



*Updated Groundwater Source
Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon*

Prepared for:
Port of Portland

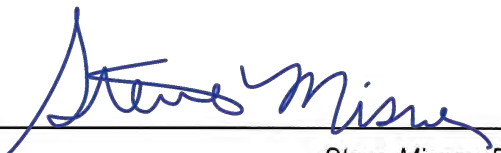
December 5, 2023
320001056-17 Task 3

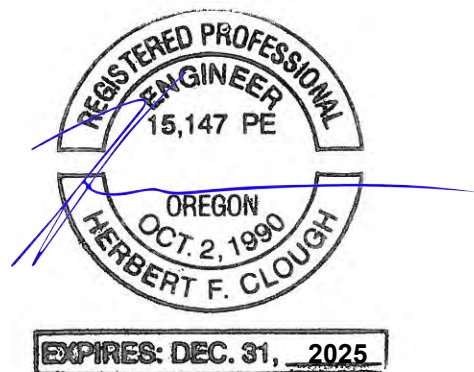


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Steve Misner, R.G.
Senior Associate Hydrogeologist



*Herb Clough, P.E.
Principal Engineer*

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1.0 Introduction

1.1 Purpose

This report presents an updated Source Control Evaluation (SCE) for groundwater at the Willamette Cove Upland Facility (the Facility). This SCE was performed in response to a request by the Oregon Department of Environmental Quality (DEQ) to identify and evaluate sources of groundwater contamination that may reach the Willamette River, and (if necessary) recommend remedial actions, consistent with the DEQ-U.S. Environmental Protection Agency (EPA) Portland Harbor Joint Source Control Strategy (JSCS; DEQ/EPA, 2005). This work was performed under Voluntary Cleanup Agreement EC-NWR-00-26 (VCP Agreement) between the Port of Portland (Port), Metro, and the DEQ. The Facility is defined in the DEQ Environmental Cleanup Site Information (ECSI) database as ECSI No. 2066.

This SCE is comprehensive, incorporating the original and revised SCEs submitted to the DEQ on June 21, 2019 and January 20, 2020, respectively; the draft Hydrogeologic Conceptual Site Model submitted September 4, 2020; groundwater and porewater data collected by both the upland and in-water teams since prior submittals; and revisions in response to comments on the prior submittals received from the DEQ, EPA, and the Tribes.

1.2 Objective

The objective of the SCE is to provide a comprehensive update of the potential for groundwater at the Facility to adversely impact Willamette River sediments or surface water.

1.3 Report Organization

This report is a groundwater source control evaluation covering the following topics.

- Sections 2 through 4 discuss background information on the Facility including potential sources and migration pathways.
- Section 5 summarizes investigations of groundwater, sediment, and porewater. Groundwater, sediment, and porewater data are presented in Appendices A through D. Logs of test pits, borings, and monitoring wells are included in Appendix E.
- A detailed hydrogeological model is presented in Section 6, incorporating extensive data collected by the in-water design team. Appendices F through H present data collected by the in-water design team and evaluation of groundwater gradients.
- Groundwater, sediment, and porewater data screening are summarized in Section 7.
- In Section 8, a comprehensive lines-of-evidence evaluation of the potential for contaminant transport to the river via groundwater is presented, including conclusions and recommendations.

2.0 Site Description and History

2.1 Site Description

The Facility is located along the northeast bank of the Willamette River in the St. Johns area of Portland, Oregon (location shown on Figure 1). It is situated between River Miles 6 and 7 on the Willamette River and is mostly in Section 12 of Township 1 North, Range 1 West, Willamette Meridian. The Facility has been owned by Metro since 1996. Figure 2 provides a current plan of the Facility as well as the surrounding area. For purposes of describing the Facility, it has been divided into West, Central, and East Parcels as shown on Figure 2.

Extent of the Upland Facility. The upland portion of the Facility is approximately 3,000 feet long and varies from 110 to 700 feet in width. The cove is set in up to 800 feet from the main river channel; it was created primarily as a result of the placement of the embankment leading up to the Burlington Northern Santa Fe (BNSF) railroad bridge. The Facility as defined in the VCP Agreement covers approximately 24 acres of upland area that is inland from the ordinary low water line (OLWL). However, the scope of work for the VCP Agreement limits the work to inland from the mean high water (MHW) line (defined as 13.3 feet, North American Vertical Datum 88 [NAVD88]) to the property line with the Union Pacific Railroad (UPRR). DEQ, EPA, Metro, and the Port have agreed that the site riverbank at the Facility (defined as the area from the waterline to the top of bank [TOB]) will be addressed as part of in-water activity associated with the Portland Harbor Superfund Site (PHSS).

Access. The Facility is accessible by vehicle from North Edgewater Street. A locked gate is present at the north end of North Edgewater Street one block south of its intersection with North Willamette Boulevard. A gravel roadway is present on the Central and East Parcels, but vehicle access is limited by concrete blocks/rubble at the North Edgewater Street entrance. Access to the area by foot or from the river is possible.

Structures and Improvements. There are no structures on the Facility. Indications of previous structures include a large concrete foundation and a paved roadway in the eastern portion of the Facility, several smaller concrete structures or foundations, and structural piling within the cove and along the riverbank. Riprap is present along much of the riverbank. Sandy beaches are present at the west end of the Central Parcel and at the inner portion of the cove on the East Parcel.

Topography. The Facility is situated on a terrace created by historical filling. Overall, the topography of this terrace is flat, with an elevation ranging between 30 and 45 feet (all elevations in the report refer to NAVD88 unless otherwise noted). The southern portion of the West Parcel is slightly higher, at elevation 50 to 55 feet. Berms and hummocks are occasionally present. The riverbank is generally a steep slope down to the river. The river water elevation is typically in the range of 5 to 14 feet and is subject to a mean tidal range of about 2 feet.

The BNSF railroad embankment along the southeast perimeter of the cove rises steeply about 50 feet above the cove. North of the property, across the UPRR tracks, is a naturally formed 120- to 150-foot-high bluff. By the Central and East Parcels, this bluff rises at approximately 5 horizontal (H):4 vertical (V). Near the West Parcel, the slope is approximately 10H:3V.

Surrounding Properties. The Facility is bordered on the north by the UPRR tracks. Farther to the north is a vegetated bluff. A residential area is present on top of the bluff and farther inland. Bordering the northwest side of the Facility is a vacated portion of North Richmond Avenue with industrial property beyond. To the southeast is an embankment for the BNSF railroad bridge over the Willamette River. On the opposite side of this embankment is the former McCormick & Baxter Creosoting Company, a federal Superfund Site (McCormick & Baxter). Soil and groundwater beneath the southern portion of the East Parcel of the Facility have been impacted by a contaminant plume (including polycyclic aromatic hydrocarbons [PAHs], semi-volatile organic compounds [SVOCs], dioxins/furans, arsenic, chromium, copper, zinc, pentachlorophenol, and non-aqueous phase liquids [NAPL]) emanating from McCormick & Baxter. The McCormick & Baxter contaminant plume has migrated northwestward from McCormick & Baxter's former wood treatment operations, under the railroad embankment, and has emerged in the sediments of the cove. DEQ, acting on behalf of the EPA, implemented a remedial action consisting of a subsurface barrier wall on the McCormick & Baxter site and a sediment cap that includes a portion of the cove sediments. The McCormick & Baxter remedy was implemented prior to cleanup levels being established for the PHSS.

2.2 Historical Site Use

West Parcel. The West Parcel was originally developed in 1901 as a plywood mill and operated as a wood products facility into the 1970s. An inlet from the river on this parcel was used as a log pond to supply the mill, and the log pond was filled beginning in approximately 1973 (see Figure 2). The Portland Development Commission (PDC) purchased the property in 1979. The property has remained vacant since. In 1996, the property was sold to Metro for the purpose of creating a green space area to be used as a public park.

Central Parcel. The Central Parcel was developed in 1903 in conjunction with the construction of the St. Johns Dry Docks at the Facility. Between 1903 and 1924, shops and ancillary structures that provided support for dry dock activities were constructed. The dry docks were closed in 1953. The western portion of the Central Parcel was sold in 1950 and it was incorporated into the plywood and lumber mill operations on the adjacent West Parcel. The remainder of the Central Parcel was sold in 1953 and developed as a sawmill. By 1970, the sawmill was no longer in use. Up until 1981, portions of the property were used for a variety of purposes such as log rafting, a marine salvage company, a demolition contractor facility, woodworking facilities, and boat building. By 1981, the property was purchased by PDC, and PDC demolished the buildings by 1982. The property has remained vacant since. In 1996, the property was sold to Metro for the purpose of creating a green space area to be used as a public park.

East Parcel. The East Parcel was occupied by a cooperage plant (i.e., wood barrel manufacturer) from 1915 until the 1950s, when declining demand led to a focus on plywood production. Until 1980, a variety of wood-product-related businesses occupied the parcel. PDC purchased the property in 1980 and demolished the buildings by 1982. The property has remained vacant since. In 1996, the property was sold to Metro for the purpose of creating a green space area to be used as a public park.

2.3 Current Site Use

The Facility is currently vacant, covered with invasive and native vegetation, and it provides habitat for opportunistic use by wildlife. The site is not managed for any human use and is posted to prohibit trespassing. However, trespassers do come on the site (e.g., houseless persons and joggers).

The Facility is currently zoned as an open space (OS) zone with “g” (River General) and “q” (River Water Quality) greenway overlay zones (City of Portland, 2023a). The open space zone is intended to preserve and enhance public and private open, natural, and improved park and recreational areas. Greenway regulations are also intended to protect, conserve, enhance, and maintain the natural, scenic, historic, economic, and recreational qualities of lands along Portland’s rivers. Specifically, the “g” overlay is intended to allow public use and enjoyment of the waterfront and allow enhancement of the river’s scenic and natural qualities. The “q” overlay is designed to protect the functional values of water quality resources by limiting or mitigating the impact of development in the 50- to 200-foot setback from the top of bank. Other nearby zoning includes commercial (EG2), residential (R2 and R5), open space (OS), and industrial (IH and IG2).

The zoning map shows a major public trail through the Facility, generally running parallel to the UPRR rail line. However, the trail does not exist yet, but is a planned multi-use trail in the Regional Trails System Plan adopted by Metro (Metro, 2023). The Facility is identified as a Viewpoint in the Scenic View Features inventory (City of Portland, 2023a and 2023b). These features are based on a citywide inventory that identified scenic resources as part of the Scenic Resources Protection Plan (City of Portland, 1991).

2.4 Potential Sources of Contamination and Proximity to River

West Parcel. As presented in the Remedial Investigation (RI) report (Hart Crowser, 2003), historical features on or adjacent to the West Parcel posing a potential environmental concern included a glue mixing and gluing room, glue storage, presses, debarkers, an oil house, a blacksmith shop, a grinding room, and fuel tanks. Possible contaminants associated with these features are phenol and formaldehyde (from glues); total petroleum hydrocarbons (TPH) and PAHs (from fuel and hydraulic oil use); metals (from grinding); volatile organic compounds (VOCs; from use of solvents to clean metal); and polychlorinated biphenyls (PCBs; from hydraulic oil).

The former log pond on the West Parcel was filled between 1973 and 1979 (based on historical aerial photographs and the purchase of the property by PDC in 1979). The material used to fill the log pond was at

least partially sourced from sites within the PHSS, including from the Arkema Chemicals Company site located directly upstream and across the river from the Facility (Integral, 2008). The material imported to fill the log pond may have contained chemicals associated with the PHSS such as pesticides, PAHs, PCBs, and dioxins/furans.

The extent of the log pond fill is shown in plan view on Figure 2. The area shown was estimated from historical aerial photographs, so the extent represents the approximate river water line as viewed on the photographs. Considering typical bank slopes, the log pond fill would extend slightly farther (above the water line) or slightly less (below the water line) than the line shown. With ground surface elevations between 40 to 45 feet and assuming the mean river level is approximately elevation 10 feet, fill depths at the edge of the extent shown on Figure 2 would be in the range of 30 to 35 feet. For operational use as a log pond, it is expected that a water depth on the order of 10 feet would be needed at low water. Under that assumption and with ordinary low water at approximately elevation 3 feet, the bottom of the pond would have been near elevation -7 feet, suggesting a maximum fill depth of approximately 52 feet. Boring logs of explorations in the log pond area were reviewed, but no clear delineation of the bottom of the fill was observed.

Central Parcel. As presented in the RI report, historical features on or adjacent to the Central Parcel posing a potential environmental concern included a machine shop, blacksmith shops, an air compressor room, an oil warehouse, a paint shed, a fuel oil standpipe, a debarker, a saw filing room, dry docks, a power house, and transformers. Possible contaminants include TPH, PAHs, metals, VOCs, and PCBs.

Additionally, an area of concentrated debris was encountered and removed during a soil removal action in 2015. During the excavation, a layer of multi-colored soil was found directly on top of areas of concentrated debris. This layer of soil ranged from approximately one to three inches thick and consisted of white, red, and black layers. Distinct from and below the multi-colored soil was debris. The debris consisted of brick and metal from surface to a depth of up to 5 feet below ground surface (bgs), but the debris was concentrated from approximately 2 to 5 feet bgs. A matrix of white to gray colored soil was observed in the debris within areas of concentrated brick. The location of the debris area coincided with the highest concentrations of dioxin/furans found in soil at the Facility. The source of the debris and dioxin/furan contamination is not known. Dioxin/furans are also considered possible contaminants to the Central Parcel.

East Parcel. As presented in the RI report, historical features on or adjacent to the East Parcel posing a potential environmental concern included a machine shop, a grinding room, a saw filing room, an oil house, a transformer house, a battery charging room, a glue mixing and gluing room, presses, and a debarker. Possible contaminants include phenol, formaldehyde, TPH, PAHs, metals, VOCs, PCBs, and dioxins/furans.

Adjacent Properties. Immediately adjacent properties include railroads to the north (UPRR) and southeast (BNSF), the McCormick & Baxter facility beyond the BNSF railroad to the southeast, and the Crawford facility

to the west. In addition, an underground petroleum pipeline is present in the UPRR railroad right-of-way to the north. Potential contaminants from these facilities include TPH, PAHs, metals, PCBs, and dioxins/furans.

Proximity of Potential Sources to the Willamette River. As discussed above, potential sources from historical activities may have been located almost anywhere on the upland facility and included activities that extended over the riverbank (e.g., wood mills on all three parcels and ship repair activities on the Central Parcel). Given the overall shape of the Facility, the average distance from the river to the upland parcel boundary farther from the river is 340 feet. Therefore, virtually any upland source is likely less than 300 feet from the river, and several sources are less than 100 feet (e.g., log pond fill on the West Parcel).

2.5 Sediment Chemicals of Interest

During the Lower Willamette Group's (LWG's) RI process, sediment sampling was conducted in the cove and other areas adjacent to the Facility (LWG, 2011; AECOM/Geosyntec, 2019), and sediment areas of potential concern (AOPCs) were established for the Portland Harbor. DEQ prepared the *Portland Harbor Upland Source Control Summary Report* (DEQ, 2016) that summarized the chemicals of interest (COI) in sediments for each Portland Harbor sediment AOPC. In that report, DEQ referred to the AOPCs and associated contaminants as a conservative line of evidence for source control evaluation. As the in-water feasibility study progressed, EPA refined AOPCs into sediment decision units (SDUs; EPA, 2016). Sediments in the cove adjacent to the Facility are located within SDU RM6.5E. SDUs were established based on a list of focused contaminants of concern (COCs) used to simplify the remedial selection process. Based on the sediment sampling results, the list of COIs within AOPC 13 (adjacent to the Facility), and the focused COC list for SDU RM6.5E, the COIs for sediments adjacent to the Facility are listed below.

- Cadmium;
- Copper;
- Mercury;
- Zinc;
- PAHs;
- Bis(2-ethylhexyl)phthalate (BEHP);
- Carbazole;
- PCBs;
- Total dichlorodiphenyltrichloroethane, dichlorodiphenyldichloroethylene, and dichlorodiphenyldichloroethane (DDx); and
- Dioxin/furans.

2.6 Groundwater Chemicals of Interest

The historical research conducted for the upland RI and supplemental sampling identified past activities and features that are potential areas of concern as contaminant sources on the Facility. The potential areas of concern were investigated in the RI and subsequent sampling. Groundwater COIs, considering both upland potential sources and nearshore sediment data, were identified as follows:

- Metals;
- PAHs;
- PCBs;
- Pesticides;
- Dioxins/furans;
- VOCs;
- SVOCs;
- Phthalates;
- Phenols; and
- TPH.

2.7 Regulatory History

In November 2000, the Port and Metro entered into a VCP Agreement (Agreement No. EC-NWR-00-26) with the DEQ for remedial investigation and upland source control measures for the Facility.

To inform the remedial investigation activities, the Port conducted a detailed investigation of the site use and environmental investigation history at the Facility. That information is documented in the *Existing Data/Site History Report* (Hart Crowser, 2000).

In December 2000, a portion of the Willamette River within Portland was placed on the National Priorities List, officially creating the PHSS. Pursuant to the terms of a *Memorandum of Understanding* for the PHSS, the DEQ is the lead agency for assessment and cleanup of soil or groundwater at upland facilities that could pose a source of contamination to sediment or surface water in the PHSS. The Facility was identified by the DEQ as an upland facility in which PHSS cleanup goals should be considered as part of the upland remedy.

