasticity, cohesive	GW/ML	
10	-	-		(9-12') SLAG SAND and GRAVEL, black, wet, no plasticity, no cohesion	SW/GW	
70	1.7	0.6		(12-25') CLAY with GRAVEL from 20-21' bgs, firm, dry to wet at 20' bgs, gray, high plasticity, cohesive		
15	0.1	0.1	B22-119K-SB-15			
60	-	-			CL	
20	-	-				
100	-	-				
25	-	-		End of Boring		



Boring terminated at 24.5' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 5.45'
 Riser: 0 - 4.5' bgs
 Screen: 4.5 - 24.5' bgs [Slot Size: 0.010"]
 Sand Pack: 2 - 24.5' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 2' bgs [Grain Size: 3/8" chips]



Client : Viasat [301] CA
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Lou Davis
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/12/18
 Piezometer Installation Date : 10/12/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571366.76
 Easting (US ft) : 1461269.93
 0-Hr DTW : 15.76' TOC
 48-Hr DTW : 15.88' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119L-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-4') Non-native SAND with some SLAG GRAVEL, medium dense to dense, grayish brown, dry, no plasticity, no cohesion	SW	<p>Bentonite seal</p> <p>1" PVC Riser</p> <p>Sand Pack</p> <p>1" PVC Screen</p> <p>Wet at 12' bgs</p>
70	0.2	0.1		(4-12') CONCRETE and BRICK GRAVEL with SAND, medium dense, yellow and red with brown, dry, no plasticity, no cohesion	NA	
5	-	0.0				
50	-	0.2				
10	-	0.2				
70	0.3	0.0		(12-12.6') SLAG GRAVEL with SAND and SILT, loose, very dark gray, wet, no plasticity, no cohesion	GW/SW	
	0.0	0.0		(12.6-13.4') CLAY with some SAND, greenish gray, gray, and very dark gray, very moist, low plasticity, cohesive	CL	
	0.0	0.0		(13.4-14') SLAG GRAVEL with SAND and SILT, loose, very dark gray, wet, no plasticity, no cohesion	GW/SW	
15	-	0.0		(14-15') CLAY with some SAND, greenish gray, gray, and very dark gray, very moist, low plasticity, cohesive	CL	
0	-	-				
End of Boring						

Boring terminated at 16' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 4.83'
 Riser: 0 - 7' bgs
 Screen: 7 - 17' bgs [Slot Size: 0.010"]
 Sand Pack: 3 - 17' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]



Client : ~~Via~~ [redacted]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Lou Davis
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/12/18
 Piezometer Installation Date : 10/12/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571341.76
 Easting (US ft) : 1461244.93
 0-Hr DTW : 14.91' TOC
 48-Hr DTW : 15.03' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119M-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-10') SAND with GRAVEL, coarse to fine, medium dense, dark brown to pale brown to pale gray, slightly moist to dry, no plasticity, no cohesion	SW	<p>Wet at 9' bgs</p>
45.1						
80	5.2					
	1.0					
5	4.0					
	-					
60	20.5					
	1.6					
10	3.6			(10-12') SAND, medium, dense, black to pale gray, wet, no plasticity, no cohesion	SP	
	0.4					
80	0.6			(12-20') CLAY with GRAVEL, soft, pale gray to bluish gray, wet, low plasticity, cohesive	CL	
	1.5					
15	5.8					
	-					
50	1.1					
	0.5					
20	0.3			End of Boring		

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 5.05'
 Riser: 0 - 8' bgs
 Screen: 8 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 5 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 5' bgs [Grain Size: 3/8" chips]



Client : ~~Vista~~ [redacted]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Lou Davis
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/12/18
 Piezometer Installation Date : 10/12/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571391.76
 Easting (US ft) : 1461244.93
 0-Hr DTW : 15.64' TOC
 48-Hr DTW : 15.40' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119N-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-8') Non-native SAND with trace BRICK GRAVEL, fine to coarse, medium dense to dense, brown to grayish brown, dry, no plasticity, no cohesion	SW	<p>Wet at 14' bgs</p>
74	0.1					
5	0.1					
60	0.0					
10	1.5			(8-13') CLAY, soft to firm, greenish gray with heavy black staining, moist, low plasticity, cohesive	CL	
62	11.7					
15	0.1			(13-13.2') BRICK GRAVEL, medium dense, white, dry, no plasticity, no cohesion	NA CL	
56	0.2			(13.2-14') CLAY, soft to firm, greenish gray with heavy black staining, moist, low plasticity, cohesive	SC	
	0.2			(14-18') CLAYEY SAND with trace BRICK GRAVEL, medium dense, pale brown, wet, no plasticity, no cohesion	SC	
20	0.3			(18-20') CLAY, soft, gray, very moist, low plasticity, cohesive	CL	
				End of Boring		

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 5.05'
 Riser: 0 - 10' bgs
 Screen: 10 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 8' bgs [Grain Size: 3/8" chips]



ARM Group LLC
Engineers and Scientists

Client : ~~Vista [redacted]~~
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : M. Kedenburg, G.I.T.
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Lou Davis
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/12/18
 Piezometer Installation Date : 10/12/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571366.76
 Easting (US ft) : 1461219.93
 0-Hr DTW : 15.84' TOC
 48-Hr DTW : 15.73' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-1190-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-8') SAND with GRAVEL, medium to fine, medium dense, dark brown to pale gray, moist, no plasticity, no cohesion	SW/GW	<p>Bentonite seal</p> <p>1" PVC Riser</p> <p>Sand Pack</p> <p>1" PVC Screen</p> <p>Wet at 13.5' bgs</p>
40	-	-				
5	1.2	2.1				
80	-	-				
10	1.3	59.2		(8-8.5') BRICK	NA	
50	0.4	-		(8.5-13.5') SAND with GRAVEL, medium to fine, medium dense, dark brown to pale gray, moist, no plasticity, no cohesion	SW	
15	1.6	-		(13.5-15.5') GRAVEL with SAND, medium, dense, black to dark brown, wet, no plasticity, no cohesion	GP	
80	18.7	-		(15.5-20') CLAY, soft, dark bluish gray, wet, low plasticity, cohesive	CL	
20	4.2	-				
	2.5	-				
	-	-				
	0.3	-				
	0.2	-				
	0.1	-				
	0.3	-				
				End of boring		

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 2.69'
 Riser: 0 - 10' bgs
 Screen: 10 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 8' bgs [Grain Size: 3/8" chips]