Initial remedial investigation activities were conducted from April 2001 through September 2002. The results of that investigation were presented in the *Remedial Investigation* (Hart Crowser, 2003) and *Remedial Investigation Addendum* (Port, 2003). Additional sampling requested by DEQ was conducted in December 2005.

An analysis of the baseline risk for human health and ecological receptors at the Facility was submitted in draft form to DEQ in 2007. The baseline risk assessment was revised based on comments from DEQ and additional data collected during the revision process. The revisions were presented in two *Residual Risk Assessment* (RRA) documents for human health and ecological receptors, respectively (Formation, 2013 and 2014a). The conclusions of the RRAs have been updated to include new information as additional remedial investigation and actions have been completed. These updated evaluations have been documented in technical memoranda (Formation, 2014b; Port, 2018).

Based on site characterization completed during remedial investigation activities, an SCE was completed, and the results submitted to DEQ in February 2013 (Apex, 2013). An evaluation of remedial options and recommendation of remedial alternatives to address unacceptable risk at the Facility was documented in the *Feasibility Study* submitted in October 2014 (Apex, 2014).

Soil with higher concentrations of Facility COCs was removed during an interim remedial action performed from October 2015 through January 2016. Excavated soil was taken off-site for disposal at a landfill. In the area on the Facility landward of the top of bank, soil with concentrations above human health hot spot levels was removed.

Based on comments provided by DEQ in response to the FS and SCE submittals, the amount of coordination required between source control and upland remedial actions, and the nexus of source control activities within the PHSS, DEQ requested that the FS and the SCE (addressing all pathways except groundwater) be combined. As a result, these normally separate documents were revised and provided as one submittal. The *Combined Feasibility Study and Source Control Evaluation* (Combined FS/SCE) was submitted in September 2017 (Apex, 2017b).

Between February and September 2018, the Port, DEQ, and Metro conducted six meetings to discuss the comments received from DEQ, EPA, and Metro and proposed revisions to the Combined FS/SCE. The *Revised Feasibility Study and Source Control Evaluation* (Revised FS/SCE), submitted in March 2019, addressed comments and incorporated the extensive discussion between DEQ and the Port in subsequent meetings (Apex, 2019).

Comments provided to the Port from DEQ and EPA requested additional evaluation of the groundwater source control pathway at the Facility to support a source control decision, including incorporation of data being collected by the in-water design team. This current document presents the additional evaluation of groundwater source control.

3.0 Hazardous Substance Releases

Because the major industrial activities at the Property ended some 40 to 50 years ago, few records exist which document actual releases of hazardous substances. Available information from regulatory agencies and Port records were reviewed for information on spills and releases. Most regulations mandating the reporting of spills and releases did not come into effect until after 1970; therefore, there are few if any reported spills and releases from before 1970. No documented surface releases have been identified at the Facility. However, the site investigations demonstrated that releases to soil, groundwater, and sediment have occurred.

4.0 Identification of Migration Pathways

In accordance with the JSCS guidance document (DEQ/EPA 2005; screening criteria revised July 16, 2007), the SCE includes the identification of each known or potentially complete migration pathway to the river. Migration pathways related to soil, direct discharges, and overwater activities are addressed in the *Revised Feasibility Study and Source Control Evaluation* (Apex, 2019) and the responses to comments on that document. This SCE addresses groundwater. Constituents present in groundwater, if any, have the potential to migrate to the river. The groundwater pathway is further evaluated in Sections 5 through 8.

No preferential pathways were identified for the Facility. The only storm or sanitary sewer remaining at the Facility is the City of Portland stormwater line that runs just east of the West-Central Parcel boundary from the stormwater ponds north of the UPRR rail line to outfall 49 (see Figure 2). This line is located above the water table and does not drain any portion of the Facility.

5.0 Summary of Site Investigations

5.1 Groundwater Investigations

Groundwater sampling was conducted on multiple occasions from 1988 to 2021. The following summarizes the groundwater monitoring activities. Sample locations are shown on Figure 3. Tables listing the data are included in Appendix A.

- Pre-Remedial Investigation sampling events focused on the unconfined water table aquifer. The results of the historical groundwater investigations were presented in the RI Report (Hart Crowser, 2003). The scope of these investigations is briefly summarized below.
 - o Due diligence investigation, 1988/1989 – Grab groundwater samples were collected from soil borings (SE/E series) and hand augers (HA-1 through HA-4). Information on the collection methods for these samples is not readily available. It is presumed that only samples for dissolved metals were filtered. Samples were analyzed for metals, TPH, SVOCs, PAHs, PCBs, pesticides, VOCs, and total halides.

-
- o Due diligence investigation, 1995 – Grab groundwater samples were collected from soil borings (TB series). Information on the collection methods for these samples is not readily available. It is presumed that only samples for dissolved metals were filtered. The samples were analyzed for metals, TPH, SVOCs, PAHs, PCBs, and VOCs.
 - o McCormick & Baxter Well MW-35s, 1999 – As part of the investigation of the McCormick & Baxter site, well MW-35s was installed between the railroad embankment and the cove. Information on the collection methods for samples from that well is not readily available. It is presumed that samples were collected in accordance with acceptable standards of practice. Samples from MW-35s were analyzed for TPH, SVOCs, pesticides, and VOCs.
 - Remedial Investigation sampling – 2001 to 2005:
 - o Phase I RI sampling, 2001 (Hart Crowser, 2003) – Grab groundwater samples were collected from soil borings (B-1 through B-30). Groundwater samples were collected from a screened interval of temporary wells installed in the borings. Samples for VOC analysis were collected with a hand-operated check-ball valve pump. Samples for other analyses were collected with a peristaltic pump. Samples for dissolved metals were field-filtered with a 0.45-micrometer (μm) filter. The samples were analyzed for metals, SVOCs, PAHs, PCBs, VOCs, and phenols.
 - o Phase II RI sampling, 2002 and 2005 (Hart Crowser, 2003; BBL/Ash Creek/NF, 2005 and 2006) – Seven groundwater monitoring wells (MW-1 through MW-7) were installed in the unconfined water table aquifer (Figure 3) and the wells were sampled twice in 2002. The well locations and analytes were selected based on the results of the prior grab groundwater sampling and the historical review. Groundwater samples were collected with a submersible pump. Samples for dissolved metals were field-filtered with a 0.45- μm filter. In the December 20, 2003 DEQ letter commenting on the RI Report, the DEQ requested additional groundwater monitoring be conducted. In 2005, the Port and Metro conducted two additional groundwater monitoring events (one during the rainy season and one during the dry season). Groundwater samples were collected from the seven on-site wells. Samples were analyzed for metals, TPH, PAHs, and VOCs.
 - Wharf Road sampling – 2010: In 2010, grab groundwater samples of the unconfined water table aquifer were collected from direct push borings (WC-4 through WC-8). The borings were conducted just upland of the top of bank near the former wharf road on the Central Parcel to assess groundwater near the river (Ash Creek/NF, 2010). The samples were analyzed for metals, TPH, PAHs, PCBs, and VOCs.
 - Inner Cove sampling – 2010: In 2010, grab water samples were collected from test pits (TRENCH 2 and TRENCH 4). The test pits were established on the beach in the inner cove of the East Parcel in the area where NAPL was observed in 2004 when pilings were removed to construct the McCormick & Baxter cap (Ash Creek/NF, 2010). Because the test pits were established near the

river level, they likely included surface water. Subsequent removal of petroleum-impacted soil showed that the observed NAPL was confined to the beach area and the impacts were not connected to upland sources. TRENCH 2 and TRENCH 4 grab samples were analyzed for metals, TPH, PAHs, PCBs, pesticides, and VOCs.

- Additional Source Control sampling of the unconfined water table aquifer – 2016 to 2021:
 - o 2016 – To support source control decision making, DEQ requested additional groundwater monitoring for the Facility. Monitoring wells MW-1 through MW-7 were reconditioned and two additional monitoring wells, MW-8 and MW-9, were installed in 2016 in the unconfined water table aquifer. Four rounds of groundwater monitoring were conducted in 2016. Results are presented in the December 2016 Groundwater Data Report (Apex, 2017a). Groundwater samples were collected with a submersible pump. Samples for dissolved metals were field-filtered with a 0.45- μ m filter. The groundwater samples were analyzed for metals, TPH, SVOCs, PAHs, PCBs, pesticides, dioxins/furans, VOCs, natural attenuation parameters, and total organic carbon.
 - o 2016/2017 – The results of the 2016 groundwater monitoring showed detectable concentrations of PCBs. These detections of PCBs, along with new information regarding possible origins of the fill material in the former log pond, prompted DEQ to request additional investigation of soil and groundwater on the West Parcel. From December 2016 through January 2017, five borings were advanced, and groundwater was sampled on the West Parcel. Groundwater samples were collected from a screened interval temporarily installed in the borings at several depths within the unconfined water table aquifer. Samples for dissolved metals, dissolved PCBs, and dissolved dioxins/furans were field-filtered with a 0.45- μ m filter. Results are presented in the December 2016 Groundwater Data Report (Apex, 2017a). The “DP” series grab samples were analyzed for metals, SVOCs, PAHs, PCBs, pesticides, and dioxins/furans.
 - o 2019 through 2021 – From November 2019 through February 2021, four rounds of groundwater samples were collected from MW-1 through MW-9. Results are presented in the May 2021 monitoring report (Apex, 2021). Groundwater samples were collected using a peristaltic or bladder pump and low-flow sampling techniques. Samples for dissolved metals were field-filtered with a 0.45- μ m filter. The groundwater samples from MW-1 through MW-3 were analyzed for metals, pentachlorophenol, PAHs, pesticides, PCBs, TPH, and dioxins/furans. The samples from MW-4 and MW-6 through MW-8 were analyzed for metals. The samples from MW-5 and MW-9 were analyzed for metals and dioxins/furans.

5.2 Sediment Investigations

The LWG RI process included sediment sampling in the cove and other areas adjacent to the Facility (LWG, 2011; AECOM/Geosyntec, 2019). Appendix B presents sediment sample locations within 100 feet of -2 feet Columbia River Datum (CRD) and tables listing the sediment results.

More recently, the Willamette Cove In-Water Remedial Design Group conducted pre-design sediment sampling to support design of the in-water remedial action (GSI Water Solutions, 2021 and 2023). Appendix C presents the results of the pre-design sediment sampling.

5.3 Porewater Investigations

In support of the in-water remedial action design, the Willamette Cove In-Water Remedial Design Group conducted sediment pore water sampling (GSI Water Solutions, 2021 and 2023). Appendix D presents the results of the pre-design porewater sampling.

5.4 Sheen/NAPL Observations

Observations of oil sheen or NAPL during site investigations are summarized on Figure 4 and described in the following sections.

5.4.1 Upland Sheen/NAPL Observations

NAPL has not been observed in the upland areas of the Facility. The following summarizes assessments for petroleum source areas and observations of sheen on soil or groundwater samples collected during site investigations.

- Sheen Observed in Upland Soil – Since 2001, soil sampling included observation for petroleum sheen when placed in water. Sheen associated with soil was observed in samples collected from the following explorations: B-6, B-9, B-11, B-12, B-27, TP-18, TP-23, TP-27, and TP-28 (these samples were collected in 2001).
- Geophysical Survey – In 1988/1989, prior to sale of the property to PDC, a due diligence investigation was conducted at the Facility. Geophysical traverses were performed over a portion of the upland area to assess for buried objects such as underground storage tanks (USTs). Buried drainage pipes and sumps were found, but no USTs were located (Hart Crowser, 2003).
- 1999 UST Removal – In July 1999, a 12,000-gallon UST was removed from the West Parcel (Hart Crowser, 2003). Figure 4 shows the approximate location of this former UST. During brush clearing activities, several gallons of black tarry oil were observed on the ground surface. The oil and 137 tons of soil were removed, and a UST was discovered at a depth of 7 feet. The UST was filled with water and residual product (fuel oil). The UST was pumped out, inerted, and removed. No corrosion

pits or holes were observed in the UST. The maximum depth of excavation was about 18 feet. Groundwater was not encountered in the excavation.

- Sheen Observed in Upland Groundwater (Grab Samples) – During site investigations, collected groundwater samples were observed for oil sheens. Oil sheens were observed on grab groundwater samples collected from the following explorations: SE/E-9, SE/E-10, SE/E-12, SE/E-13, and SE/E-19.
- Sheen Observed in Upland Groundwater (Monitoring Well Samples) – During two groundwater sampling events in 2002, slight sheens were observed on water from monitoring wells MW-1 (February and May) and MW-3 (May only) on the West Parcel, and from monitoring well MW-4 (May only) at the west end of the Central Parcel. In six subsequent sampling events in 2005 and 2016 through 2021, sheens were not observed on water from the monitoring wells.

5.4.2 Shoreline Sheen/NAPL Observations

The following summarizes observations of sheen or NAPL in the shoreline areas of the Facility. Except for the McCormick & Baxter NAPL seep that is connected to the McCormick & Baxter site, the shoreline sheen/NAPL observations are not connected to an upland source. These areas will be addressed by in-water remedial action.

- McCormick & Baxter NAPL Seep (nearshore) – A petroleum NAPL seep was observed between 1983 and 1991 in the cove adjacent to the southern portion of the East Parcel (Hart Crowser, 2003). Figure 4 shows the location of the former seep. The seep originated from historical releases at the McCormick & Baxter site southeast of the BNSF railroad embankment. The area where the seep was observed was capped as part of the McCormick & Baxter cleanup and the seep is no longer present.
- Inner Cove Sheen/NAPL – In 2004, during construction of the McCormick & Baxter cap in the cove, a sheen was observed on the water in the innermost portion of the cove adjacent to the East Parcel. Test pits were completed and petroleum NAPL was observed in one test pit. The extent of NAPL was confined to the zone between the MHW and the OLWL. The soil where the NAPL was observed was removed and disposed of off-site (Ash Creek, 2005). Subsequent work showed that the impacts associated with these samples were not connected to upland sources (see Section 5.1).
- Wharf Road Sheen – In 2007, DEQ observed on the beach in the former Wharf Road area of the Central Parcel gray silty surface sediment that had an apparent sheen when disturbed or dropped into water. This material was investigated, and it was concluded that it did not originate from the upland area of the Facility.

6.0 Hydrogeologic Conceptual Site Model

This section presents the Conceptual Site Model (CSM) for characterizing groundwater discharge from the Facility to the river. This CSM was developed from the background information described above (and in referenced documents).

6.1 Regional Geology and Hydrogeology

The Site is located in the southwestern portion of the Portland Basin, which consists of an elongated structural trough bounded by the Tualatin Mountains to the west, the Lewis River to the north, the foothills of the Cascade Range to the east, and the Clackamas River to the south (McFarland and Morgan, 1996 [USGS 2470-A]). In the Portland area, the Columbia River Basalt forms the basement unit of the basin. Sediments filling the basin consist of the Troutdale Formation overlain by quaternary alluvial and catastrophic flood deposits. In localized areas, surface soils include fill placed by human activity.

The most accessible and widely used water-bearing units in the Portland Basin are the basin-fill sediments and are discerned in eight distinct units including: the unconsolidated sedimentary aquifer; the Troutdale gravel aquifer; confining unit 1; the Troutdale sandstone aquifer, confining unit 2; the sand and gravel aquifer; older rocks; and the undifferentiated fine-grained sediments (McFarland and Morgan, 1996). Recharge to aquifers in the Portland Basin is primarily from infiltration of precipitation. The average annual recharge in the upland area east of the Site is approximately 10 inches (McFarland and Morgan, 1996). The river/stream stage is lower than hydraulic head in the uppermost water-bearing unit in most streams in the Portland Basin, so groundwater discharges to the rivers/streams. Groundwater generally moves from upland areas downgradient to local, intermediate, or regional discharge areas such as streams and springs (McFarland and Morgan, 1996).

The banks of the Willamette River within Portland Harbor are characterized by fill material, fine-grained flood deposits, and recent alluvium (collectively referred to as FFA) and encompasses a broad range of soil textures and hydraulic properties. The FFA unit is the primary unit of importance in characterizing the interactions between upland groundwater and the river because it forms most of the river channel as well as the adjacent uplands, and most of the upland impacted soil and groundwater occurs within this unit (EPA, 2016). The permeability of the FFA is variable but is generally relatively low. Groundwater gradients within the FFA are generally steep adjacent to the river and flatten with distance from the river. Groundwater discharges to the river either above the river surface as seeps or below the river level as subsurface discharge. Figure 5 provides a generalized geologic cross section of Willamette Cove reproduced from the Willamette Cove Remedial Investigation report. This cross section shows the general relationship of the relevant geologic units at Willamette Cove.

As part of the Portland Harbor Remedial Investigation, seepage measurements were taken in nearshore areas as well as off-shore of the west side of the river near the Arkema site. The seepage measurements were

taken during the summer and early fall when groundwater discharge to the river is presumed to be relatively high due to the low river levels. The results show variability in the observed flux rates depending on the river bottom substrate. Median flux rates ranged from about four centimeters per day (cm/d) in sand to about 0.5 cm/d in sand/silt and silt zones (EPA, 2016). The majority of the measurements indicated a net discharge of groundwater to the river.