Client : ~~Via^ [3 0 0 0]~~
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Lou Davis
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/12/18
 Piezometer Installation Date : 10/12/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571372.66
 Easting (US ft) : 1461178.21
 0-Hr DTW : 15.79' TOC
 48-Hr DTW : 14.63' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119P-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-0.5') SLAG GRAVEL, coarse, loose, light gray, dry, no plasticity, no cohesion	GP	<p>Bentonite seal</p> <p>1" PVC Riser</p> <p>Sand Pack</p> <p>1" PVC Screen</p> <p>Wet at 14' bgs</p> <p>Trace BRICK from 14-20' bgs</p>
60	1.1	-		(0.5-14') Non-native SAND with some SLAG and BRICK GRAVEL and some SILT, medium dense, to dense, brown, grayish brown and some yellow, dry, no plasticity, no cohesion	SW/GW	
5	0.5	-				
	0.1	-				
80	5.2	-				
	0.3	-				
	0.1	-				
10	0.0	-				
	-	-				
	-	-				
60	0.0	-				
	0.0	-				
15	0.0	-		(14-20') GRAVEL with SILT and some SAND, fine, medium dense, dark brown with trace yellow, wet, no plasticity, no cohesion	GP-GM	
	-	-				
	0.0	-				
80	0.1	-				
	0.0	-				
20	0.4	-		End of Boring		

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 1.00'
 Riser: 0 - 10' bgs
 Screen: 10 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 8' bgs [Grain Size: 3/8" chips]



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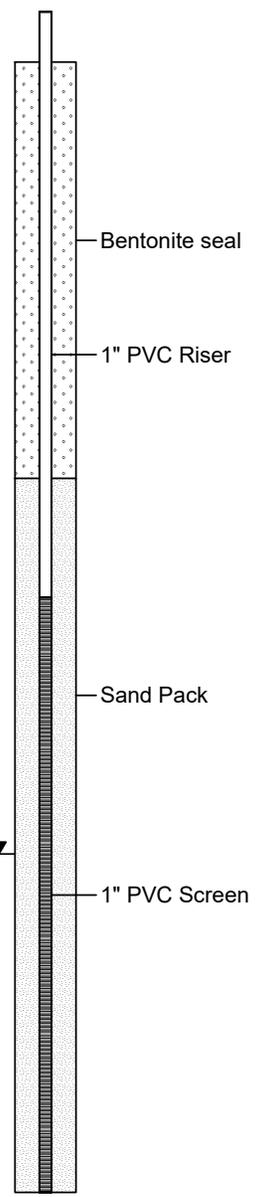
Client : ~~Via~~ [redacted]
 ARM Project No. : 150300M-20-10
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : Allied Drilling Co.
 Driller : Lou Davis
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/12/18
 Piezometer Installation Date : 10/12/18
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571333.77
 Easting (US ft) : 1461194.88
 0-Hr DTW : 19.42' TOC
 48-Hr DTW : 17.17' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119Q-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-15') SAND with GRAVEL, fine to coarse, loose, dark brown to pale gray, dry, no plasticity, no cohesion		
2.3						
80	2.0					
59.8						
5	2.7					
	-					
7.7						
80	0.5				SW	
	0.6					
10	2.6					
	-					
8.5						
80	6.6					
	6.1					
15	6.9					
	0.2			(15-19') SLAG GRAVEL with SAND, medium to coarse, dense, black to reddish brown, no plasticity, no cohesion		
	0.3					
100	5.5				SW/GW	
	8.0					
				End of boring		



Wet at 16' bgs
 BRICK at 17' bgs

Boring terminated at 19' bgs due to water and refusal
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface
 AMSL: Above mean sea level

Riser Stickup: 3.86'
 Riser: 0 - 9' bgs
 Screen: 9 - 19' bgs [Slot Size: 0.010"]
 Sand Pack: 7 - 19' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 7' bgs [Grain Size: 3/8" chips]



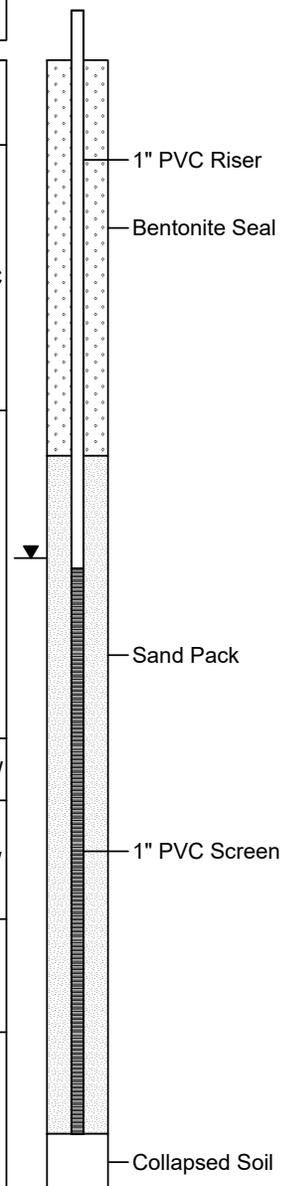
Client : ~~Vista~~ [redacted]
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 5/21/20
 Piezometer Installation Date : 5/21/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571203.88
 Easting (US ft) : 1461171.48
 0-Hr DTW : 13.67' TOC
 48-Hr DTW : 13.03' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119R-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-0.6') Non-native SILT with very fine SAND, loose, very pale brown, dry, no plasticity, no cohesion	ML	
1.2	78	26.9	No Samples Collected	(0.6-6.2') SAND with CLAY and GRAVEL, non-native, med dense, brown with trace yellow and reddish yellow, dry, no plasticity, no cohesion, with trace concrete gravel at 4' bgs	SW-SC	
5		0.2		(6.2-12') CLAY, very firm to hard, moist, grayish brown and pale green, low plasticity, cohesive	CL	
10		0.0		(12-13.1') CLAYEY GRAVEL with SAND, medium dense, black and pale green, wet, no plasticity, no cohesion	GC/SW	
15		0.0		(13.1-15.2') CLAY with GRAVEL and some SAND, soft to firm, black and yellowish brown, very moist, low plasticity, cohesive	CL/GW	
15		0.0		(15.2-17.2') FILL GRAVEL with some SAND and SILT, medium dense, red yellow and brown, wet, no plasticity, no cohesion	GW	
20	86	0.5		(17.2-20') CLAY with trace SAND, very firm, pale green and black, moist, low plasticity, cohesive	CL	
				End of Boring		