6.2 Site Geology

The geology beneath the Facility consists of fill and alluvial deposits overlying Troutdale Formation. Early maps of the area indicate the current upland portion of the facility consisted of a strip of lowland adjacent to the current UPRR railroad tracks. Based on historical maps and photographs, fill was placed on this lowland and outward into the Willamette River prior to and concurrent with development. The thickness of the fill across the Facility is generally in the range of 20 to 30 feet; however, in places, it could be up to 60 feet (such as in a former log pond on the West Parcel filled in the early 1970s).

Figure 6 shows the locations of geologic cross sections, and Figures 7 through 11 show geologic cross sections for the Facility. Section A-A' (Figure 7) runs the full length of the Facility, generally along the top of the bank. The remaining sections are roughly perpendicular to the riverbank. Sections B-B' and C-C' (Figures 8 and 9) are on the West Parcel, Section D-D' (Figure 10) is on the Central Parcel, and Section E-E' (Figure 11) is on the East Parcel. The cross sections were developed from historical borings/test pits, monitoring wells, and the geotechnical borings conducted by the in-water design team. Copies of boring logs are included in Appendix E. The cross sections show groundwater levels estimated from water levels measured in the Facility wells. Where possible, the contact between fill and natural alluvium is shown, but the fill is generally distinguishable from natural deposits based only on historical topographic maps and the presence of anthropogenic debris in the fill (encountered at scattered locations throughout the Facility and generally consisting of brick, metal, and wood, with lesser amounts of glass, asphalt concrete, and Portland cement concrete).

The West Parcel is characterized by Sections A-A', B-B', and C-C' (Figures 7, 8, and 9). The West Parcel consists of a mixture of roughly equal amounts of silty sand, sandy silt, and silt with some clean sand. The clean sand is located closer to the river but constitutes less than 10 percent of the volume of soil within the upper 40 feet of the soil profile. Within the saturated zone, soils consist of silt, sandy silt, and silty sand (nearer the river in the vicinity of MW-2). Sand was present in the bottom few feet of MW-3. Off-shore, geotechnical borings encountered Columbia River Basalt in the elevation range of -20 to -40 feet.

The Central and East Parcels are characterized by Sections A-A', D-D', and E-E' (Figures 7, 10, and 11). The Central and East Parcels consist mostly of sand or silty sand. A silt layer was encountered at the bottom of MW-8 and MW-9. In addition, silty sand and sandy silt were encountered at shallower depths farther from the river (these siltier soils may represent native alluvium versus fill material). Within the saturated zone, the soils

consist primarily of sand. Off-shore, geotechnical borings encountered Columbia River Basalt in the elevation range of -20 to -170 feet (from west to east).

The observed soil types are consistent with the known fill history where much of the Central and East Parcels were filled in a few large events, but the West Parcel was filled in multiple small events from a variety of sources (Apex, 2019).

The observed clean sands within the saturated zone on the Central and East Parcels imply that groundwater flow would be relatively uniform in these areas. The more heterogeneous nature of the fill on the West Parcel implies more complicated groundwater flow.

6.3 Site Hydrology and Hydrogeology

6.3.1 Surface Water Levels

The Willamette River in Portland flows at an average rate ranging from 11,100 cubic feet per second (cfs) in summer to 34,000 cfs in winter (United States Army Corps of Engineers [USACE], 2014). The elevation of the 100-year and 500-year floodplain along this reach is 31.2 feet and 35.2 feet, respectively (Federal Emergency Management Agency [FEMA], 2010). The MHW is a tidal datum and is the arithmetic mean of the lower of the two daily high tide heights. The MHW elevation at the Facility is 13.3 feet based on the NAVD88 and is the delineation between upland and in-water work. Ordinary high water (OHW) is the boundary of the active channel and is based largely on identification of a break in slope and change in sediment and vegetation characteristics (USACE, 2014). The OHW at the Facility is 20.1 feet (NAVD88). Ordinary low water (OLW) is the line to which low water ordinarily recedes annually in season (Oregon Revised Statute 274.005) and is at an elevation of 6.9 feet (NAVD88) at the Facility. These demarcations are shown on Figure 12.

River levels fluctuate due to daily tides, seasonal changes, and weather events. Tides generally affect the Willamette River levels when river stages (Columbia River Datum [CRD]) are less than 12 feet and tides are pronounced when the river stage falls below 6 feet (DEQ, 2003). River water elevation is typically less than 10 feet and is subject to a mean tidal range of approximately plus or minus 2 feet (Apex, 2019). Continuous water level monitoring of the river level was conducted by the in-water design team (Appendix F) for the period from November 2020 to March 2023. During that period, the mean river level was 9.51 feet with extremes of 21.40 feet in June 2022 and 4.83 feet in October 2021.

In general, groundwater is expected to discharge to the Willamette River (see discussion below). No seeps have been observed on the riverbank, indicating that groundwater discharge is generally at or below the river surface. In unusual short-term circumstances (e.g., at extreme low tides during seasonally falling river conditions), groundwater may discharge on the riverbank/beach slightly above the river level.

6.3.2 Geometry of Riverbank and Willamette River Streambed

The approximate profiles of the riverbank to the bottom of the river in the West (Profile 1-1'), Central (Profile 2-2') and East Parcel/Inner Cove area (Profile 3-3') are presented on Figure 12. The slope from the top of bank to the river in the Central Parcel is steeper (ranging from 20% to 60% slope) than the slope from the top of bank to the river in the East Parcel (averages approximately 15 percent). As with the riverbank, the slope of the riverbed is steeper adjacent to the Central Parcel (and West Parcel) and slopes at approximately 10 percent for approximately 300 feet towards the center of the river where the riverbed levels off at approximately -40 feet (David Evans and Associates, 2018). The riverbed adjacent to the East Parcel slopes at approximately 15 percent for 200 feet, then flattens slightly at an elevation of -28 for approximately 200 feet, then drops off to approximately -40 feet at the center of the river on a slope of approximately 10 percent.

Explorations conducted by the in-water team encountered basalt at relatively shallow intervals near the West Parcel (see geotechnical boring logs data in Appendix E). The presence of relatively shallow basalt suggests that faulting may have brought the basalt nearer the surface in that area. Bathymetry data collected during the Portland Harbor RI shows a linear feature approximately 200 feet offshore of the West Parcel that is apparently resistant to erosion, consistent with basalt thrust upward in that area (see Figure 13).

Grainsize characteristics of the sediment on the riverbed can impact the amount and location of groundwater discharge to the river. Sediment grainsize is primarily controlled by river current conditions; areas with higher currents tend to have coarser grained sediments while more protected areas with lower currents tend to have finer grained sediments. The geometry of the river near the Facility (see Figure 2) suggests that the west end of the Central Parcel and the West Parcel are exposed to direct river currents, whereas the remainder of the Central Parcel and the East Parcel are more protected. This is supported by Figure 13 showing long-term erosion adjacent to the west end of the Central Parcel and the West Parcel, but deposition occurring within the cove. Data collected during the Portland Harbor RI (see Figure 14) show that riverbed sediments are primarily sand (less than 20 percent fines) adjacent to the west end of the Central Parcel and the West Parcel, and riverbed sediments are primarily silt adjacent to the rest of the Facility (greater than 50 percent fines).

In general, the characteristics of the river geometry and riverbed suggest that groundwater discharge to the river will be relatively greater in areas near the west end of the Central Parcel and the West Parcel.

6.3.3 Well Construction and Groundwater Level Measurements

Nine groundwater monitoring wells are present at the site: MW-1 through MW-7 were installed in 2002, and MW-8 and MW-9 were installed in 2016. Table 1 lists the monitoring well construction details, and the well construction logs are included in Appendix E. The wells were installed in the shallow groundwater with the screened interval targeted to span the groundwater surface. (Except for MW-1, the measured water levels were within the screened interval for the majority of the measurement events). Between 2002 and 2021, groundwater levels were measured 12 times in MW-1 through MW-3, 10 times in MW-4 through MW-7, and

six times in MW-8 and MW-9 (Apex, 2021). In addition, beginning in November 2020 as part of the in-water investigation, continuous water level monitoring using pressure transducers has been conducted in four monitoring wells (MW-1, MW-3, MW-5, and MW-9) and the river at the Facility (GSI, 2021 and 2023). Table 2 lists the groundwater elevation data from monitoring wells. Appendix F presents the continuous water level monitoring data.

Depth to groundwater at the Facility has ranged from 21 to 37 feet bgs. Groundwater elevations have ranged from 7.1 to 21.7 feet (NAVD88). Figure 12 shows the range in groundwater levels relative to the range in river levels.

6.3.4 Groundwater Gradients

Given the long, narrow shape of the Facility, groundwater monitoring wells were installed generally along the top of bank, as close as practicable to the river. These well locations preclude direct calculation of horizontal groundwater gradients in the upland. The continuous water level monitoring data included monitoring of the river level, allowing calculation of the horizontal gradient between the top of bank and the river. Additionally, wells are installed only within the first encountered groundwater, preventing direct measurement of vertical groundwater gradients. However, multiple lines of evidence were used to estimate horizontal and vertical groundwater gradients.

Horizontal Groundwater Gradient. Horizontal groundwater gradients were estimated by comparing groundwater levels in the various monitoring wells to each other and to river levels. The initial hypothesis for the conceptual model for groundwater flow at the Facility is that the horizontal gradient is uniformly downward toward the river. Under this model and assuming homogeneous soil conditions, water levels in groundwater monitoring wells would be a function of distance from the river¹ and the average river level.²

For each monitoring event in 2016, water elevations measured in the river and monitoring wells were plotted versus distance from the river edge (see Figures G-1 through G-4 in Appendix G). These plots demonstrate that, excluding MW-2, water levels follow a regular function versus distance from the river. This supports that outside of the area around MW-2, conditions are relatively homogeneous, and the groundwater gradient generally follows a uniform flow pattern.

To estimate the overall general groundwater gradients (outside the vicinity of MW-2), the data were plotted excluding MW-2 (see Appendix G Figures G-5 through G-8). From these plots, the estimated groundwater gradient perpendicular to and downward toward the river ranged from 0.006 to 0.02 in 2016.

¹ Note that water levels will be a function of distance from the river under any uniform flow regime, even if not directed toward the river. Gradient direction was further evaluated by comparing water levels in adjacent wells.

² The average river level for the week prior to the date of the groundwater measurements was used as the representative river level. This time period is sufficiently long to smooth irrelevant short-term variations associated with daily tidal cycle, but short enough to capture important seasonal changes in river levels.

Instantaneous gradients between monitoring wells and the river can be estimated from the continuous water level monitoring conducted by the in-water design team (data are presented in Appendix F). Table 3 presents gradient estimates from the continuous water level monitoring data using the mean distance from each monitoring well to the river. These results show that average gradients between the monitoring wells and the river range from 0.01 to 0.1. These results are consistent with the gradient range estimated in Appendix G and discussed above. The Appendix G gradient estimates are more reflective of gradient conditions away from the river, whereas the instantaneous gradients reflect conditions between the wells and the river where gradients are expected to be slightly greater. Table 3 also shows the range in short-term gradients. During low river levels, gradients steepen toward the river (maximum measured gradients ranging from 0.04 in MW-9 to 0.25 in MW-2). During higher river levels, gradients sometimes reverse (negative gradients in Table 3), with gradients away from the river ranging from -0.01 (MW-3) to -0.1 (MW-5). During the water level monitoring period (ranging from 1.6 to 2.6 years depending on the monitoring well), the proportion of the time that gradients were negative (away from the river) ranged from 0.1 percent (MW-3) to 24 percent of the total period.

Water levels in MW-2 ranged from 3 to 10 feet higher than adjacent wells. The specific cause of the higher water levels in MW-2 is unknown. Fundamentally, higher water levels will occur where local inflow exceeds local outflow. This may occur from either a larger inflow, smaller outflow, or both. Either of these factors could be impacted by local geology (e.g., shallow coarse-grained soil near the surface in the vicinity of MW-2 could act as a conduit for greater infiltration, or fine-grained soil downgradient of MW-2 could impede groundwater flow away from the vicinity of the well). However, observing the soil conditions at MW-2 relative to nearby wells (see Figures 7 and 8), neither of these conditions are observed. Alternatively, a source unique to the MW-2 area (e.g., leaking pipe) could increase the inflow locally. But again, these conditions are not observed. The Facility is undeveloped, and the only active pipe at the Facility is the City of Portland outfall. As shown on Figure 2, that pipeline is located over 300 feet east of MW-2, on the opposite side of MW-3.

Based on the above analysis, Figures 15 and 16 show conceptual groundwater contour maps depicting groundwater levels relative to the average river level for low water (summer/fall) and high water (winter/spring) conditions. These figures were generated by starting at the average river level and drawing contours that parallel the river edge and rise at the corresponding low water (summer/fall) gradient of 0.02 or high water (winter/spring) gradient of 0.006. The contours were adjusted locally based on typical gradients between adjacent wells (e.g., 0.001 to 0.005 from MW-9 to MW-7). Overlain on this general gradient is a mound in the vicinity of MW-2. Again, these local contours were generated by comparing water levels in MW-2 to adjacent MW-1 and MW-3. The overall gradient at the Facility is characterized as follows: the general gradient is perpendicular to the river, downward toward the river at a magnitude in the range of 0.006 to 0.02 (winter/spring to summer/fall). The mound in the vicinity of MW-2 has the effect of deflecting the overall gradient around the vicinity of MW-2. Groundwater in the immediate vicinity of MW-2 has a steeper gradient toward the river (ranging from 0.07 to 0.13). These results are consistent with the Facility geology showing relatively homogeneous sand deposits in the Central and East Parcels (resulting in relatively regular

groundwater contours) and a mixture of deposits in the West Parcel (resulting in some irregular groundwater contours around MW-2).

Vertical Groundwater Gradient. As stated above, there are no data on site-specific vertical groundwater gradients, but the general direction of vertical gradients may be inferred from published regional groundwater studies. Explorations on the Facility have been conducted to depths of up to 40 feet. An aquitard has not been identified on the Facility within that depth. Given the uncertainty of whether an aquitard is present beneath the Facility, two scenarios are considered for assessing potential vertical gradients: 1) an aquitard is not present beneath the Facility; and 2) an aquitard is present beneath the Facility.

Under the first scenario where an aquitard is not present, the water table aquifer is connected to the regional aquifer, and it would be subject to the gradients of the regional aquifer. Regionally, groundwater gradients along the margins of the Willamette River are upward (McFarland and Morgan, 1996; pg. 20). Therefore, dissolved contamination would not migrate downward.

Under the second scenario where an aquitard is present, the water table aquifer would be perched on the aquitard. Although the vertical gradient is unknown in this case, the perched aquifer (containing the dissolved COCs) is by definition vertically isolated from regional aquifers by the underlying aquitard (McFarland and Morgan, 1996; pg. 18). In that event, regardless of the vertical gradient direction, transport of groundwater contaminants from the water table aquifer to an underlying aquifer would be inhibited by the aquitard.

In either scenario, the primary flow would be lateral, characterized by the horizontal gradient. This conclusion is supported by vertical chemical sampling from DP-5. Detected concentrations of COCs in the lower sample (separated from the upper sample by 15 feet) were 26 to 99 percent less than in the upper sample (Apex, 2017a).

6.3.5 Groundwater Velocities and River Level Effects

Groundwater velocity may be estimated from Darcy's Law:

$$v = k \cdot i / n$$

Where:

v = velocity

k = hydraulic conductivity

i = hydraulic gradient

n = soil porosity

Table 3 presents the range of estimated groundwater velocities for the period of continuous groundwater monitoring. Hydraulic conductivities were estimated from correlation to soil types discussed in Section 6.2.

Ranges of hydraulic conductivity are presented in Table 3; the mid-range value was used in the calculations. Hydraulic gradients are discussed in Section 6.3.4. Soil porosity was estimated from general soil type (cohesionless silt and sand) to be 0.4. Table 3 shows that mean estimated groundwater velocities are toward the river and range from 0.002 feet per day (ft/day; MW-1) to 3.1 ft/day (MW-5). Except for MW-1, water particle travel times from monitoring wells to the river range from two weeks (MW-5) to seven months (MW-3). The travel time from MW-1 to the river was estimated at 100 years. However, given the range in water levels in MW-1, that estimate is likely high.

The estimated groundwater velocities above represent long-term average values. Short-term changes in river levels (e.g., tidal cycles, flood events, and seasonal changes) can greatly impact instantaneous velocities, potentially reversing groundwater flow near the river. Table 3 shows that there are wide variations in gradients (reversing for up to 24 percent of the period of monitoring) and velocities. To assess these short-term impacts, we calculated the horizontal distance traveled by a theoretical water particle beginning at each monitoring well at the start of the monitoring period. Figure 17 shows the plot for each well that was monitored. These plots show that meaningful groundwater reversals occurred only in MW-4 and MW-5 during the period from May to July 2022. During that time, groundwater traveled away from the river an estimated 50 to 125 feet at these locations. In June 2022, the river was above elevation 15 feet (peaking at 21.4 feet). This was the only time during the 2.6-year monitoring period that the river sustained levels above elevation 15 feet. Wells MW-4 and MW-5 are likely representative of the conditions in the Central Parcel.