Wet at 12' bgs

Boring terminated at 20' bgs due to water and piezometer installation
 Piezometer installed to 19' bgs
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 4.22' ags
 Riser: 0 - 9' bgs
 Screen: 9 - 19' bgs [Slot Size: 0.010"]
 Sand Pack: 7 - 19' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 7' bgs [Grain Size: bentonite chips]



Client : Vista [Redacted]
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 05/21/2020
 Piezometer Installation Date : 05/21/2020
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571275.08
 Easting (US ft) : 1461265.19
 0-Hr DTW : 19.50' TOC
 48-Hr DTW : 11.51' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119S-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-1.5') FILL/CONCRETE, SAND and GRAVEL sized, with SILT, loose, very pale brown, dry, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Wet at 9.5' bgs Sand Pack light amount of sheen and strong odor from 11.3-12' bgs 1" PVC Screen</p>
48	3.2	0.0		(1.5-7.4') Non-native SAND with SILT and SLAG/BRICK GRAVEL, medium dense, brown to dark brown with light gray, dry, no plasticity, no cohesion	SW-SM/GW	
5	-	0.3		(7.4-8.5') SILT with SAND and SLAG/BRICK GRAVEL, medium dense to dense, dark brown, moist, no plasticity, no cohesion	ML	
60	3.4	-		(8.5-9.6') SILTY SAND with GRAVEL, medium dense, dark brown with yellow, moist, no plasticity, no cohesion	SM/GW	
10	-	1.2		(9.6-10') FILL GRAVEL and cobbles, loose, yellow and brown, wet, no plasticity, no cohesion	GW	
74	6.6	-		(11.3-12') FILL/SLAG GRAVEL, fine to coarse, brown and yellow and black, wet, no plasticity, no cohesion	GW	
15	1.5	-		(12-20') CLAY with trace intermittent sand, soft to very firm, pale green, black and reddish yellow, moist, low plasticity, cohesive, moderate odor	CL	
40	2.4	-				
20	3.9	32.0				
	-	-				
	40	-				
	-	23.0				
	-	2.7				
End of Boring						

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 2.83' ags
 Riser: 0 - 10' bgs
 Screen: 10 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 8' bgs [Grain Size: bentonite chips]

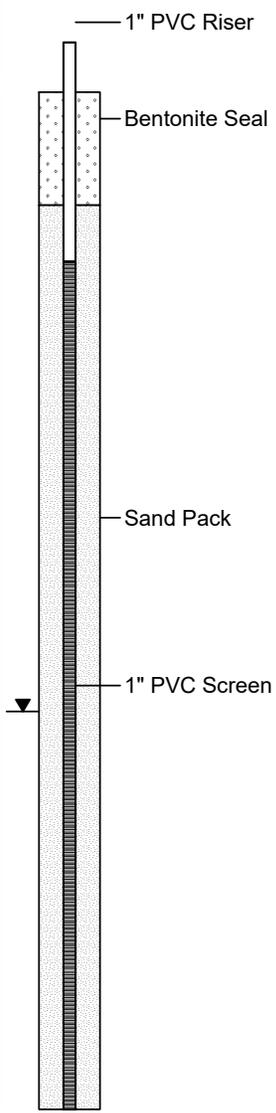


Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/28/20
 Piezometer Installation Date : 10/28/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571363.5
 Easting (US ft) : 1461247.7
 0-Hr DTW : 12.27' TOC
 48-Hr DTW : 13.40' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119K-SB/PZ
 (Reinstalled)
 (page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS			
0	-	0.0	No Samples Collected	(0-7.5') Non-native SAND with SILT and some SLAG/FILL GRAVEL, medium dense then dense at 6' bgs, brown, dry, no plasticity, no cohesion	SW-SM/GW	No water encountered			
75	2.1	7.1							
5	0.9	-							
80	0.0	0.0							
10	0.0	0.0							
50	-	-							
15	0.0	0.0							
100	0.6	15.3					(7.5-16') CLAY with trace GRAVEL and SAND, hard, then soft to firm from 10-16' bgs, yellowish brown and brown then very dark gray and gray from 10-16' bgs, dry then very moist at 10' bgs, low plasticity, cohesive	CL	Moderate odor from 7.5-16' bgs
	2.2						(16-17') CLAY with GRAVEL and SAND, soft, black and gray, very moist, low plasticity, cohesive	CL/GW	Strong odor with product from 16-17' bgs
							(17-18') CLAY with trace GRAVEL and SAND, firm, very dark gray and gray, very moist, low plasticity, cohesive	CL	
20			End of Boring						



Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 2.44' ags
 Riser: 0 - 3' bgs
 Screen: 3 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 2 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 2' bgs [Grain Size: bentonite chips]



ARM Group LLC
Engineers and Scientists

Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/28/20
 Piezometer Installation Date : 10/28/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571343.1
 Easting (US ft) : 1461199.9
 0-Hr DTW : 15.05' TOC
 48-Hr DTW : 11.80' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119Q-SB/PZ
(Reinstalled)
(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-11') Non-native SAND with SILT and SAND-sized FILL, medium dense, brown with yellow, dry, no plasticity, no cohesion	SW	
50	1.4	-				
	2.1	-				
	0.7	-				
5	-	-				
	-	-				
26	-	-				
	3.6	-				
	14.2	-				
10	-	-				
60	22.2	-				
	51.5	-				
15	19.7	-	(16-17') CLAY with GRAVEL and SAND, soft, black and gray, very moist, low plasticity, cohesive	CL/GW		
	17.4	-				
			(17-18') CLAY with trace GRAVEL and SAND, firm, very dark gray and gray, very moist, low plasticity, cohesive	CL		
			End of Boring			
20						

Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.29' ags
 Riser: 0 - 3' bgs
 Screen: 3 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 2 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 2' bgs [Grain Size: bentonite chips]



Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/28/20
 Piezometer Installation Date : 10/28/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571440.0
 Easting (US ft) : 1461235.0
 0-Hr DTW : 13.53' TOC
 48-Hr DTW : 12.72' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119U-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		8.6	No Samples Collected	(0-3.5') Non-native SAND and SILT with some SLAG, SAND and GRAVEL-sized, dense, dark brown, dry to moist, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Sand Pack 1" PVC Screen</p> <p>Wet at 12.5' bgs</p> <p>Moderate odor and trace sheen from 13-14.5' bgs</p>
4.5		4.5				
90		21.2				
		2.1				
5		2.6				
		-				
		-				
50		-				
		4.3				
		8.3				
10		-	(3.5-20') CLAY, very firm to hard, light greenish gray and reddish yellow, dry, then very moist at 12' bgs, low plasticity, cohesive	CL		
		-				
		2.8				
		0.5				
15		0.6				
		1.4				
		0.8				
		100				
		0.8				
		0.9				
20		1.4	End of Boring			