6.3.6 Groundwater Seepage Measurements

The in-water design team conducted indirect and direct measurement of groundwater seepage to the river using a Trident Probe (direct push integrated sampler) to screen surface water and transition zone water (TZW) for specific conductivity and temperature (Coastal Monitoring Associates, 2022) and seepage meters to measure specific discharge (Coastal Monitoring Associates, 2023).

Specific Conductivity. In general, groundwater tends to have a higher specific conductivity than fresh water due to interaction of the groundwater with minerals in soil. However, the presence of contamination in sediment can increase the specific conductivity of TZW relative to natural conditions. Therefore, greater differences between the specific conductivity of surface water and TZW is a potential indicator of greater groundwater discharge, but results can be influenced by the presence of contamination. Data were collected at 34 stations between August 13 and 16, 2022 (same period as temperature sampling).

Temperature. In general, because surface water is more directly exposed to seasonal temperature changes, groundwater has a lesser range in seasonal temperatures than does surface water. Therefore, groundwater temperatures tend to be cooler than surface water in the summer and warmer than surface water in the winter. This effect is not impacted by the presence of contamination, so as long as measurements are made during times of year when temperature differences are greatest, temperature difference is a good indicator of

groundwater discharge. Data were collected at 34 stations between August 13 and 16, 2022 (same period as specific conductivity sampling).

Specific Discharge. Seepage rates were directly measured using the UltraSeep system as described in the UltraSeep report (Coastal Monitoring Associates, 2023). The technology measures the seepage velocity (speed and direction). The meters were deployed at 13 stations for a period of approximately 48 hours to obtain a minimum of 24 hours of continuous data. Data were collected between August 18 and 26, 2022.

Seepage Measurement Results. Appendix H contains excerpts from the Trident and UltraSeep reports presenting the locations of the Trident Probes (specific conductivity and temperature), locations of the seepage measurements, and data tables summarizing results.

Figure 18 shows a plot of specific conductivity contrast (specific conductivity of TZW minus specific conductivity of surface water) versus the measured specific discharge for the co-located sample locations. The best-fit line and correlation coefficients are shown on the figure. This figure shows that specific conductivity is poorly correlated with the specific discharge, suggesting that the presence of contamination may be impacting specific conductivity in the TZW. For this site, specific conductivity does not appear to be a good predictor of groundwater discharge.

Figure 19 shows a plot of temperature contrast (temperature of TZW minus temperature of surface water) versus the measured specific discharge for the co-located sample locations. The best-fit line and correlation coefficients are shown on the figure. This figure shows that temperature is a good predictor of groundwater discharge, especially at locations of higher groundwater discharge.

Figure 20 summarizes the average specific discharge measurements at the site. Solid symbols represent direct seepage data collected from the UltraSeep sampling. Open symbols represent estimated discharge using the temperature data and the correlation from Figure 19. In general, the specific discharge data are relatively uniform: 21 of 22 locations adjacent to the Facility had specific discharge values in the range of 0.23 to 1.98 cm/day with a mean value of 0.9 cm/day. Location B-10 off the Central Parcel has a specific discharge value of 20.8 cm/day. Darcy's law may be used to estimate the hydraulic conductivity from the specific discharge:

$$k = (Q/A)/i$$

Where:

k = hydraulic conductivity

(Q/A) = specific discharge

i = hydraulic gradient

Using the mean gradients from Table 3, the estimated hydraulic conductivities for the West, Central, and East Parcels are 0.5, 1.6, and 2.1, respectively. These are within the ranges estimated from soil type in Table 3.

Sample locations within the cove have lower specific discharges (range from 0.03 to 0.09 cm/day). That is consistent with the finer-grained sediment in that area.

6.4 Groundwater Discharge Model

Based on the hydrogeological model developed above, Figures 21 and 22 show the predicted flow paths for groundwater discharging from Willamette Cove in plan and cross section. The plan view shows that groundwater typically discharges to the nearest point in the river except near MW-2 where the discharge of groundwater upgradient of that location is deflected slightly up- or downriver. Figure 22 presents a flow net that graphically depicts groundwater flow based on fundamental principles of fluid flow through a porous medium. The fundamental principles (Freeze and Cherry, 1979, pp. 168-171) and assumptions used to develop the flow net include the following.

- The flow net depicts flow lines (parallel to groundwater flow) and equal-energy lines (perpendicular to groundwater flow). The volume of flow between each set of flow lines is equal; the total energy (in the form of elevation, velocity, and pressure combined) of the groundwater is the same anywhere on the same equal-energy line.
- Boundary conditions include upgradient of influence from surface water, the groundwater surface, and the river bottom. The lower boundary is either a low-permeability layer that restricts vertical flow (an aquitard) or the depth at which groundwater is not impacted by COCs. Boundary conditions were determined as follows:
 - The upper boundary is the groundwater surface as depicted on Figures 15 and 16. At a natural scale, this boundary is nearly horizontal and the flow net development is insensitive to typical changes in this boundary (i.e., typical water level changes).
 - The lower boundary is not defined by a known aquitard. Neither site-specific boring data (Appendix E) nor regional data (see Figure 5) identify a site-wide aquitard within the upper several hundred feet. Therefore, the lower boundary was estimated based on the depth of impact from COCs at the site. As discussed in Section 6.3.4, concentrations of COCs in groundwater decreased significantly in the lower groundwater sample collected from DP-5. That sample was collected at a depth of 60 feet, or approximately 20 feet below the groundwater surface. This suggests that COC impacts are within the upper 50 feet of groundwater, but to assure that the lower boundary captures groundwater potentially impacted by site COCs, the lower boundary was set at a depth of 100 feet below the groundwater surface.
 - The flow net development is relatively insensitive to the upgradient boundary provided that the evaluation focuses on the long-term net discharge to the river. Provided the upgradient

boundary is placed a distance from the river equal to at least the depth of the lower boundary, the upgradient boundary condition will not substantively impact flow net development.

- o The downgradient boundary is defined by the river bottom. The middle section from Figure 12 was used.
- Based on fundamental fluid dynamics principles, for homogeneous and isotropic soil: flow lines must be perpendicular to the discharge boundary to surface water (i.e., the river bottom); flow lines and equal-energy lines must be perpendicular where they meet; and equal-energy lines must be perpendicular to the groundwater surface. Using equal horizontal and vertical scales, this means that the distance between flow lines and equal-energy lines will be the same for any cell.

Using the basic principles and assumptions outlined above, the flow net shown on Figure 22 was developed. Figure 22 shows that groundwater within the upper 100 feet discharges within 140 feet of the river edge. The groundwater zone known to be impacted with COCs (estimated to be the upper 50 feet of groundwater), discharges within 25 feet of the river edge. However, the modeled flow net on Figure 22 assumed homogeneous and isotropic conditions. Real soils exhibit anisotropy related to factors such as layering, density, and particle shape. Site soils consist of either alluvial silt and sand or silt/sand deposited as fill. In either of these cases, layering is the dominant factor influencing anisotropy: variations in silt content in successive layers (whether laid down by river action or during placement of successive layers of fill) results in differing hydraulic conductivities of those layers. The anisotropy of the layered soil system can be approximated by the square root of the ratio of the hydraulic conductivities (Freeze and Cherry, 1979, pp 174-175) of the higher to the lower conductive layers (approximating the horizontal and vertical conductivities of the soil system). Within the saturated zone, the primary soils at the site range from silty sand to silt. Typical hydraulic conductivities for these soils are 0.0007 cm/sec and 0.00002 cm/sec,³ respectively, providing an estimate of the anisotropy of the site soil system on the order of 6. The effect of the anisotropy on the flow net is to expand the horizontal dimension by the degree of anisotropy. Therefore, the primary discharge of groundwater with COCs would be within 150 feet of the shoreline, and the discharge of the upper 100 feet of groundwater would be within less than 400 feet of the shoreline.⁴ This evaluation indicates that groundwater with COCs at concentrations with the potential to impact surface water will discharge to the river within approximately 150 feet of the shoreline (with uncertainty in the range of -100 to +250 feet). Figure 21 shows the estimated location of this discharge zone of groundwater to the river.

³ Freeze and Cherry, 1979, pg 29. Values selected from middle of range for silty sand and silt.

⁴ The flow net modeled on Figure 22 implicitly assumes an infinitely wide river. This assumption is suitable for evaluating impacts near each shoreline. The upper limit for the predicted discharge zone using this model is on the order of 800 feet, over halfway across the river. The net effect of considering flow from the opposite shoreline would be to compress the outer limits of the discharge zone by a factor of two. Additionally, because the flow through each flow channel of the flow net is equal, the flow rate per unit area decreases as the flow tubes get larger (i.e., farther from shore). This has the effect of decreasing the concentration of COCs in the surface water from the lower flow channels. Given that the concentrations of COCs are less in the lower flow channels, the outer limits of the modeled discharge zone have a small contribution to the overall COC loading from groundwater.

In the vicinity of the West Parcel, site-specific data from the in-water geotechnical borings (Appendix E) show a clayey layer 2 to 9 feet thick near elevation -10 feet, and the Columbia River Basalt near elevation -30 feet. These layers may act as an aquitard in the vicinity of the West Parcel. The -10-foot and -30-foot contours off-shore of the West Parcel are approximately 60 to 200 feet from the shoreline, suggesting that groundwater discharge in the vicinity of the West Parcel would be within that range. This is consistent with the estimate of 150 feet discussed above.

7.0 Groundwater, Porewater, and Sediment Data Screening

In this section, groundwater, porewater, and sediment data are screened to identify groundwater chemicals of potential concern (COPCs). The data are screened against cleanup levels (CULs) from Table 17 of the PHSS ROD and EPA Errata #2. For groundwater COI that do not have a CUL, JSCS SLVs were used for screening.

To assure a comprehensive evaluation of potential upland sources, both grab groundwater and monitoring well sample data collected during investigations at the Facility were considered during data screening. In addition, grab groundwater samples collected riverward of top of bank down to ordinary low water are included in the data set without regard for whether there is a connection to upland sources.

Groundwater. Appendix A presents the groundwater database including comparison to the screening levels listed above. The COI that exceeded a relevant screening level at least once were retained as COPCs. The COPCs thus identified include the following:

- Metals – aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc;
- PAHs – most individual PAHs and benzo(a)pyrene toxicity equivalent (BaP Eq);
- TPH (C10-C12 aliphatics);
- Total PCBs;
- Dioxins/Furans – 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and dioxin/furan toxicity equivalent (TEQ);
- Pesticides – Dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), dichlorodiphenyltrichloroethane (DDT), and DDx;
- SVOCs – bis(2-ethylhexyl)phthalate (BEHP), butylbenzyl phthalate, dibenzofuran, diethyl phthalate, di-n-butyl phthalate, and pentachlorophenol; and
- VOCs – Benzene, chlorobenzene, chloromethane, naphthalene, tetrachloroethylene (PCE), and trichloroethylene (TCE).

Porewater. Appendix D presents the porewater database including comparison to CULs. COI detected in porewater at least once above CULs include the following:

- Arsenic;
- PAHs – most individual PAHs and BaP Eq;
- Total PCBs;
- Dioxins/Furans⁵ – dioxin/furan TEQ;
- Pesticides – DDD, DDE, DDT, and DDx; and
- SVOCs – 2-methylnaphthalene and pentachlorophenol.

Sediment. Appendix C presents the sediment database for data collected during the in-water Pre-Design Investigation (PDI) and Supplemental PDI including comparison to CULs. COIs detected in sediment at least once above CULs include the following:

- Arsenic;
- PAHs – total PAHs and BaP Eq;
- Total PCBs;
- Dioxins/Furans – Select congeners (2,3,7,8-TCDD; 1,2,3,7,8-PeCDD; 2,3,7,8-TCDF; 2,3,4,7,8-PeCDF; 1,2,3,4,7,8-HxCDF) and dioxin/furan TEQ; and
- Pesticides – DDD, DDE, DDT, and DDx.

Summary of CUL Exceedances and Groundwater COPCs. Table 4 summarizes COIs detected above screening levels in groundwater, porewater, and sediment, showing the maximum exceedance ratio for each COI in each medium. For Table 4, the following data sets and screening levels were used.

- Groundwater – Groundwater data are for monitoring well samples only, except that phthalates and dibenzofuran are from historical grab samples. Metals data reflect only dissolved metals. Portland Harbor Table 17 CULs were used for screening. For COI without Table 17 CULs, JSCS SLVs were used for screening. There are no screening levels for total PAHs or individual dioxin/furan congeners.
- Porewater – Porewater data are from the in-water PDI and Supplemental PDI sampling events. For metals, only aluminum, arsenic, copper, lead, and zinc were analyzed in porewater samples. TPH was not analyzed in porewater samples. Portland Harbor Table 17 groundwater CULs were used for screening. For COI without Table 17 CULs, JSCS SLVs were used for screening. There are no screening levels for total PAHs or individual dioxin/furan congeners.
- Sediment – Sediment data are from the in-water PDI and Supplemental PDI sampling events as these data best represent current conditions. TPH was not analyzed in sediment samples. Portland

⁵ Relative to JSCS screening level.

Harbor Table 17 CULs were used for screening. There are no CULs for individual PAHs, pentachlorophenol, or individual DDx compounds.

From Table 4 and as summarized below, groundwater source control COPCs are arsenic, BaP Eq, TPH (C10-C12 aliphatics), total PCBs, dioxin/furan TEQ, and pesticides (DDD, DDE, DDT, and DDx).

- Metals – Maximum exceedance ratios for metals (excluding arsenic) in groundwater range from 1.1 to 120, with only three samples with an exceedance ratio greater than 4 – one each for aluminum, cadmium, and lead. In porewater, maximum exceedance ratios are less than one except for arsenic. Sediment data are more limited, but only arsenic exceeds the CUL, and by only a factor of four. Arsenic was retained as a COPC.
- PAHs – Non-carcinogenic PAHs and 2-methylnaphthalene have maximum exceedance ratios in groundwater ranging from less than one to 3.2, and none exceed the screening levels in porewater. The maximum exceedance ratio for naphthalene is 53 in groundwater but less than one in porewater. Individual carcinogenic PAHs (cPAHs) have maximum exceedance ratios in groundwater ranging up to 26,000, and the exceedance ratio for BaP Eq is 36,000. In porewater, cPAHs exceed CULs by factors of up to 74 adjacent to the West Parcel but are less than two adjacent to the Central and East Parcels. BaP Eq was retained as a COPC.
- TPH (C10-C12 aliphatics) – TPH exceeded the CUL in 33 percent of the samples with a maximum exceedance ratio of 19. There are no data in porewater or sediment, so TPH was retained as a COPC.
- SVOCs – SVOCs, including phthalates, dibenzofuran, and pentachlorophenol, had maximum groundwater exceedance ratios ranging from 1.7 to 32. For phthalates and dibenzofuran, the exceedance frequency was low (ranging from 2 to 6 percent). Additionally, there are exceedances in grab groundwater samples. Although pentachlorophenol exceeded the screening level in 27 percent of the groundwater samples, it was not detected in porewater samples collected adjacent to the uplands, and it was not detected in sediment. These SVOCs were not retained as COPCs.
- Total PCBs – Total PCBs have a maximum exceedance ratio in groundwater of 400, and PCBs exceeded the CUL in 57 percent of samples. However, exceedance ratios in porewater are 1.5 or less. Although the porewater data suggest PCBs are not a source control concern, PCBs were retained as a COPC given the relatively high exceedance ratio in groundwater.
- Dioxin/furans – Dioxin/furan TEQ has similar exceedance ratios in groundwater and porewater (5,300 and 2,000, respectively), suggesting that dioxin/furan TEQ warrants further assessment, so dioxin/furan TEQ was retained as a COPC.
- Pesticides – DDx, DDT, and DDE have similar exceedance ratios (100 to 700 in groundwater and 2 to 7 in porewater) and show significant attenuation. However, the porewater exceedances were adjacent to the West Parcel. DDD maximum exceedance ratios are greater (3,800 in groundwater and 90 in porewater). DDD, DDE, DDT, and DDx were retained as COPCs.

8.0 Source Control Evaluation

In accordance with the JSCS guidance, the following evaluation considers multiple lines of evidence to be considered independently and collectively to identify the potential for adverse effects on surface water or sediments from groundwater. These include the following.

- Factors related to COPC properties and concentrations:
 - o Contaminant concentrations (magnitude of exceedance above the CUL or SLV);
 - o Regional background concentrations of metals;
 - o Potential presence of NAPL or sheen;
 - o Presence of bioaccumulative chemicals;
 - o Consideration of available in-water data;
- Factors related to fate and transport of COPCs in groundwater:
 - o Nature and extent of groundwater COPCs in each affected water-bearing zone;
 - o Location of wells within the groundwater plume;
 - o Stability of the groundwater plume (e.g., predictive modeling);
 - o Potential hydraulic connection between site groundwater and surface water and sediments;
 - o Fate and transport of groundwater COPCs;
- Estimate of potential contaminant loading to the river; and
- Potential for groundwater discharge to result in an accumulation in sediments above protective concentrations (i.e., potential for groundwater discharge to result in sediment contamination or recontamination following sediment cleanup).

This section evaluates relevant lines of evidence to identify if source control actions are needed at Willamette Cove. Table 4 summarizes the frequency and magnitude of exceedances for COI. Figures in Appendix I present locations of groundwater samples with CUL exceedances for each of the groundwater COPCs.

8.1 Arsenic

Arsenic is a naturally occurring metal that has the potential to bioaccumulate. Background concentrations of arsenic in soil and sediment are likely in the range of 3 to 8.8 milligrams per kilogram (mg/kg) based on EPA Portland Harbor data and DEQ regional data. Groundwater in the Willamette Valley is naturally elevated for

arsenic, with natural background concentrations of dissolved arsenic in the Portland area likely in the range of 0.1 to 4 micrograms per liter (µg/L; Hinkle, 1999).⁶

Arsenic was sampled in nine monitoring wells in six to 11 events spanning the period from 2002 to 2021. Dissolved arsenic was detected in 61 of 83 samples collected from monitoring wells (see Table A-1 for arsenic data and Figure 3 for monitoring well locations). When detected, arsenic exceeds the CUL (0.018 µg/L) with a maximum exceedance ratio of 3,200. Arsenic concentrations showed some variability in the early portion of the monitoring period, but over the last several events, concentrations in each well have generally stabilized near the mean. The following summarizes arsenic detections in monitoring wells. Figure 23 shows recent arsenic concentrations in groundwater at the Facility.

Location	Monitoring Well	Dissolved Arsenic in Groundwater				
		Sample Events	Detection Frequency	Concentration in µg/L		
				Minimum	Maximum	Mean
West Parcel	MW-1	11	91%	1.1	57	32
	MW-2	9	100%	14	20	17
	MW-3	11	100%	1.1	31	16
Central Parcel	MW-4	10	30%	<0.5	2.6	0.57
	MW-5	10	50%	<1.0	0.83	0.53
	MW-6	10	40%	<0.5	2.0	0.6
	MW-8	6	83%	<1.0	3.9	2.6
East Parcel	MW-9	6	100%	1.5	3.3	2.1
	MW-7	10	80%	<1.0	14	8.3

In the Central and East Parcels, except for MW-7, detected concentrations of dissolved arsenic are consistent with background. MW-7 is located at the eastern edge of Willamette Cove, in an area likely historically impacted by McCormick & Baxter releases. Elevated arsenic at MW-7 may be related to releases of wood treatment chemicals at McCormick & Baxter (either from releases of arsenic compounds directly or through petroleum releases, creating reducing conditions that leach naturally occurring arsenic). Regardless, grab samples TRENCH-2 and TRENCH-4, collected in 2010 between MW-7 and the river, had dissolved arsenic concentrations of 2 and 1.3 µg/L, respectively, suggesting that arsenic concentrations in the vicinity of MW-7 are within the background range prior to reaching the river.

Arsenic concentrations exceeding 15 µg/L are present on the West Parcel (MW-1 through MW-3). These higher arsenic concentrations could result from soil concentrations above background (e.g., in the former log pond fill), groundwater conditions conducive to leaching natural arsenic from soil (e.g., reduced conditions associated with degradation of organic materials), or a combination of both. Organic material is suspected to

⁶ The referenced document does not provide a prediction of background concentrations. We estimated the background concentration range considering such factors as the study design, the distribution of arsenic detections overall in the basin, and detections in the Portland area.

be present in greater quantities in the West Parcel. Wood waste associated with the former log pond is likely present beneath the fill. Additionally, petroleum hydrocarbons are present at relatively higher concentrations on the West Parcel (see for example the discussion of PAHs below). Groundwater monitoring data show that reducing conditions are more prevalent on the West Parcel (Apex, 2017a).⁷

The greatest relative concentrations of arsenic were detected in MW-1. As shown on Figure 17, groundwater travel distances at MW-1 are at least 100 times smaller than travel distances at other monitoring wells. Groundwater concentrations in the other monitoring wells on the West Parcel are approximately half the concentrations detected in MW-1. This is a line of evidence that potential impacts from arsenic in groundwater are less severe than suggested by detected concentrations in MW-1.

Arsenic is not identified as a COI in sediments adjacent to the Facility but has been detected above CULs in both porewater and sediment. Figures 24 and 25 show arsenic results for surface sediment and porewater, respectively (data in Appendices C and D). Arsenic concentrations in sediment range from 2.1 to 12 mg/kg. Over 90 percent of the samples exceed 3 mg/kg, but only 5 samples (9 percent) exceed 8.8 mg/kg. There is no clear pattern to the detected concentrations; concentrations above 8.8 mg/kg are detected at scattered locations throughout the in-water site with the highest detected concentration near the navigation channel at the upstream end of the site.

Arsenic concentrations in porewater range from non-detect (less than 0.92 µg/L) to 33 µg/L. As with sediment, there is no clear pattern to the detected concentrations in porewater – concentrations above 4 µg/L are detected at scattered locations throughout the in-water site, and the highest detected concentration is near the navigation channel at the upstream end of the site. Higher relative concentrations in porewater do not spatially correlate with higher concentrations in groundwater.

Overall, these results indicate that arsenic concentrations in groundwater are above background in groundwater beneath the West Parcel. However, the spatial patterns of detected arsenic in sediment and porewater do not show higher relative concentrations of arsenic adjacent to the West Parcel, indicating that arsenic in groundwater is not adversely impacting sediments or porewater. This result is consistent with the hypothesis that reducing conditions in the West Parcel are responsible for the concentrations of arsenic in groundwater greater than background, but conditions become oxidized as groundwater migrates toward the river, returning arsenic concentrations to background.

⁷ For example, compared to other monitoring wells at Willamette Cove, wells on the West Parcel (MW-1 through MW-3) have lower oxidation reduction potential and higher relative concentrations of arsenic III (the reduced form of arsenic) compared to arsenic V (see Table A-10 in Appendix A).

8.2 Carcinogenic PAHs (BaP Eq)

PAHs are associated with petroleum hydrocarbons that do not occur naturally in the vicinity. Low levels of PAHs may be present in urban environments due to atmospheric fallout. However, for the purpose of this evaluation, it was assumed that background concentrations in groundwater are below detection limits.

PAHs were sampled in nine monitoring wells in four to 11 events spanning the period from 2002 to 2021. BaP Eq was detected in 37 of 69 samples collected from monitoring wells (see Table A-2 for PAH data and Figure 3 for monitoring well locations). When detected, BaP Eq exceeds the CUL (0.00012 µg/L) with a maximum exceedance ratio of 36,000. Over the last several events, concentrations in each well except MW-1 have been at or below the mean (the maximum concentration detected in MW-1 was during the December 2019 event). The following summarizes BaP Eq detections in monitoring wells. Figure 26 shows recent BaP Eq concentrations in groundwater at the Facility.

Location	Monitoring Well	BaP Eq in Groundwater				
		Sample Events	Detection Frequency	Concentration in µg/L		
				Minimum	Maximum	Mean
West Parcel	MW-1	11	91%	0.013	4.27	0.68
	MW-2	11	91%	0.045	0.19	0.10
	MW-3	11	82%	<0.117	1.39	0.41
Central Parcel	MW-4	8	50%	<0.007	0.33	0.14
	MW-5	8	13%	<0.007	0.22	0.048
	MW-6	8	13%	<0.007	0.22	0.048
	MW-8	4	0%	<0.007	<0.014	<0.0089
East Parcel	MW-9	4	50%	<0.0072	0.0142	0.0098
	MW-7	4	0%	<0.007	<0.014	<0.0089

In the Central and East Parcels, BaP Eq concentrations are relatively lower, with BaP Eq not detected in nearly 80 percent of the samples. MW-4 has the relatively highest concentrations on these parcels. MW-4 is located adjacent to a BaP Eq soil hot spot that was removed in 2015. Since then, BaP Eq has not been detected in MW-4. In fact, BaP Eq was not detected in at least the last four events for each of MW-4 through MW-8, and it was not detected in MW-9 in the last two events.

Higher relative concentrations of BaP Eq have been detected on the West Parcel (MW-1 through MW-3). These higher concentrations are likely associated with historical releases from the wood products industries and/or the fill used to reclaim the former log pond on the West Parcel.

The greatest relative concentrations of BaP Eq were detected in MW-1. As shown on Figure 17, groundwater travel distances at MW-1 are at least 100 times smaller than travel distances at other monitoring wells. Groundwater concentrations in the other monitoring wells on the West Parcel are two to three times less than

the concentrations detected in MW-1. This is a line of evidence that potential impacts from BaP Eq in groundwater are less than suggested by detected concentrations in MW-1.

Total PAHs, present in sediment above remedial action levels (RALs), is a COC in sediments adjacent to the Facility. Additionally, BaP Eq has been detected above CULs in porewater. Figures 27 and 28 show BaP Eq results for surface sediment and porewater, respectively (data in Appendices C and D). BaP Eq concentrations in surface sediment range from 1 to 110,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$). Thirteen of the 112 total samples exceeded the CUL; of those, five samples are near the West Parcel and an additional four samples are adjacent to the Crawford Street parcel. Adjacent to the West Parcel, exceedance factors range from 1.1 to 3 for four samples, with the fifth sample having an exceedance factor of 62. There is a spatial correlation between higher relative sediment concentrations and groundwater impacts on the West Parcel. However, cPAHs were detected in riverbank soil at nearby portions of the Crawford Street property at up to 18,000 $\mu\text{g}/\text{kg}$ (GeoEngineers, 2022) and on the West Parcel at up to 26,000 $\mu\text{g}/\text{kg}$ (GSI, 2023), concentrations greater than the concentrations detected in the Central/East Parcel riverbanks (up to 13,000 $\mu\text{g}/\text{kg}$). The impacts to both riverbank soil and sediment suggest that the historical activities at the West Parcel and Crawford Street are common sources of impacts to both. Figure 13 shows bathymetric changes for the period 2002 to 2009. Adjacent to the West Parcel, there was modest erosion over the period (generally between 0 and 2 feet). It is likely that actual conditions are dynamic with alternating deposition/erosion, so it is reasonable to conclude that historical impacts would still be present in surface sediments.

BaP Eq concentrations in porewater range from non-detect (detection limits as low as 0.00044 $\mu\text{g}/\text{L}$) to 0.037 $\mu\text{g}/\text{L}$, with the higher relative concentrations detected adjacent to the McCormick & Baxter cap. BaP Eq was detected in porewater above CULs at seven of the 30 locations sampled. Three of these samples are adjacent to the McCormick & Baxter cap. The other four locations are at the downstream end of the in-water site, two each adjacent to the West Parcel and the Crawford Street parcel. Two of nine porewater samples adjacent to the West Parcel exceed the CUL. Exceedance factors in porewater samples located adjacent to the West Parcel range from 1.3 to 7. One sample adjacent to the Crawford Street parcel just downstream from the border with the West Parcel has an exceedance factor of 74. Exceedance factors in porewater samples located downstream of the McCormick & Baxter cap range from 22 to 308.

Overall, these results indicate that BaP Eq concentrations in groundwater are greater than the CUL beneath the West Parcel and that sediment and porewater CUL exceedances are spatially correlated with the West Parcel. Except for one sediment sample (G004, collected on the beach at the downstream end of the West Parcel with an exceedance factor of 62), exceedance factors in sediment and porewater adjacent to the West Parcel are in the range of 1 to 7. One porewater sample near the Crawford Street parcel/West Parcel boundary has an exceedance factor of 74. Exceedances in groundwater, sediment, porewater, and riverbank soil are likely from a common source (e.g., historical activities on the West Parcel and/or the Crawford Street parcel), and sediment/porewater impacts may also be the result of migration of sediments impacted by McCormick & Baxter. Overall, the data are inconclusive regarding the need for source control related to BaP

Eq in groundwater. As evidenced by the relatively low exceedance factors for most sediment/porewater samples, impacts from groundwater migration on sediment and porewater, if any, are relatively modest.

8.3 TPH (C10-C12 Aliphatics)

TPH (C10-C12 aliphatics) are associated with petroleum hydrocarbons that do not occur naturally in the vicinity. For the purpose of this evaluation, it was assumed that background concentrations in groundwater are below detection limits.

Based on historical detections of diesel range TPH on the West Parcel, samples from the West Parcel monitoring wells (MW-1 through MW-3) were analyzed for TPH (C10-C12 aliphatics) for three events spanning the period from 2019 to 2021. TPH (C10-C12 aliphatics) was detected in three of nine samples, one in each monitoring well (see Table A-9 for TPH data and Figure 3 for monitoring well locations). When detected, TPH (C10-C12 aliphatics) exceeds the CUL (2.6 µg/L) with a maximum exceedance ratio of 19. In the last event in 2021, TPH (C10-C12 aliphatics) was not detected (detection limit of 21 µg/L).

Location	Monitoring Well	TPH (C10-C12 Aliphatics) in Groundwater				
		Sample Events	Detection Frequency	Concentration in µg/L		
				Minimum	Maximum	Mean
West Parcel	MW-1	3	33%	<5.9	24	12
	MW-2	3	33%	<5.9	33	16
	MW-3	3	33%	<5.9	51	18

TPH (C10-C12 aliphatics) is not a COI in sediments adjacent to the Facility and is not bioaccumulative. Sediment and porewater samples were not analyzed for TPH. Sheen/NAPL observations (see Figure 4) do not indicate an obvious source of TPH. Historical observations of sheen/NAPL along the shoreline were investigated and found not to have a connection to the Facility upland. Observations of sheen on soil and groundwater were scattered primarily on the Central and West Parcels, and these observations occurred in samples collected in 2002 or earlier.

Overall, these results indicate that TPH (C10-C12 aliphatics) is not a groundwater source control concern.

8.4 Total PCBs

PCBs were used historically in a wide range of products but have limited association with activities on the upland Facility. PCBs have been detected in soil at the west end of the West Parcel and in scattered areas elsewhere on the Facility. Additionally, PCBs may be present in fill used to reclaim the former log pond on the West Parcel. PCBs are organic compounds that do not occur naturally and are bioaccumulative. For the purpose of this evaluation, it was assumed that background concentrations in groundwater are below detection limits.

Monitoring wells MW-1, MW-2, MW-3, and MW-6 were sampled for PCB Aroclors in 2002, and PCBs were not detected at a detection limit of 0.5 µg/L per Aroclor. PCB Aroclors were analyzed in grab groundwater samples from all three parcels. PCBs were detected in 1 of 12 samples associated with the East Parcel and were not detected on the Central Parcel (detection limits were generally in the range of 0.01 to 1 µg/L per Aroclor). The one grab sample with detected PCBs (TRENCH-4) was not located on the upland but rather on the Inner Cove beach where NAPL was observed. Subsequent work showed that the impacts associated with that sample were not connected to upland sources (see Section 5.1). Total PCBs were detected in two of eight grab samples collected from the West Parcel.

Based on the detections of PCBs in grab samples from the West Parcel, PCB congeners were sampled in the West Parcel monitoring wells (MW-1 through MW-3) for seven events spanning the period from 2016 to 2021. Total PCBs were detected above the CUL (0.014 µg/L) in 12 of 21 samples collected from monitoring wells (see Table A-4 for PCB congener data and Figure 3 for monitoring well locations) with a maximum exceedance ratio of 400. Over the last three events (2019 to 2021), concentrations in MW-1 were below the CUL, and the maximum concentrations in MW-2 and MW-3 have exceeded the CUL by factors of 2.9 and 7.6, respectively. The following summarizes total PCB detections in monitoring wells. Figure 29 shows total PCB concentrations in groundwater at the Facility.

Location	Monitoring Well	Total PCBs in Groundwater				
		Sample Events	CUL Exceedance Frequency	Concentration in µg/L		
				Minimum	Maximum	Mean
West Parcel	MW-1	7	14%	<0.00041	0.018	0.004
	MW-2	7	57%	0.0068	0.041	0.018
	MW-3	7	100%	0.015	5.6	0.86

Of the twelve samples that exceeded the CUL, only two samples exceeded by a factor of greater than ten: the June and September 2016 events from MW-3 with exceedance factors of 400 and 12, respectively. The exceedance factors for the other events where concentrations were above the CUL ranged from 1.1 to 7.6. To assess the potential for transport of the PCBs in groundwater, both filtered and unfiltered samples from the December 2016 sample from MW-3 were analyzed for PCBs. Total PCBs were detected in the unfiltered sample at a concentration of 56 µg/L but were not detected in the filtered sample (less than 6 µg/L). This result indicates that the concentrations of PCBs with the potential to migrate in groundwater are reduced by a factor of at least 10 relative to the total concentrations detected in the monitoring wells. Given that all but two samples exceeded the CUL by a factor of less than 10, and that all of the most recent samples were less than 10 times the CUL, this is a strong line of evidence that total PCBs in groundwater are not a source control concern.