Boring terminated at 20' bgs due to water and piezometer installation
 Piezometer installed to 18' bgs
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.07' ags
 Riser: 0 - 8' bgs
 Screen: 8 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 6 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 6' bgs [Grain Size: bentonite chips]



Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 10/28/20
 Piezometer Installation Date : 10/28/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571433.5
 Easting (US ft) : 1461398.5
 0-Hr DTW : 14.25' TOC
 48-Hr DTW : 14.10' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119V-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		2.2	No Samples Collected	(0-5') Non-native SAND and FILL, SAND and GRAVEL-sized, dense, brown to dark brown with some yellow, dry, no plasticity, no cohesion	SW/GW	
	96	4.2				
		5.3				
		2.1				
5		6.8		(5-8') SILT with SAND and trace CLAY, hard, light greenish gray, brown, and black, dry, no plasticity, no cohesion	ML	
	100	8.2		(8-17') CLAY with SILT and SAND, hard, light greenish gray with some black and yellowish brown, then brown and grayish brown at 12' bgs, dry, low plasticity, cohesive	CL	
		63.4				
		5.4				
		2.2				
10		3.2		(17-20') GRAVEL and SAND with CLAY, dense to medium dense, very dark brown, with some gray and red, wet, no plasticity, no cohesion	GW-GC/SW	Wet at 18' bgs
	60	-				
		-				
		10.3				
15		8.2				
	40	7.2				
		-				
		-				
20		2.0				
		0.2				
				End of Boring		
25						

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 2.52' ags
 Riser: 0 - 5' bgs
 Screen: 5 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 3 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 5' bgs [Grain Size: bentonite chips]



ARM Group LLC
Engineers and Scientists

Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 11/2/20
 Piezometer Installation Date : 11/2/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571396.9
 Easting (US ft) : 1460917.8
 0-Hr DTW : 13.28' TOC
 Piezometer destroyed 11/3/20 :
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119X-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-17') Non-native SAND and SILT with SLAG/FILL, SAND and GRAVEL-sized, dense, dark brown to brown with yellow, dry then wet at 12' bgs, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Sand Pack 1" PVC Screen</p>
50	-	-				
0.0	-	-				
0.0	-	-				
5	-	-				
60	-	-				
0.0	-	-				
0.0	-	-				
10	-	-				
60	-	-				
15	-	-	(17-18') SILT with trace SAND, firm, dark brown, very moist, low plasticity, cohesive	ML	Wet at 12' bgs	
100	-	-				
20	-	-	End of Boring			

Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.43' ags
 Riser: 0 - 3' bgs
 Screen: 3 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 2 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 2' bgs [Grain Size: bentonite chips]



ARM Group LLC
Engineers and Scientists

Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 11/2/20
 Piezometer Installation Date : 11/2/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571502.3
 Easting (US ft) : 1460747
 0-Hr DTW : 12.88' TOC
 48-Hr DTW : 12.05' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119Y-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-7') Non-native SAND SLAG, SAND and GRAVEL-sized, dense, dark brown and grayish brown, dry, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Sand Pack 1" PVC Screen</p>
44	-	-				
5	-	-				
20	-	-		(7-16.8') SLAG GRAVEL, fine to coarse, medium dense to dense, brownish gray and gray, moist then wet at 14' bgs	GW	Wet at 14' bgs
10	-	-				
15	-	-				
50	-	-		(16.8-18') CLAY, soft, gray, wet, low plasticity, cohesive	CL	
20	-	-				
End of Boring						

Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.35' ags
 Riser: 0 - 8' bgs
 Screen: 8 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 6 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 6' bgs [Grain Size: bentonite chips]



ARM Group LLC
Engineers and Scientists

Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 11/2/20
 Piezometer Installation Date : 11/2/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571553.8
 Easting (US ft) : 1461162.8
 0-Hr DTW : 13.68' TOC
 48-Hr DTW : 13.06' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119Z-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-18') Non-native SAND and SLAG/FILL, SAND and GRAVEL-sized, with some SILT, medium dense to dense, brown to dark brown and yellow, dry then wet at 12' bgs, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Sand Pack 1" PVC Screen Wet at 12' bgs</p>
84	0.0	0.0	No Samples Collected			
5	-	0.0				
80	0.0	0.0				
10	-	0.0				
60	0.1	0.0				
15	-	0.0				
67	2.0	0.7				
End of Boring						
20						

Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.29' ags
 Riser: 0 - 8' bgs
 Screen: 8 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 6 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 6' bgs [Grain Size: bentonite chips]



ARM Group LLC
Engineers and Scientists

Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 11/2/20
 Piezometer Installation Date : 11/2/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571572.6
 Easting (US ft) : 1461371.0
 0-Hr DTW : 13.75' TOC
 48-Hr DTW : 12.92' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119AA-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0		(0-14.3') Non-native SAND and SLAG/FILL, SAND and GRAVEL-sized, with SILT, dense, brown to dark brown with red and yellow, dry then wet at 12' bgs, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Sand Pack 1" PVC Screen</p> <p>Wet at 12' bgs</p>
100		0.0	No Samples Collected	(14.3-18') CLAY, soft, gray, wet, low plasticity, cohesive		
5		-				
80		0.0				
10		-			CL	
60		0.0				
15		0.0				
100		0.0				
		0.0				
		0.0				
				End of Boring		
20						

Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.33' ags
 Riser: 0 - 8' bgs
 Screen: 8 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 6 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 6' bgs [Grain Size: bentonite chips]



ARM Group LLC
Engineers and Scientists

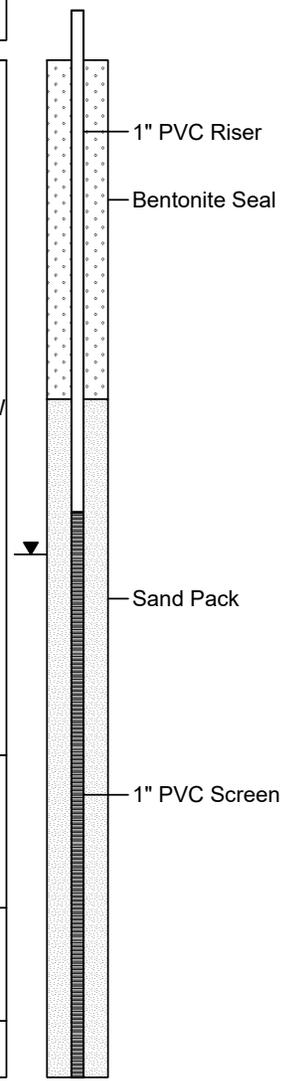
Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 11/2/20
 Piezometer Installation Date : 11/2/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571598.1
 Easting (US ft) : 1461546.7
 0-Hr DTW : 12.68' TOC
 48-Hr DTW : 11.94' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119BB-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	-	No Samples Collected	(0-12.3') Non-native SAND and SLAG/FILL, SAND and GRAVEL-sized, with some SILT, dense, brown, gray, and strong brown, dry then wet at 12' bgs, no plasticity, no cohesion	SW/GW	Wet at 12' bgs
60	0.0					
5	-					
40	0.0					
10	-	0.0		(12.3-13.5') SILTY SAND with trace SLAG GRAVEL, dense, very dark gray, wet, no plasticity, no cohesion	SM	
15	-	0.0		(15-17') SLAG GRAVEL, fine to coarse, dark gray, wet, no plasticity, no cohesion	GW	
83	0.0	0.0		(17-18') CLAY, firm to soft, very dark gray, moist to very moist, low plasticity, cohesive	CL	
End of Boring						
20						



Boring terminated at 18' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.19' ags
 Riser: 0 - 8' bgs
 Screen: 8 - 18' bgs [Slot Size: 0.010"]
 Sand Pack: 6 - 18' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 6' bgs [Grain Size: bentonite chips]



Client : Tradepoint Atlantic
 ARM Project No. : 20010222
 Project Description : Sparrows Point - Parcel B22
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Replogle, E.I.T.
 Drilling Company : GSI
 Driller : D. Marchese
 Drilling Equipment : Geoprobe 7822DT

Soil Boring Installation Date : 11/2/20
 Piezometer Installation Date : 11/2/20
 Casing/Riser/Screen Type : PVC
 Borehole Diameter : 2.25"
 Riser/Screen Diameter : 1"
 Northing (US ft) : 571126.6
 Easting (US ft) : 1461293.6
 0-Hr DTW : 23.15' TOC
 48-Hr DTW : 9.35' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B22-119CC-SB/PZ

(page 1 of 1)

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	-	0.0	No Samples Collected	(0-3.5') Non-native SAND and SILT with some SLAG, SAND and GRAVEL-sized, dense, dark brown, dry to moist, no plasticity, no cohesion	SW/GW	<p>1" PVC Riser Bentonite Seal Sand Pack 1" PVC Screen</p> <p>No water encountered</p>
80	0.0					
5	-	0.0		(3.5-20') CLAY, very firm to hard, light greenish gray and reddish yellow, dry, then very moist at 12' bgs, low plasticity, cohesive	CL	
84	0.0					
10	-	0.0				
80	0.0					
15	-	0.0				
100	0.0					
20	-	0.0		(20-25') CLAY, hard, reddish yellow and pale brown, dry, low plasticity, cohesive	CL	
100	0.0					
25	-	0.0	End of Boring			

Boring terminated at 25' bgs due to water and piezometer installation
 Piezometer installed to 20' bgs
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.29' ags
 Riser: 0 - 5' bgs
 Screen: 5 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 3 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 3' bgs [Grain Size: bentonite chips]

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APPENDIX B

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Groundwater Sampling



ARM Group Inc.

Earth Resource Engineers and Consultants

Project Name: <u>Finishing Mills GW</u>	Project Number: <u>150300M-21</u>
Well Number: <u>FM-0050P2S</u>	Date: <u>9/25/16</u>
Well Diameter (in): <u>1"</u>	One Well Volume (gal): <u>0.62</u>
Total Depth (ft): <u>15</u>	Purge Rate (mL/min) <u>400 mL/min</u> <u>500 mL/min</u>
Depth to Water (ft) <u>10.72</u>	Length of time Purged (min)
Condition of Casing: <u>none</u>	Condition of Pad: <u>none</u>

WELL PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance μ (µs/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
0839	1.85	10.73	15.5	4.10	756	1.08	412.7	1.46	
0844	2.5	10.73	14.7	6.82	751	0.31	158.5	1.80	
0849	3.1	10.73	14.7	7.21	751	0.28	124.8	1.35	
0854	3.7	10.73	14.8	7.33	750	0.26	106.1	1.29	
0859	4.3	10.73	14.8	7.48	750	0.26	-1.0	1.46	
0904	5.0	10.73	14.8	7.50	749	0.24	-11.5	1.28	
0909	5.6	10.73	14.8	7.47	747	0.25	-22.1	1.15	pH 9.32
0914	6.1	10.74	14.8	9.33	747	0.25	-29.5	1.20	
0919	6.75	10.74	14.8	9.33	747	0.26	-35.8	1.32	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
FM-005-P2S	0924	TCL-VOCs	3 - 40 mL VOA	HCl	y
		TPH-GRO	3 - 40 mL VOA	HCl	y
		TPH-DRO	2 - 1 L Amber	none	y
		TCL-SVOCs	2 - 1 L Amber	none	y
		TAL-Metals & Mercury (Total)	1 - 250 mL Plastic	HNO3	No
		Hexavalent Chromium	1 - 250 mL Plastic	None	y
		Cyanide	1 - 250 mL Plastic	NaOH	y
		TAL-Metals & Mercury (Dissolved)	1 - 250 mL Plastic	HNO3	y
Matrix Spike					
Duplicate					

Sampled By: LMG

Comments: ****Dissolved metals are Field Filtered****

begin devel @ 0826, begin purge @ 0839

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

Groundwater Sampling



ARM Group Inc.

Earth Resource Engineers and Consultants

Project Name: <u>Finishing Mills GW</u>	Project Number: <u>150300 M-21</u>
Well Number: <u>FM-007-P25</u>	Date: <u>5/25/16</u>
Well Diameter (in): <u>1"</u>	One Well Volume (gal): <u>0.62</u>
Total Depth (ft): <u>15</u>	Purge Rate (mL/min) 500 mL/min <u>300 mL/min to 150 mL/min</u>
Depth to Water (ft) <u>4.10</u>	Length of time Purged (min)
Condition of Casing: <u>none</u>	Condition of Pad: <u>none</u>

WELL PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance μ (μ S/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1032	1.5	12.29	17.1	6.61	1827	8.30	24.6	73.9	flow 300 mL/min
1037	1.75	13.35	16.6	6.63	1839	7.29	37.5	108	cloudy
1042	1.75	5.60	24.8	6.35	1894	6.33	22.6	69.5	
1047	2.0	9.1	18.3	6.91	1679	6.31	35.5	56.9	flow 150 mL/min
1052	2.5	10.1	18.7	6.97	1698	6.10	26.2	31.0	
1117	3.5 2.5	10.94	18.6	6.97	1695	5.92	18.9	33.3	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
FM-007-P25	1122	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2 - 1 L Amber	none	Y
		TAL-Metals & Mercury (Total)	1 - 250 mL Plastic	HNO3	No
		Hexavalent Chromium	1 - 250 mL Plastic	None	Y
		Cyanide	1 - 250 mL Plastic	NaOH	Y
		TAL-Metals & Mercury (Dissolved)	1 - 250 mL Plastic	HNO3	Y
Matrix Spike					
Duplicate					

Sampled By: LMG

Comments: ****Dissolved metals are Field Filtered****
1018 begin devel; 1032 begin purge
1027 purge dry

sample flow rate:
~~500 mL/min~~

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

Low Flow Sampling



ARM Group Inc.