Total PCBs, present in surface sediment above RALs, are a COC in sediments adjacent to the Facility. Additionally, total PCBs have been detected above CULs in porewater. Figures 30 and 31 show total PCB

results for surface sediment and porewater, respectively (data in Appendices C and D). Total PCBs exceeded the CUL of 9 µg/kg in 67 of 113 surface sediment samples. Detected concentrations in surface sediment ranged from 12 to 11,700 µg/kg. Fourteen of the samples exceeded the RAL (75 µg/kg) and two samples exceeded the principal threat waste (PTW) threshold (200 µg/kg). Samples exceeding the RAL are clustered in three areas: two samples in the Inner Cove (including one sample above the PTW threshold); six samples in the area extending from the downstream edge of the McCormick & Baxter Cap to the Central Parcel; and five samples near the West Parcel shoreline (including one sample above the PTW threshold).⁸ The clusters of sediment samples above RALs do not spatially correlate with higher groundwater concentrations (two of the three clusters are not adjacent to areas of higher groundwater concentrations). Additionally, total PCBs were detected in riverbank soil at nearby portions of the Crawford Street property at up to 1,500 µg/kg (GeoEngineers, 2022) and the West Parcel at up to 880 µg/kg (GSI, 2023), concentrations similar to the concentrations detected in surface sediment. The impacts to both riverbank soil and sediment suggest that the historical activities at the West Parcel are a common source of impacts to both.

Total PCB concentrations exceeded CULs in 17 of 30 porewater sampling locations with the maximum detected concentration at 0.021 µg/L (exceeding the CUL of 0.014 µg/L by a factor of 1.5). CUL exceedances in porewater occur throughout the in-water site, but concentrations of PCBs that exceed the CUL in porewater are in a very narrow range (0.014 to 0.021 µg/L) that only slightly exceed the CUL. These CUL exceedances are the result of the summation rules where many of the PCB congeners were not detected. Summation of only detected PCB congeners would not result in CUL exceedances.

Overall, these results indicate that total PCB concentrations are greater than the CUL in groundwater beneath the West Parcel. However, several lines of evidence suggest that PCBs are not a source control concern:

- The most recent groundwater data show that total PCB concentrations exceed the CUL by factors of 7.6 or less;
- Analysis of a filtered sample suggests that the concentrations of PCBs migrating with groundwater are likely to be less than the CUL;
- Higher concentrations of PCBs in sediment and porewater do not spatially correlate with higher groundwater concentrations;
- Concentrations of PCBs in porewater only slightly exceed the CUL (and only because of the summation rules for handling non-detects), and exceedances are scattered throughout the in-water site; and
- Impacts to both riverbank soil and sediment suggest that the historical activities at the West Parcel and/or Crawford Street are common sources of impacts to both.

⁸ One sample was located downriver, off-shore of the Crawford Street parcel.

8.5 Dioxin/Furan TEQ

In general, dioxin/furans are bioaccumulative chemicals associated primarily with combustion or trace residuals in many chlorinated products such as pesticides. Dioxin/furans are not associated with historical activities, but dioxins/furans were detected in soil throughout the Facility – higher concentrations were associated with debris in the Central parcel, and fill used to reclaim the former log pond on the West Parcel may contain dioxin/furans. Dioxin/furans are organic compounds that do occur naturally at low levels (e.g., associated with wildfires). Low levels of dioxin/furans are typically present in urban environments due to atmospheric fallout, but background concentrations in groundwater are assumed to be below detection limits.

Dioxin/furan TEQ was sampled in six monitoring wells in two to five events spanning the period from 2016 to 2021. Dioxin/furan TEQ was detected in 12 of 21 samples collected from monitoring wells (see Table A-6 for dioxin/furan TEQ data and Figure 3 for monitoring well locations). When detected, dioxin/furan TEQ exceeds the SLV (0.0051 picograms per liter [pg/L]) with a maximum exceedance ratio of 5,300. The following summarizes dioxin/furan TEQ detections in monitoring wells. Figure 32 shows dioxin/furan TEQ concentrations in groundwater at the Facility.

Location	Monitoring Well	Dioxin/Furan TEQ in Groundwater				
		Sample Events	Detection Frequency	Concentration in pg/L		
				Minimum	Maximum	Mean
West Parcel	MW-1	3	67%	<11.8	12	7.0
	MW-2	3	100%	4.6	15	9.7
	MW-3	5	100%	2.4	10	5.8
Central Parcel	MW-5	5	40%	<1.4	27	7.1
	MW-6	3	0%	<0.70	<1.3	<0.96
East Parcel	MW-9	2	0%	<3.3	<4.7	<4.0

Dioxin/furan TEQ was consistently detected only on the West Parcel (MW-1 through MW-3). Dioxin/furan TEQ was not detected at MW-6 or MW-9 on the Central and East Parcels. At MW-5 on the Central Parcel, dioxin/furan TEQ was not detected in three of five samples. On the West Parcel (MW-1 through MW-3) and the east half of the Central Parcel (MW-5), dioxin/furan TEQ was generally detected in the range of 2 to 10 pg/L (there were three samples with detections greater than 10 pg/L and four samples that were non-detect).

To assess the potential for transport of dioxin/furans in groundwater, both filtered and unfiltered samples were collected for 11 sampling events. For six of the events, the unfiltered sample had a detected concentration of dioxin/furan TEQ, but the filtered sample was non-detect (in four events both the filtered and unfiltered samples were non-detect). In those six events, the lowest relative detection limit was less than 10 percent of the detected concentration in the unfiltered sample. For the one event where dioxin/furan TEQ was detected in both the filtered and unfiltered sample, the filtered sample concentration was 40 percent of the unfiltered concentration. These results indicate that the concentrations of dioxin/furan TEQ with the potential to migrate

in groundwater are typically less than the detection limit. This is a strong line of evidence that dioxin/furan TEQ in groundwater is not a source control concern.

Dioxin/furans, present in sediment above RALs and PTW thresholds, are COCs in sediments adjacent to the Facility. Additionally, dioxin/furan TEQ has been detected above CULs in porewater. Figures 33 and 34 show dioxin/furan TEQ results for surface sediment and porewater, respectively (data in Appendices C and D). Dioxin/furan TEQ was detected above the CUL (0.01 µg/kg) in 43 of 118 surface sediment samples. In addition, one or more dioxin/furan congeners exceeded RALs or PTW thresholds in 33 samples. All but two samples exceeding the RAL or PTW threshold are clustered between the McCormick & Baxter cap and the Central Parcel. The other two samples exceeding the RAL or PTW threshold are located near the West Parcel and the Crawford Street Parcel. Dioxin/furan TEQ CUL exceedance ratios in sediment are generally in the range of 1 to 6 except as follows: exceedance ratios adjacent to the McCormick & Baxter cap range up to 11; and one sample from the beach on the Central Parcel (G014) had an exceedance ratio of 48. Sample G014 was collected adjacent to where elevated dioxin/furans were detected in riverbank soil.

Dioxin/furan TEQ was detected in porewater at 21 of 30 locations sampled with detected concentrations ranging from 1.2 to 10 pg/L (exceeding the SLV by a factor of up to 2,000). Locations of higher relative concentrations in porewater do not spatially correlate with locations of higher sediment or groundwater concentrations.

Overall, these results indicate that dioxin/furan TEQ concentrations are greater than the CUL in groundwater beneath the West Parcel. However, several lines of evidence suggest that dioxin/furan TEQ is not a source control concern:

- Analysis of filtered samples suggests that the concentrations of dioxin/furan TEQ migrating with groundwater are likely to be less than the detection limit;
- Higher concentrations of dioxin/furans in sediment and porewater do not spatially correlate with higher groundwater concentrations; and
- Known sources of dioxin/furans, including the McCormick & Baxter site and riverbank impacts on the Central Parcel, are consistent with observed impacts to sediments.

8.6 DDD, DDE, DDT, and DDx

DDT is a pesticide that has not been used for decades. It was used extensively throughout the Multnomah County area in the 1950s and 1960s. No historical uses of DDT were identified at the Facility, but fill used to reclaim the West Parcel log pond may have contained DDT. DDT is an organic compound that does not occur naturally, but DDT and its breakdown products (DDD and DDE) are persistent in the environment and may still be present in soil resulting from historical area-wide use. For the purpose of this evaluation, it was assumed that background concentrations in groundwater are below detection limits.

DDT and associated compounds were sampled in four monitoring wells in one to five events spanning the period from 2002 to 2021. One or more of DDT, DDD, and DDE were detected above the CUL in 10 of 16 monitoring well sample events (see Table A-5 for DDT, DDD, DDE, and DDx data and Figure 3 for monitoring well locations) with a maximum exceedance ratio of 3,900 (for DDD in MW-2 with a CUL of 0.000031 µg/L). Most of the non-detect samples had detection limits greater than detected concentrations in other events. Concentration patterns were similar for each of DDT, DDD, DDE, and DDx, but DDD has the highest concentrations relative to the CUL, so this discussion focuses on DDD as a surrogate for the DDx family. The following summarizes DDD detections in monitoring wells. Figure 35 shows DDD concentrations in groundwater at the Facility.

Location	Monitoring Well	DDD in Groundwater				
		Sample Events	CUL Exceedance Frequency	Concentration in µg/L		
				Minimum	Maximum	Mean
West Parcel	MW-1	5	40%	0.000030	0.0013	0.00051
	MW-2	5	100%	0.028	0.12	0.082
	MW-3	5	60%	0.0015	0.0063	0.0037
East Parcel	MW-7	1	0%	<0.1	<0.1	<0.1

Higher relative concentrations of DDD were detected at MW-2 on the West Parcel. These higher concentrations are likely associated with the fill used to reclaim the former log pond on the West Parcel.

The DDx family of compounds are COIs in sediment adjacent to the Facility. Each was detected above CULs in sediment and porewater. Figures 36 and 37 show DDD results for surface sediment and porewater, respectively (data in Appendices C and D). DDD was detected above the CUL in 2 of 107 surface sediment samples (exceedance ratios of 6.5 and 9.4). These two samples are located near the West Parcel.

DDD was detected above the CUL in porewater at 11 of 30 locations (exceedance ratios ranging from 1 to 94) with the majority of the locations exceeding the CUL (7 of 11) adjacent to the West Parcel/Crawford Street parcel. Adjacent to the West Parcel, 5 of 9 locations exceeded the CUL with exceedance factors ranging from 2 to 94.

Overall, these results indicate that DDD concentrations in groundwater are greater than the CUL beneath the West Parcel and that sediment and porewater CUL exceedances may be spatially correlated with the West Parcel. Surface sediment CUL exceedance factors are in the range of 6 to 9. Porewater exceedance factors adjacent to the West Parcel are in the range of 2 to 94. At least some of the exceedances in groundwater, sediment, and porewater may be from a common source (e.g., historical activities on the upland). Overall, the data are inconclusive regarding the need for source control related to DDD in groundwater. As evidenced by the relatively low exceedance factors for most sediment/porewater samples, potential impacts of groundwater migration on sediment and porewater, if any, are relatively modest.

8.7 Groundwater Contaminant Flux to River

Table 5 presents estimated COPC fluxes at the location of the monitoring wells (approximately at the top of bank) and at the surface sediment. Results are summarized as follows.

COPC	Mass Flux at Top of Bank (g/day) ^a	Mass Flux at Surface Sediment (g/day)	Attenuation from Top of Bank to Surface Sediment
Arsenic	2.3	0.71	0.3
BaP Eq	0.023	0.00062	0.03
TPH (C10-C12 Aliphatics)	1.5	no data	0.3 ⁹
Total PCBs	0.027	0.00045	0.02
Dioxin/Furan TEQ	0.0000093	0.00000062	0.1
DDD	0.0042	0.000023	0.005

a. Grams per day

Mass flux at the top of bank is reflective of conditions in groundwater. Mass flux at the surface sediment is reflective of residual flux from groundwater combined with porewater concentrations reflective of the level of sediment contamination. The last column above presents the attenuation in mass flux between the upland and the sediment surface. Given that flux at the surface sediment includes contributions from both groundwater and sediment contamination, the attenuation shown underpredicts the actual attenuation; actual reductions in groundwater flux are greater. BaP Eq, PCBs, and DDD show reductions in groundwater flux of 97 percent or greater. Arsenic and dioxin/furan TEQ show reductions of 70 percent and 90 percent, respectively. The lesser reductions for arsenic and dioxin/furan TEQ compared to the other COPCs likely reflect impacts of background concentrations (arsenic) and sediment contamination (dioxin/furan TEQ).

Applying these attenuation factors to BaP Eq, TPH, PCBs, and DDD, predicted exceedance factors in porewater are summarized as follows.

COPC	Groundwater CUL (µg/L)	Groundwater Concentration (µg/L)	Groundwater Concentration Data Source	Site Specific Attenuation Factor	Max. Predicted Porewater Concentration (µg/L)	Max. Predicted Porewater Exceedance Factor
BaP Eq	0.00012	0.68	MW-1 Mean	0.03	0.02	170
TPH	2.6	18	MW-3 Mean	0.3	3.6	2.1
PCBs	0.014	0.86	MW-3 Mean	0.02	0.017	1.2
DDD	0.000031	0.082	MW-2 Mean	0.005	0.00041	13

Again, the predicted porewater exceedance factors are an upper limit because porewater concentrations include impacts from sediment contamination that are independent of impacts from groundwater. Therefore,

⁹ Assumed to be approximately 10 times less than carcinogenic PAHs (i.e., TPH is more mobile than cPAHs) based on ratio of Koc for carcinogenic PAHs (approximately 1×10^6) to Koc for C10-C12 aliphatics (approximately 1×10^5).

a low value is a strong line of evidence that groundwater is not adversely impacting porewater, but a high value does not necessarily indicate an unacceptable impact from groundwater. These results are a strong line of evidence that TPH and PCBs are not a source control concern. Because these attenuation factors include impacts from both groundwater and local sediment impacts, the data for BaP Eq and DDD are inconclusive.

8.8 Groundwater Source Control Conclusions and Recommendations

As discussed in Sections 8.1 through 8.7 above and summarized below for each COPC, arsenic, TPH, PCBs, and dioxin/furans are not source control concerns in groundwater. It is possible that PAHs and DDx compounds in groundwater at the West Parcel are having a modest impact on sediment/porewater, but there are lines of evidence that groundwater, sediment, and porewater impacts on/near the West Parcel are from a common source: historical activities on the West Parcel and/or the Crawford Street parcel (rather than groundwater migration causing the impacts observed in sediment/porewater). Impacts on the West Parcel with the greatest potential to migrate to sediment/porewater are associated with MW-2 and MW-3, both of which are located in the former log pond fill. Section 2.4 discusses likely sources of the material used to fill the log pond, and that fill is the likely source of the groundwater COCs. Section 2.4 also discusses the best information readily available on the approximate extent of the fill.

The following summarizes conclusions for each COC.

- Arsenic – Arsenic is present above the background concentration in groundwater at the West Parcel, likely resulting from organics in fill creating reducing conditions that leach naturally-occurring arsenic from soil. The spatial distributions of arsenic in sediment and porewater do not indicate that arsenic concentrations are elevated adjacent to the West Parcel relative to other areas of the in-water site. This is consistent with groundwater returning to a more oxidized state prior to reaching porewater. Therefore, arsenic is not a groundwater source control concern.
- PAHs – PAHs are present above CULs in groundwater at the West Parcel and in sediment and porewater adjacent to the West Parcel. The presence of PAHs in riverbank soil above CULs is a strong line of evidence that impacts to all of these media are from a common historical source. Regardless, except for one sediment sample and one porewater sample, exceedance factors in sediment and porewater are in the range of 1 to 7. It is inconclusive if PAHs in groundwater are adversely impacting sediment or porewater, but that impact, if any, is relatively modest.
- TPH (C10-C12 aliphatics) – TPH was detected in one out of three samples from each groundwater well on the West Parcel. When detected, TPH was above the CUL. TPH is not a COC in sediment and was not analyzed in sediment or porewater samples. However, using the measured attenuation for BaP Eq as a surrogate to estimate attenuation of TPH, porewater concentrations for TPH are estimated to exceed the CUL by a factor of 1.4 or less. Based on the relatively infrequent detection, the lack of concern in sediment, and the low estimated porewater concentrations, TPH (C10-C12 aliphatics) is not a groundwater source control concern.

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- Total PCBs – Total PCBs are present above CULs in groundwater beneath the West Parcel. Nineteen of 21 groundwater samples exceeded the CUL by factors of 1 to 8. Sediment and porewater exceedances do not spatially correlate with higher groundwater concentrations. Concentrations in filtered groundwater samples and in porewater are strong lines of evidence that impacts to porewater from groundwater are less than the CUL. Detections of PCBs in riverbank soil and sediment at similar concentrations is a strong line of evidence that impacts to sediments are not from groundwater. Based on these lines of evidence, total PCBs are not a groundwater source control concern.
 - Dioxin/Furan TEQ – Dioxin/furan TEQ is present above the JSCS screening level value in groundwater beneath the West Parcel and likely the western portion of the Central Parcel. Exceedances of the CUL in sediment near the West Parcel are in the range of 1 to 6. Sediment and porewater exceedances do not spatially correlate with higher groundwater concentrations. Impacts to surface sediment are consistent with known source areas at McCormick & Baxter and riverbank soil at the Central Parcel. Based on these lines of evidence, dioxin/furan TEQ is not a groundwater source control concern.
 - DDD – DDD is present above CULs in groundwater at the West Parcel and in sediment and porewater adjacent to the West Parcel. These spatially correlated impacts in groundwater, sediment, and porewater may be from a common source. Only two of 16 surface sediment samples exceeded the CUL adjacent to the West Parcel (exceedance factors of 6 and 9). Five of nine porewater samples exceeded the CUL adjacent to the West Parcel (exceedance factors of 2 to 94). It is inconclusive if DDD in groundwater is adversely impacting sediment or porewater, but that impact, if any, is relatively modest.