Earth Resource Engineers and Consultants

Project Name: <u>Area B - Finishing Mills</u>	Project Number: <u>150300M-21-3</u>
Well Number: <u>FM-013-P25</u>	Date: <u>6/10/16</u>
Well Diameter (in): <u>1"</u>	One Well Volume (gal):
Total Depth (ft):	QED Controller Settings: <u>6.50</u>
Depth to Water (ft) <u>5.98</u>	Flow Rate (mL/min) <u>400</u>
Condition of Casing / Pad: <u>good / good</u>	Length of time Purged (min) <u>30</u>

WELL PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1337	0.4	6.94	18.04	9.73	2.800	0.17	44.6	—	water black
1342	0.75	6.94	17.90	9.26	2.740	0.26	70.3	1254	
1347	1.1	6.05	17.87	8.74	2.689	0.91	84.9	1250	
1352	1.4	6.81	17.98	8.41	2.650	0.91	85.4	1000	
1357	1.75	6.92	17.77	8.13	2.631	0.65	87.3	21.2	
1402	2.2	6.99	17.88	8.03	2.598	0.47	88.8	22.3	
1407	2.5	7.09	18.02	7.98	2.578	0.39	89.4	23.1	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
FM-013-P25	1410	TCL-VOCs	3 - 40 mL VOA	HCl	Yes
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2 - 1 L Amber	none	
		TAL-Metals & Mercury (Total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium	1 - 250 mL Plastic	None	
		Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved)	1 - 250 mL Plastic	HNO3	
Matrix Spike					
Duplicate					1

Sampled By:
N. Kurtz

Comments: ****Dissolved metals are Field Filtered****

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

Groundwater Sampling



ARM Group Inc.

Earth Resource Engineers and Consultants

Project Name: <u>Finishing Mills G.W. hve.</u>	Project Number: <u>150300M-21-3</u>
Well Number: <u>TM09-P2M007</u>	Date: <u>6-28-16</u>
Well Diameter (in): <u>2</u>	One Well Volume (gal):
Total Depth (ft):	Purge Rate (mL/min) <u>300</u>
Depth to Water (ft) <u>10.82</u>	Length of time Purged (min)
Condition of Casing: <u>rust</u>	Condition of Pad: <u>none</u>

WELL PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1000	0.1	10.82	17.74	11.15	1.741	9.11	-38.8	22.4	clear
1005	0.4	10.82	17.22	11.87	1.749	0.45	-125	12.2	
1010	0.75	10.82	17.19	12.02	1.743	0.30	-90.3	12.03	
1015	1.10	10.82	17.21	12.14	1.734	0.24	-116.6	6.26	
1020	1.5	10.82	17.14	12.18	1.728	0.22	-138.8	5.10	
1025	1.8	10.82	17.15	12.22	1.730	0.18	-142.9	3.16	
1030	2.15	10.82	17.17	12.24	1.727	0.18	-152.1	2.49	
1035	2.5	10.82	17.30	12.26	1.724	0.16	-159.9	3.38	
1040									

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
TM09-P2M007	1040 1039	TCL-VOCs	3 - 40 mL VOA	HCl	✓
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		TAL-Metals & Mercury (Total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium	1 - 250 mL Plastic	None	
		Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved)	1 - 250 mL Plastic	HNO3	
		PCB	2-1 LAG		
		Matrix Spike			
		Duplicate			

Sampled By: LMG

Comments: **Dissolved metals are Field Filtered**

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

Low Flow Sampling



ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: Finishing Mills GW Sample Project Number: 150300M-21-3
 Well Number: TM11-PZM007 Date: 6/29/14 1344
 Well Diameter (in): 2" One Well Volume (gal):
 Total Depth (ft): QED Controller Settings:
 Depth to Water (ft): 10.20 Flow Rate (mL/min) 300
 Condition of Casing / Pad: BAD / BAD Length of time Purged (min) 30

WELL PURGING RECORD

Time	Volume Purged (gallons) <i>Liters</i>	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1349	1.5	10.20	18.53	8.63	2.166	0.34	-766	3.56	
1354	3.0	10.20	18.53	8.87	2.166	0.22	-23.2	2.95	
1359	4.5	10.20	18.44	9.02	2.182	0.21	-38.1	2.45	
1404	6.0	10.20	18.41	9.12	2.182	0.09	-52.1	1.33	
1409	7.5	10.20	18.47	9.12	2.193	0.11	-41.5	1.97	
1414	9.0	10.20	18.51	9.21	2.178	0.09	-68.4	1.50	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
<i>TM11-PZM007</i>	<i>1420</i>	TCL-VOCs	3 - 40 mL VOA	HCl	<i>yes</i>
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		TAL-Metals & Mercury (Total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium	1 - 250 mL Plastic	None	
		Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved)	1 - 250 mL Plastic	HNO3	
<i>PCBs</i>	<i>2 - 16 liter Amber</i>	<i>None</i>	<i>✓</i>		
Matrix Spike					
Duplicate <i>✗ DUP-ITY</i>					

Sampled By:
Jason T. Apple

Comments: ****Dissolved metals are Field Filtered****

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

Low Flow Sampling



ARM Group Inc.

Earth Resource Engineers and Consultants

Project Name: Finishing Mills GW Sample

Project Number: 150300-21-3

Well Number: TM13-P2M007

Date: 6/27/16 0917

Well Diameter (in): 2 inch

One Well Volume (gal):

Total Depth (ft):

QED Controller Settings: ---

Depth to Water (ft) 11.44

Flow Rate (mL/min) 500 → 350

Condition of Casing / Pad: OK/OK

Length of time Purged (min) 35

WELL PURGING RECORD

Time	Volume Purged (gallons) <i>liters</i>	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
0922	2.5	11.47	17.02	10.63	2.008	0.53	116.9	3.79	
0927	5.0	11.47	16.93	11.10	2.054	0.40	-170.3	3.67	
0932	7.0	11.47	17.13	11.26	2.074	0.35	-193.3	2.86	
0937	8.5	11.47	17.22	11.33	2.075	0.33	-203.3	2.78	
0942	10.0	11.47	17.26	11.42	2.085	0.27	-212.1	2.76	
0947	11.5	11.47	17.33	11.48	2.086	0.26	-217.3	2.74	
0952	13.0	11.47	17.39	11.54	2.085	0.21	-222.5	2.68	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
TM13-P2M007	1000	TCL-VOCs	3 - 40 mL VOA	HCl	X
		TPH-GRO	3 - 40 mL VOA	HCl	X
		TPH-DRO	2 - 1 L Amber	none	X
		TCL-SVOCs	2- 1 L Amber	none	X
		TAL-Metals & Mercury (Total)	1 - 250 mL Plastic	HNO3	X
		Hexavalent Chromium	1 - 250 mL Plastic	None	X
		Cyanide	1 - 250 mL Plastic	NaOH	X
		TAL-Metals & Mercury (Dissolved)	1 - 250 mL Plastic	HNO3	X
		PCBs	2-1 L Amber	None	X

Matrix Spike

Duplicate

Sampled By:

Sty

Comments: ****Dissolved metals are Field Filtered****

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

Low Flow Sampling Permanent Wells



ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: <u>PO21</u>	Project Number:
Well Number: <u>B22-119-P2</u>	Date: <u>5/18/2010</u>
Well Diameter (in): <u>1</u>	One Well Volume (gal):
Depth to Product (ft): <u>NONE</u>	QED Controller Settings:
Depth to Water (ft): <u>11.42</u>	Flow Rate (mL/min) <u>300</u>
Product Thickness (ft): <u>-</u>	Length of time Purged (min)
Depth to Bottom (ft): <u>22.48</u>	Condition of Pad/Cover: <u>1</u>

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1115	1	15.72	21.5	8.17	2.006	2.80	-215.2	112	
1120	1.3	16.32	22.2	8.58	1.991	2.18	-250.8	78.4	
1125	.6	17	22.1	8.97	2.046	1.84	-176.4	51.2	
1130	.9	17.6	22.7	9.10	2.084	1.66	-289.3	56.4	
1135	1.2	18.2	22.8	9.41	2.185	1.57	-299.6	48.9	
1140	1.5	19.8	22.4	9.66	2.276	1.43	-309.5	31.4	
1145	1.8	19.6	22.3	9.83	2.335	1.38	-318.5	32.4	
1150	2.1	21.00	22.1	10.03	2.426	1.32	-328.4	46.1	
1155	2.4	21.87	22.1	10.13	2.452	1.30	-335.4	23.3	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1200	TCL-VOCs	3 - 40 mL VOA	HCl	
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2 - 1 L Amber	none	
		Oil & Grease	2 - 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	

Matrix Spike

Duplicate

Sampled By: LMG

Comments:

pH not stabilized

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

Low Flow Sampling Permanent Wells



ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: <u>PO21</u>	Project Number:
Well Number: <u>B22-119R-PZ</u>	Date: <u>05/27/2020</u>
Well Diameter (in): <u>1</u>	One Well Volume (gal):
Depth to Product (ft): <u>none</u>	QED Controller Settings:
Depth to Water (ft): <u>13.04</u>	Flow Rate (mL/min): <u>400</u>
Product Thickness (ft): <u>-</u>	Length of time Purged (min):
Depth to Bottom (ft): <u>23.32</u>	Condition of Pad/Cover: <u>1</u>

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1015	1.5	13.04	19.2	9.54	0.821	5.38	846.0	26.4	
1020	1.9		19.3	9.79	0.806	2.99	-66.1	16.9	
1025	2.3		18.8	10.11	0.818	2.24	-112.3	15.8	
1030	2.7		18.2	10.34	0.834	2.02	-135.0	38.4	
1035	3.1		19.4	10.56	0.844	1.80	-159.7	56.2	
1040	3.5		18.6	10.59	0.854	1.66	-175.7	22.1	
1045	3.9		18.0	10.71	0.864	1.57	-195.6	9.43	
1050	4.3		17.8	10.94	0.890	1.53	-204.8	13.2	
1055	4.7		18.0	10.75	0.875	1.50	-211.8	8.97	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1100	TCL-VOCs	3 - 40 mL VOA	HCl	
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		Oil & Grease	2- 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	

Matrix Spike

Duplicate

Sampled By: LMG

Comments:

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

Low Flow Sampling Permanent Wells



ARM Group Inc.

Earth Resource Engineers and Consultants

Project Name: <u>POPL</u>	Project Number:
Well Number: <u>B22-1195-PZ</u>	Date: <u>05/27/2020</u>
Well Diameter (in): <u>1</u>	One Well Volume (gal):
Depth to Product (ft): <u>none</u>	QED Controller Settings:
Depth to Water (ft): <u>11.64</u>	Flow Rate (mL/min) <u>400</u>
Product Thickness (ft): <u>-</u>	Length of time Purged (min)
Depth to Bottom (ft): <u>22.28</u>	Condition of Pad/Cover: <u>1</u>

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1135	1.5	11.7	21.0	7.33	1.028	2.62	-204.1	164	
1140	2	71	22.0	7.29	0.923	2.03	-191.7	122	
1145	2.5		21.8	7.28	0.986	1.80	-189.0	78.2	
1150	3		21.7	7.25	0.961	1.69	-182.5	44.1	
1155	3.5		21.3	7.23	0.933	1.60	-180.5	10.27	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1200	TCL-VOCs	3 - 40 mL VOA	HCl	
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		Oil & Grease	2- 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	
PCB	2 - 1 L Amber	None			

Matrix Spike

Duplicate

Sampled By: LMG

Comments:

moth ball odor

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

Low Flow Sampling Permanent Wells



ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: <u>B22 Peri Lagoon</u>	Project Number: <u>20010222</u>
Well Number: <u>B22-119Z-P2</u>	Date: <u>11/4/20</u>
Well Diameter (in): <u>1</u>	One Well Volume (gal): <u>0.28</u>
Depth to Product (ft): <u>NA</u>	QED Controller Settings: <u>---</u>
Depth to Water (ft): <u>13.06</u>	Flow Rate (mL/min) <u>341</u>
Product Thickness (ft): <u>NA</u>	Length of time Purged (min) <u>30</u>
Depth to Bottom (ft): <u>19.91</u>	Condition of Pad/Cover: <u>---</u>