Except for possibly PAHs and DDD, COCs in groundwater from the Willamette Cove Upland Facility are not having adverse effects on surface water or sediments. We recommend collecting groundwater samples between the West Parcel upland monitoring wells and the porewater sampling locations offshore of the West Parcel and analyzing the samples for PAHs and DDD. Preparation of a groundwater sampling plan is underway.

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Table 1
Monitoring Well Construction Details
Willamette Cove Upland Facility
Portland, Oregon

Well ID	Date Installed	TOC Elevation (feet)	Depth to Bottom (feet bgs)	Screened Interval (feet bgs)	Well Diameter (inches)	Casing Material
MW-1	1/21/2002	37.84	41.5	25-40	2	PVC
MW-2	1/22/2002	46.14	41.5	25-40	2	PVC
MW-3	1/23/2002	44.07	43.0	27-42	2	PVC
MW-4	1/23/2002	37.30	36.5	19-34	2	PVC
MW-5	1/24/2002	38.13	37.0	22-37	2	PVC
MW-6	1/25/2002	38.05	37.0	22-37	2	PVC
MW-7	1/28/2002	36.67	35.0	20-35	2	PVC
MW-8	2/9/2016	37.79	38.00	23-38	2	PVC
MW-9	2/9/2016	35.41	33	18-33	2	PVC

Notes:

1. TOC = top of casing
2. Elevations relative to NAVD88 datum.
3. bgs = below ground surface.
4. Elevation for wells MW-2, MW-8, and MW-9 are from survey on June 16, 2016. All other well elevations from survey conducted in 2002.
5. Well diameter references the interior diameter of the casing.
6. PVC = polyvinyl chloride

Table 2
Groundwater Elevations
Willamette Cove Upland Facility
Portland, Oregon

Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet bgs)	Groundwater Elevation (feet)
MW-1	2/7/2002	37.84	26.83	11.01
	5/28/2002		26.25	11.59
	8/29/2005		28.43	9.41
	12/16/2005		28.04	9.80
	2/23/2016		24.60	13.24
	6/3/2016		25.40	12.44
	9/14/2016		28.40	9.44
	12/14/2016		25.91	11.93
	11/22/2019		29.18	8.66
	12/3/2019		28.61	9.23
	8/11/2020		27.56	10.28
	2/23/2021		26.28	11.56
MW-2	2/7/2002	46.14	29.25	16.89
	5/28/2002		24.67	21.47
	8/29/2005		27.81	18.33
	12/16/2005		28.91	17.23
	2/23/2016		26.38	19.76
	6/3/2016		25.93	20.21
	9/14/2016		28.54	17.60
	12/14/2016		29.35	16.79
	11/22/2019		31.66	14.48
	12/3/2019		31.62	14.52
	8/11/2020		30.37	15.77
	2/23/2021		31.14	15.00
MW-3	2/7/2002	44.07	30.02	14.05
	5/28/2002		30.97	13.10
	8/29/2005		36.93	7.14
	12/16/2005		34.80	9.27
	2/23/2016		30.99	13.08
	6/3/2016		32.70	11.37
	9/14/2016		36.05	8.02
	12/14/2016		32.40	11.67
	11/22/2019		35.90	8.17
	12/3/2019		35.54	8.53
	8/11/2020		35.05	9.02
	2/23/2021		33.39	10.68
MW-4	2/7/2002	37.30	26.1	11.20
	5/28/2002		24.92	12.38
	8/29/2005		27.97	9.33
	12/16/2005		27.68	9.62
	2/23/2016		24.23	13.07
	6/3/2016		24.96	12.34
	9/14/2016		27.90	9.40
	12/14/2016		25.62	11.68
	8/11/2020		27.10	10.20
	2/23/2021		25.98	11.32

Please see notes at end of table.

Table 2
Groundwater Elevations
Willamette Cove Upland Facility
Portland, Oregon

Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet bgs)	Groundwater Elevation (feet)
MW-5	2/7/2002	38.13	27.12	11.01
	5/28/2002		26.53	11.60
	8/29/2005		29.95	8.18
	12/16/2005		29.21	8.92
	2/23/2016		25.01	13.12
	6/3/2016		26.15	11.98
	9/14/2016		29.84	8.29
	12/14/2016		26.34	11.79
	8/11/2020		29.03	9.10
	2/23/2021		27.10	11.03
MW-6	2/7/2002	38.05	27.08	10.97
	5/28/2002		25.15	12.90
	8/29/2005		29.98	8.07
	12/16/2005		29.29	8.76
	2/23/2016		25.01	13.04
	6/3/2016		26.14	11.91
	9/14/2016		30.85	7.20
	12/14/2016		26.40	11.65
	8/11/2020		29.42	8.63
	2/23/2021		27.08	10.97
MW-7	2/7/2002	36.67	23.12	13.55
	5/28/2002		23.49	13.18
	8/29/2005		26.45	10.22
	12/16/2005		26.49	10.18
	2/23/2016		21.62	15.05
	6/3/2016		22.35	14.32
	9/14/2016		26.60	10.07
	12/14/2016		24.34	12.33
	8/11/2020		25.42	11.25
	2/23/2021		23.57	13.10
MW-8	2/23/2016	37.79	24.68	13.11
	6/3/2016		25.51	12.28
	9/14/2016		30.55	7.24
	12/14/2016		26.01	11.78
	8/11/2020		29.44	8.35
	2/23/2021		27.00	10.79
MW-9	2/23/2016	35.41	20.93	14.48
	6/3/2016		22.01	13.40
	9/14/2016		26.12	9.29
	12/14/2016		23.29	12.12
	8/11/2020		24.91	10.50
	2/23/2021		23.07	12.34

Notes:

1. Elevations relative to NAVD88 datum.
2. bgs = below ground surface.
3. Top of casing elevations for wells MW-2, MW-8, and MW-9 are from survey on June 16, 2016. All other well elevations from survey conducted in 2002.

Table 3
Groundwater Movement Estimates
Willamette Cove Upland Facility
Portland, Oregon

Monitoring Well	Location	Mean Distance to River (ft)	Soil Type ²	Range of Hyd Cond ³ (k), ft/day			Porosity ⁴ (n)	Water Level Observation Period			Water Elevation Summary (ft NAVD88)			Range of Hydraulic Gradient (i)				Instantaneous Groundwater Velocity (v = k*i/n), ft/day			Time to Reach River (yr)
				Low	Mid-range	High		Start	End	Duration (yr)	Min	Max	Mean	Min	Max	Mean	% Negative	Min	Max	Mean	
MW-1	West Parcel	60	Silt	0.0003	0.03	3	0.4	11/17/2020	6/30/2023	2.6	8.27	16.53	11.02	-0.084	0.083	0.023	15%	-0.06	0.06	0.002	100
MW-2	West Parcel	75	Silty Sand	0.03	3	300	0.4	11/23/2021	6/30/2023	1.6	13.91	20.96	17.81	-0.028	0.25	0.10	2%	-0.18	1.7	0.64	0.3
MW-3	West Parcel	65	Silty Sand	0.03	3	300	0.4	11/17/2020	6/30/2023	2.6	9.53	21.74	12.52	-0.013	0.20	0.045	0.1%	-0.08	1.3	0.30	0.6
MW-4	Central Parcel	80	Sand	1	60	3000	0.4	11/23/2021	6/30/2023	1.6	8.89	19.22	11.30	-0.052	0.062	0.013	24%	-6.4	7.8	1.6	0.1
MW-5	Central Parcel	35	Sand	1	60	3000	0.4	11/17/2020	6/30/2023	2.6	7.47	20.21	10.49	-0.10	0.11	0.025	22%	-13	13	3.1	0.03
MW-9	East Parcel	130	Sand	1	60	3000	0.4	11/17/2020	6/30/2023	2.6	8.18	20.97	11.64	-0.025	0.043	0.014	6%	-3.2	5.4	1.8	0.2
River	--	--	--	--	--	--	--	11/17/2020	3/9/2023	2.3	4.73	21.40	9.51	--	--	--	--	--	--	--	

Notes

1. Data from continuous water level monitoring data (Appendix F) unless otherwise noted.
2. From cross sections: Figures 6 through 11
3. Freeze and Cherry, 1979
4. Correlation to soil type
5. Positive gradients/velocities/displacements indicate movement toward the river.

Table 4
Summary of Cleanup Level Exceedances and Groundwater COPCs
Willamette Cove Upland Facility
Portland, Oregon

Chemicals of Interest	Groundwater		Maximum Exceedance Ratio in Porewater					Sediment Exceedance Ratio		Groundwater COPC?		Comments
	Max. ER	Exceedance Frequency	All Areas		Adjacent West Parcel	Adjacent Central Parcel	Adjacent East	Surface	Subsurface	Yes	No	
			Shallow (0.5-1 ft)	Deep (1.5-2 ft)								
Aluminum	120	14%	<1	<1	<1	<1	<1	no data	no data		X	Second highest ER = 2.1; relatively low exceedance frequency; below screening level in porewater
Antimony	<1	0%	no data	no data	no data	no data	no data	no data	no data		X	Less than screening level
Arsenic	3,200	73%	1,800	1,800	1,800	1,400	450	4	no data	X		
Cadmium	12	2%	no data	no data	no data	no data	no data	no data	no data		X	Max detection in 2002; second highest ER = 1.8; low exceedance frequency
Chromium	<1	0%	<1	<1	<1	<1	<1		no data		X	Less than screening level
Copper	4.0	7%	<1	<1	<1	<1	<1	<1	no data		X	Low ER; low exceedance frequency; below screening level in porewater
Lead	16	9%	<1	<1	<1	<1	<1	no data	no data		X	Second highest ER = 1.8; relatively low exceedance frequency; below screening level in porewater
Mercury	<1	0%	no data	no data	no data	no data	no data	no data	no data		X	Less than screening level
Nickel	<1	0%	no data	no data	no data	no data	no data	no data	no data		X	Less than screening level
Selenium	<1	0%	no data	no data	no data	no data	no data	no data	no data		X	Less than screening level
Silver	<1	0%	no data	no data	no data	no data	no data	no data	no data		X	Less than screening level
Vanadium	1.1	2%	no data	no data	no data	no data	no data	no data	no data		X	Low ER; low exceedance frequency
Zinc	1.3	1%	<1	<1	<1	<1	<1	<1	no data		X	Low ER; low exceedance frequency; below screening level in porewater
Acenaphthene	<1	0%	9.2	10	<1	<1	<1				X	Less than screening level
Acenaphthylene	1.7	6%	23	23	<1	<1	<1				X	Low ER; low exceedance frequency; below screening level in porewater adjacent to uplands
Anthracene	2.1	6%	9	13	<1	<1	<1				X	Low ER; low exceedance frequency; below screening level in porewater adjacent to uplands
Benzo (a) anthracene	960	86%	130	150	23	<1	<1			X		
Benzo (a) pyrene	26,000	74%	240	240	47	<1	<1			X		
Benzo (b) fluoranthene	1,400	71%	24	24	3.2	<1	<1			X		
Benzo(g,h,i) perylene	7.4	11%	<1	<1	<1	<1	<1				X	Relatively low ER; relatively low exceedance frequency; below screening level in porewater adjacent to uplands
Benzo (k) fluoranthene	960	69%	25	25	3.2	<1	<1			X		
Chrysene	1,300	89%	97	100	25	<1	<1			X		
Dibenz (a,h) anthracene	4,700	37%	71	72	<1	<1	<1			X		
Fluoranthene	<1	0%	<1	1.2	<1	<1	<1				X	Less than screening level
Fluorene	3.2	6%	24	30	<1	<1	<1				X	Low ER; low exceedance frequency; below screening level in porewater adjacent to uplands
Indeno (1,2,3-cd) pyrene	1,900	69%	12	12	1.1	<1	<1			X		
Naphthalene	53	14%	<1	<1	<1	<1	<1				X	Relatively low exceedance frequency; below screening level in porewater adjacent to uplands
Phenanthrene	1.7	6%	6.8	11	<1	<1	<1				X	Low ER; low exceedance frequency; below screening level in porewater adjacent to uplands
Pyrene	<1	0%	<1	<1	<1	<1	<1				X	Less than screening level
2-Methylnaphthalene	1.9	9%	3.7	34	<1	<1	<1				X	Low ER; low exceedance frequency; below screening level in porewater adjacent to uplands
cPAHs (BaP eq)	36,000	89%	290	300	74	<3.7	<3.7	140	3.4	X		
Total PAH								74	19		X	Maximum total PAHs in groundwater <1,000 µg/L, insufficient to recontaminate sediments above CUL of 23,000 µg/kg
TPH (C10-C12 Aliphatics)	19	33%	no data	no data	no data	no data	no data	no data	no data	X		
Bis(2-ethylhexyl)phthalate	32	6%	no data	no data	no data	no data	no data	no data	no data		X	Low frequency of exceedance; exceedances in unfiltered grab samples
Butylbenzyl phthalate	2.9	2%	no data	no data	no data	no data	no data	no data	no data		X	Low ER; low frequency of exceedance; exceedances in unfiltered grab samples
Diethyl phthalate	1.7	2%	no data	no data	no data	no data	no data	no data	no data		X	Low ER; low frequency of exceedance; exceedances in unfiltered grab samples
Di-n-butyl phthalate	3.3	2%	no data	no data	no data	no data	no data	no data	no data		X	Low ER; low frequency of exceedance; exceedances in unfiltered grab samples
Dibenzofuran	2.9	2%	no data	no data	no data	no data	no data	no data	no data		X	Low ER; low frequency of exceedance; exceedances in unfiltered grab samples
Pentachlorophenol	25	27%	22	10	<3.9	<3.9	<3.9	not detected	not detected		X	Non-detect in porewater adjacent to upland; non-detect in sediment
Total PCBs	400	57%	1.3	1.5	1.3	1.5	1.2	26	844	X		
2,3,7,8-TCDD	<900	0%	<440	11	<440	<412	11	39	1,700		X	Non-detect in groundwater
1,2,3,7,8-PeCDD								23,950	92,000		X	No water screening levels; evaluate using 2,3,7,8-TCDD Eq.
2,3,7,8-TCDF								42	91		X	No water screening levels; evaluate using 2,3,7,8-TCDD Eq.
2,3,4,7,8-PeCDF								140	890		X	No water screening levels; evaluate using 2,3,7,8-TCDD Eq.
1,2,3,4,7,8-HxCDF								410	1,200		X	No water screening levels; evaluate using 2,3,7,8-TCDD Eq.
2,3,7,8-TCDD eq	5,300	57%	2,000	2,000	2,000	2,000	1,800	48	4,700	X		
Total DDD	3,900	63%	93	74	93	5.0	13	9.4	7.5	X		
Total DDE	250	50%	2.3	1.8	2.3	<1	<1	5.0	6.0	X		
Total DDT	55	44%	4.3	7.1	7.1	<1	<1	12	12	X		
Total DDx	120	63%	3.0	2.4	3.0	<1	<1	710	660	X		
VOCs	1.1 to 42	1% to 4%	no data	no data	no data	no data	no data	no data	no data		X	Low ER; low frequency of exceedance; exceedances in unfiltered grab samples

Notes

1. Shaded cells: No CUL

2. ER for metals in groundwater are for dissolved metals

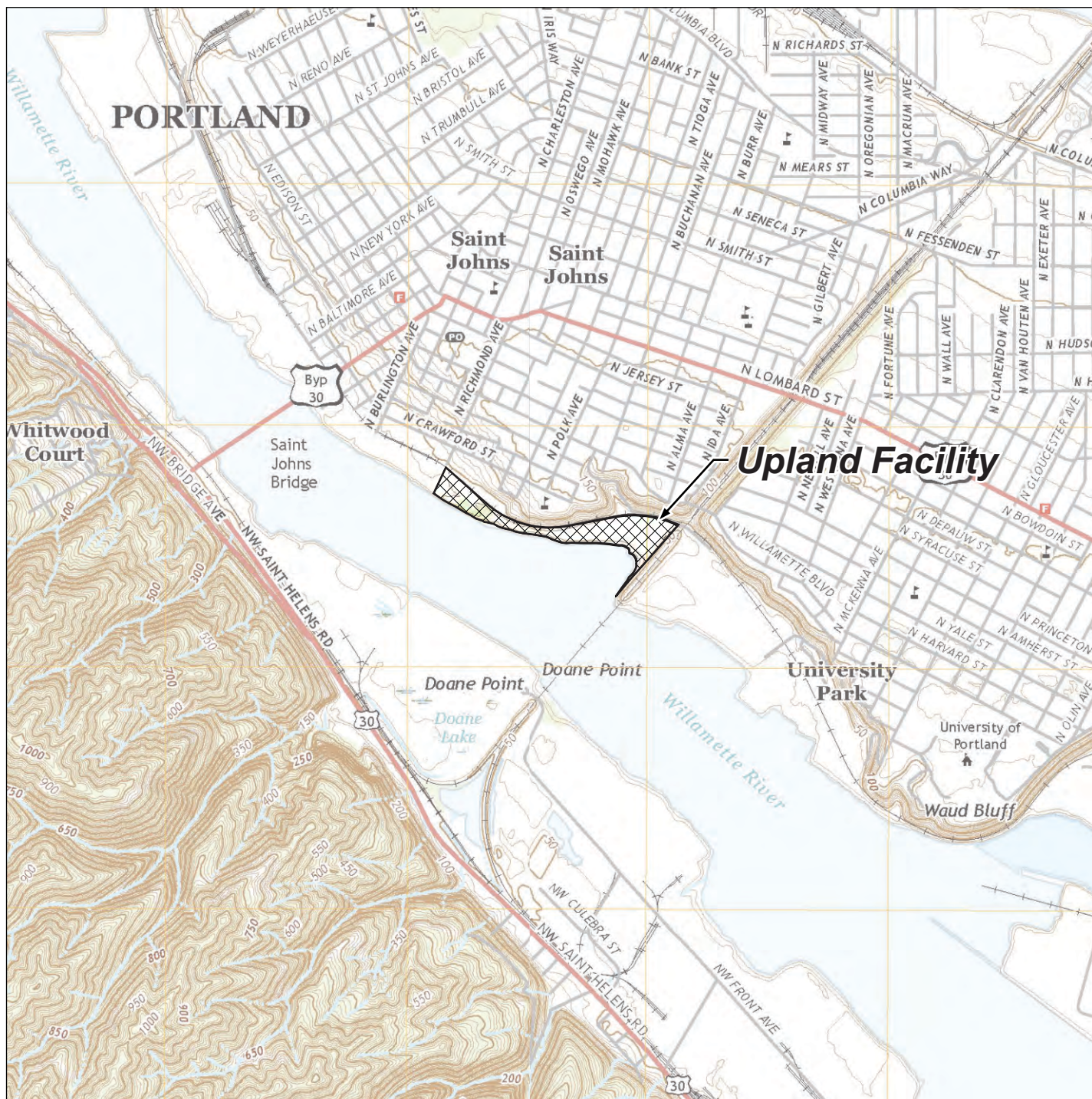
3. Exceedance ratio = detected concentration divided by Portland Harbor Table 17 cleanup level except groundwater/porewater for aluminum, antimony, silver, acenaphthylene, phthalates, dibenzofuran, 2,3,7,8-TCDD, and 2,3,7,8-TCDD eq based on JSCS SLV.