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1048	0.85	13.12	15.55	11.90	1.38	0.0	-208	27.9	
1053	1.30	13.12	16.13	11.91	1.35		-249	22.5	
1058	1.75	13.12	16.44	11.95	1.33		-255	19.6	
1103	2.20	13.12	16.65	11.97	1.34		-255	11.1	
1108	2.65	13.12	16.78	11.97	1.32		-258	8.14	
1113	3.10	13.12	17.01	11.98	1.31		-260	4.54	
1118	3.55	13.12	17.13	11.98	1.29		-258	2.27	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
<u>B22-119Z-P2</u>	<u>1125</u>	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2 - 1 L Amber	none	PA# only Y
		Oil & Grease	2 - 1 L Amber	HCl	Y
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	N
		Total Cyanide	1 - 250 mL Plastic	NaOH	N
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	N
PCB	2 - 1 L Amber	None	N		
Matrix Spike					N
Duplicate					N

Sampled By: CLP

Comments:

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

Low Flow Sampling Permanent Wells



AKM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B22 Porir Lagoon
 Well Number: B22-119BB-P2
 Well Diameter (in): 1
 Depth to Product (ft): NA
 Depth to Water (ft): 11.94
 Product Thickness (ft): NA
 Depth to Bottom (ft): 21.14

Project Number: 20010222
 Date: 11-4-20
 One Well Volume (gal): 0.38
 QED Controller Settings: _____
 Flow Rate (mL/min): _____
 Length of time Purged (min): 25
 Condition of Pad/Cover: _____

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1435	1.25	11.94	19.88	11.42	0.763	0.0	-79	29.75	
1440	1.70	11.94	19.91	11.46	0.756		-115	14.84	
1445	2.15	11.94	19.92	11.42	0.742		-114	9.28	
1450	2.60	11.94	19.88	11.36	0.725		-109	5.03	
1455	3.05	11.94	19.87	11.34	0.720		-106	4.19	
1500	3.50	11.94	19.84	11.30	0.714		-103	3.50	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
<u>B22-119BB-P2</u>	<u>1510</u>	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2 - 1 L Amber	none	Y
		Oil & Grease	2 - 1 L Amber	HCl	Y
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	N
		Total Cyanide	1 - 250 mL Plastic	NaOH	N
		TAL-Metals & Mercury (Dissolved) Field Filtered	1 - 250 mL Plastic	HNO3	A
		Hexavalent Chromium (Dissolved) Field Filtered	1 - 250 mL Plastic	none	N
PCB	2 - 1 L Amber	None	N		
Matrix Spike					N
Duplicate					N

Sampled By: LLP

Comments:

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

APPENDIX C

**Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland**



060518-1: View of the PORI Lagoon facing south.



060518-2: View of the ground surface at the PORI Lagoon.

**Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland**



060518-3: View of the sheet piling at the northern end of the PORI Lagoon.



060518-4: View of the sheet piling at the northern end of the PORI Lagoon.

**Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland**



060518-5: View of excavated material from test pitting activities at the PORI Lagoon.



060518-6: View of excavated material from test pitting activities at the PORI Lagoon.

**Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland**



061720-1: View of excavated material from test pitting activities at the PORI Lagoon.



061720-2: View of excavated material from test pitting activities at the PORI Lagoon.
Sheet piling is visible to the left side of the image.

Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland



061720-3: View of excavated material from test pitting activities at the PORI Lagoon. Sheet piling is visible in the background.

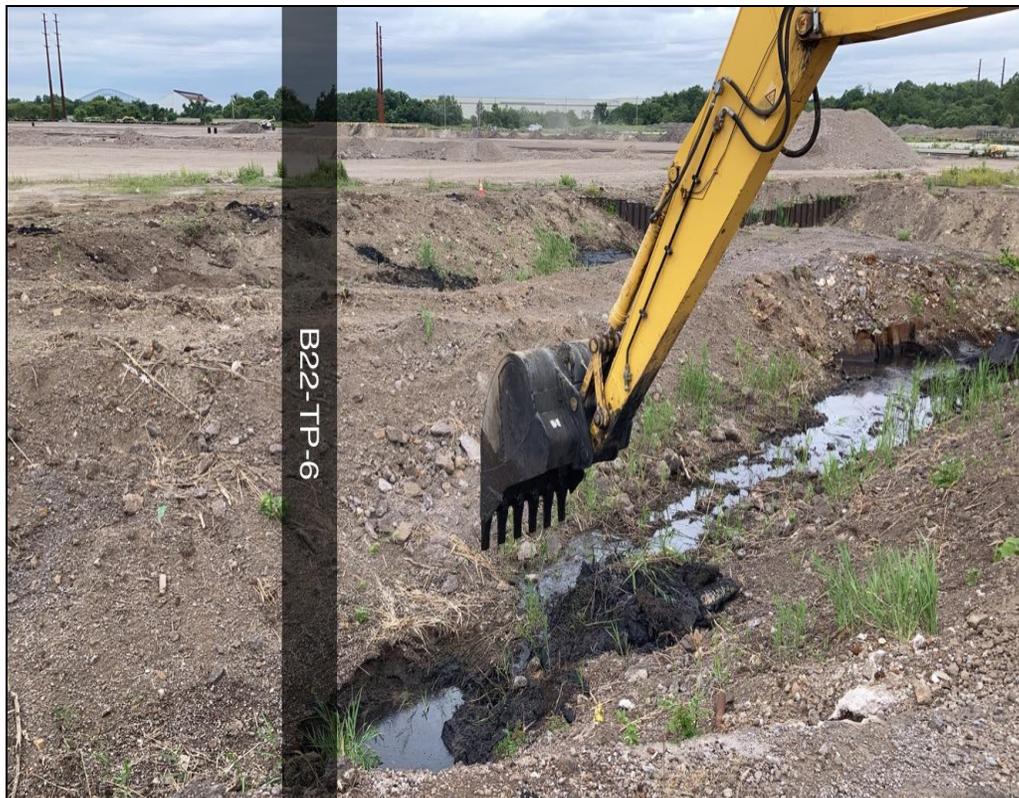


061720-4: View of excavated material from test pitting activities at the PORI Lagoon.

**Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland**



061720-5: View of excavated material from test pitting activities at B22-TP-2.



061720-6: View of excavated material from test pitting activities at B22-TP-6.
Sheet piling is visible in the background.