Table 5
Groundwater Contaminant Flux
Willamette Cove Upland Facility
Portland Oregon

Contaminant of Potential Concern	Width of Plume Parallel to River ¹ (ft)	Thickness of Plume ² (ft)	Hydraulic Conductivity ³ (ft/day)	Hydraulic Gradient ⁴	Groundwater Flux at Monitoring Wells ⁵ (ft ³ /day)	Average Groundwater Plume COPC Concentration ⁶ (µg/L)	COPC Mass Flux at Top of Bank (g/day)	Width of Groundwater Discharge Zone ² (ft)	Specific Discharge ⁷ (cm/day)	Groundwater Flux at Riverbed ⁸ (ft ³ /day)	Average Porewater Concentration ⁹ (µ/L)	COPC Mass Flux at Surface Sediment (g/day)
Arsenic	750	50	2	0.055	4,125	20	2.3	150	0.9	3,322	7.6	0.71
BaP Eq	750	50	2	0.055	4,125	0.20	0.023	150	0.9	3,322	0.0066	0.00062
TPH (C10-C12 Aliphatics)	650	50	2	0.055	3,575	15	1.5	150	0.9	2,879	no data	no data
Total PCBs	400	50	3	0.07	4,200	0.23	0.027	150	0.9	1,772	0.0090	0.00045
Dioxin/Furan TEQ	1500	50	16	0.044	52,800	0.0000062	0.0000093	150	0.9	6,644	0.0000033	0.00000062
DDD	800	50	2	0.055	4,400	0.034	0.0042	150	0.9	3,543	0.00023	0.000023

- Notes
- 1. From Figures 23, 26, 29, 32, and 35. TPH width assumed defined by West Parcel.
 - 2. From Section 6.4
 - 3. Mean value of mid-range for wells in plume from Table 3
 - 4. Mean value of means for wells in plume from Table 3
 - 5. From Darcy's Law: $Q = k * i * A$
 - 6. From Figures 23, 26, 29, 32, and 35. TPH is mean of means from MW-1, MW-2, and MW-3.
 - 7. Mean value from Section 6.3.6
 - 8. Specific discharge * Area; Area = Width of Plume * Width of Groundwater Discharge Zone
 - 9. Mean of values for samples offshore of groundwater plume and within 150 feet of shoreline

I:\Client\Port of Portland\00-PH905\05 WC\01 Repts and Wk Plans\19 GW SCE_SCAE\2023 Update\320001056-17 01 (Facility Location Map).des



Note: Base map prepared from USGS 7.5-minute quadrangles of Linnton and Portland, OR, dated 2020 as provided by USGS.gov.



0 2,000 4,000
Approximate Scale in Feet

Facility Location Map

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:
320001056-17

Drawn:
JP

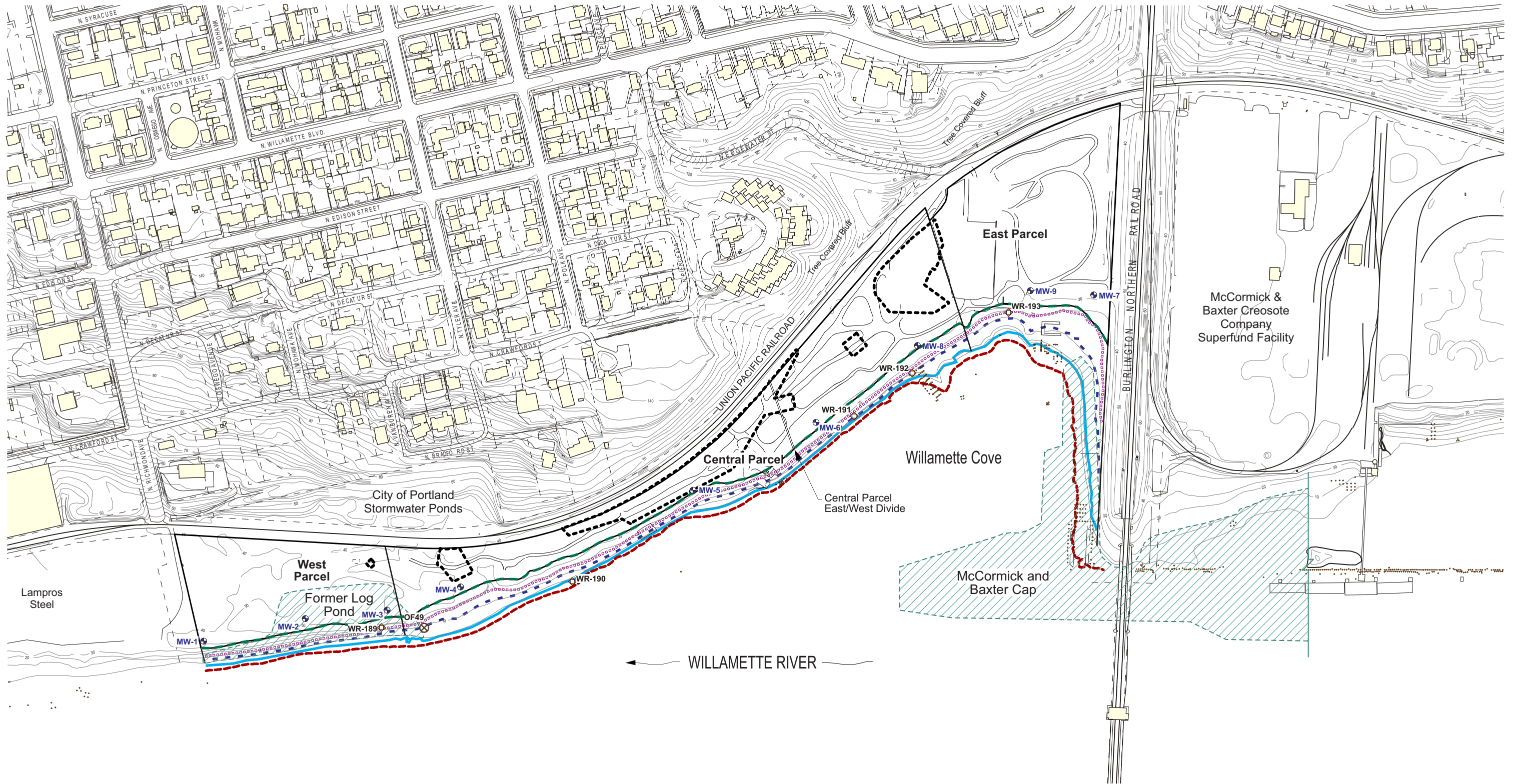
Approved:
SM

December 2023

Figure

1

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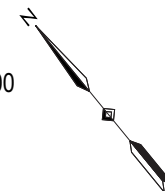
Legend:

- MW-1 Monitoring Well Location
- OF-49 City of Portland Outfall
- WR-189 Potential Historical Outfall (Inactive)
- 2008 and 2015 Removal Action Areas
- Upper Source Control Screening Boundary (Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)
- Ordinary High Water Line (20.1NAVD88)
- Mean High Water Line (13.3NAVD88)
- Ordinary Low Water Line (6.9NAVD88)
- 2 Columbia River Datum (3.2NAVD88)

0 300 600

Approximate Scale in Feet

Source: Base map prepared from an electronic file provided by Hart Crowser.



Facility Plan

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

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Tigard, Oregon 97224

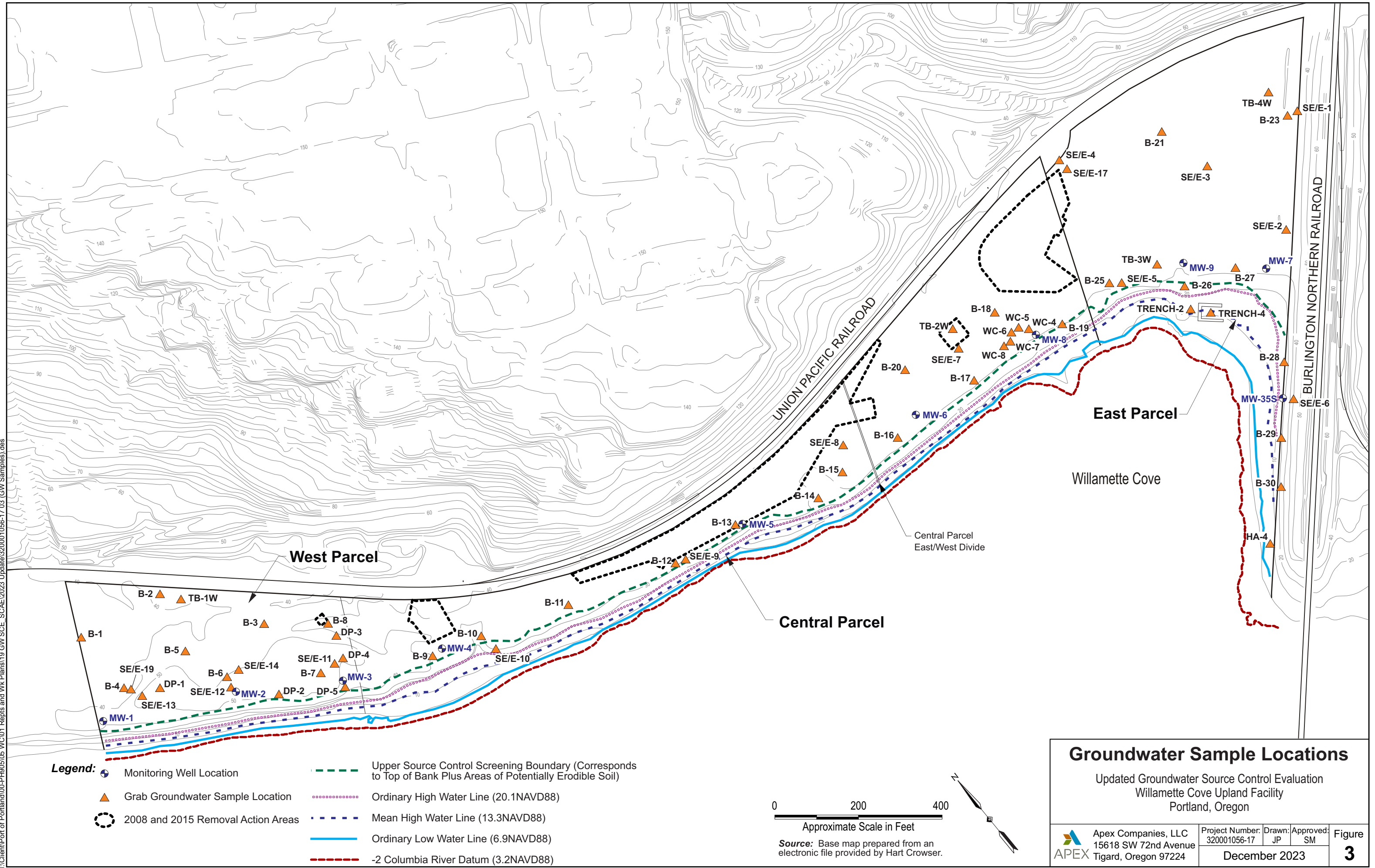
Project Number: 320001056-17
Drawn: JP
Approved: SM

December 2023

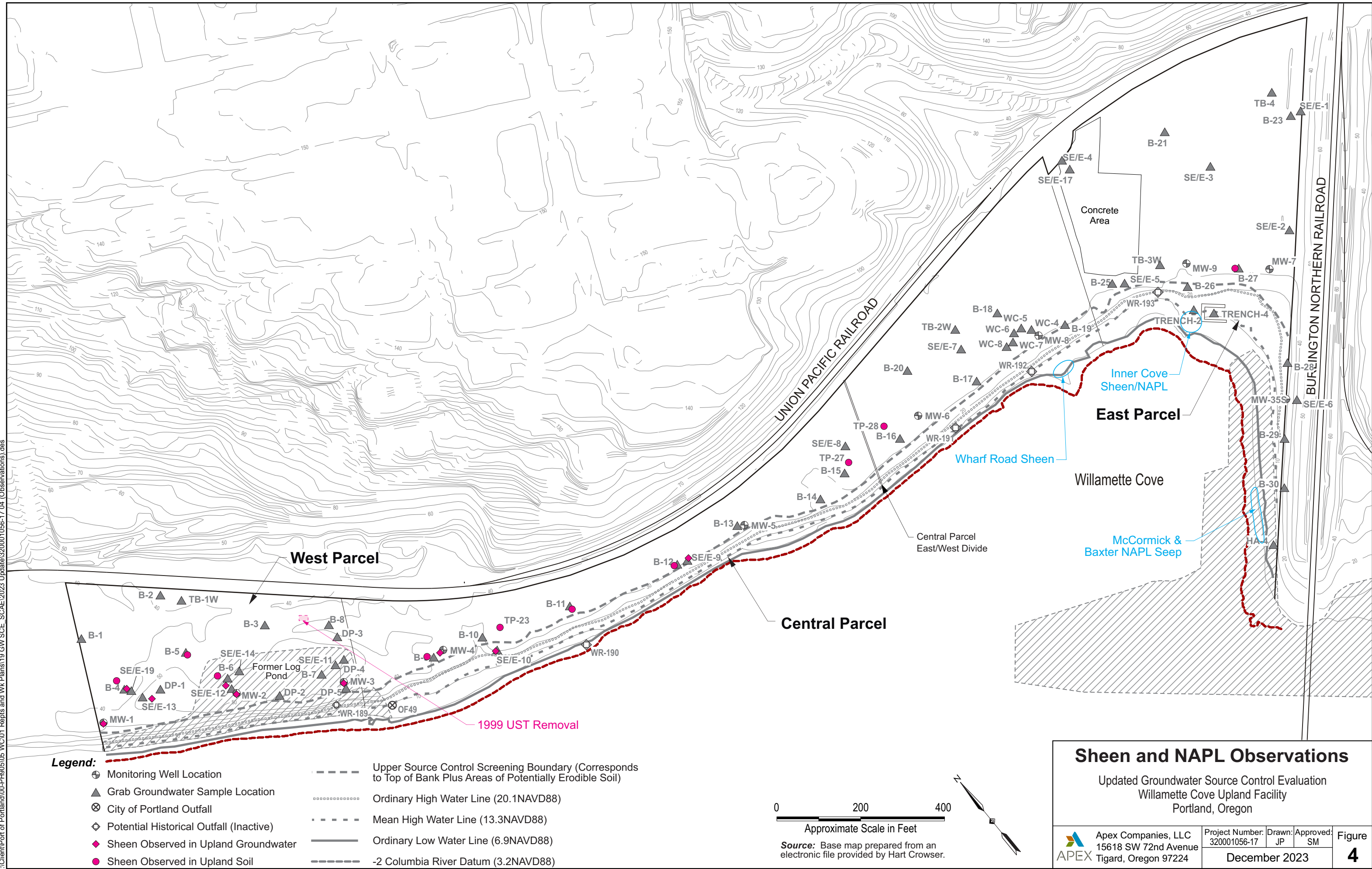
Figure

2

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I:\Client\Port of Portland\00-PIH905\05 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 04 (Observations).des



Sheen and NAPL Observations

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



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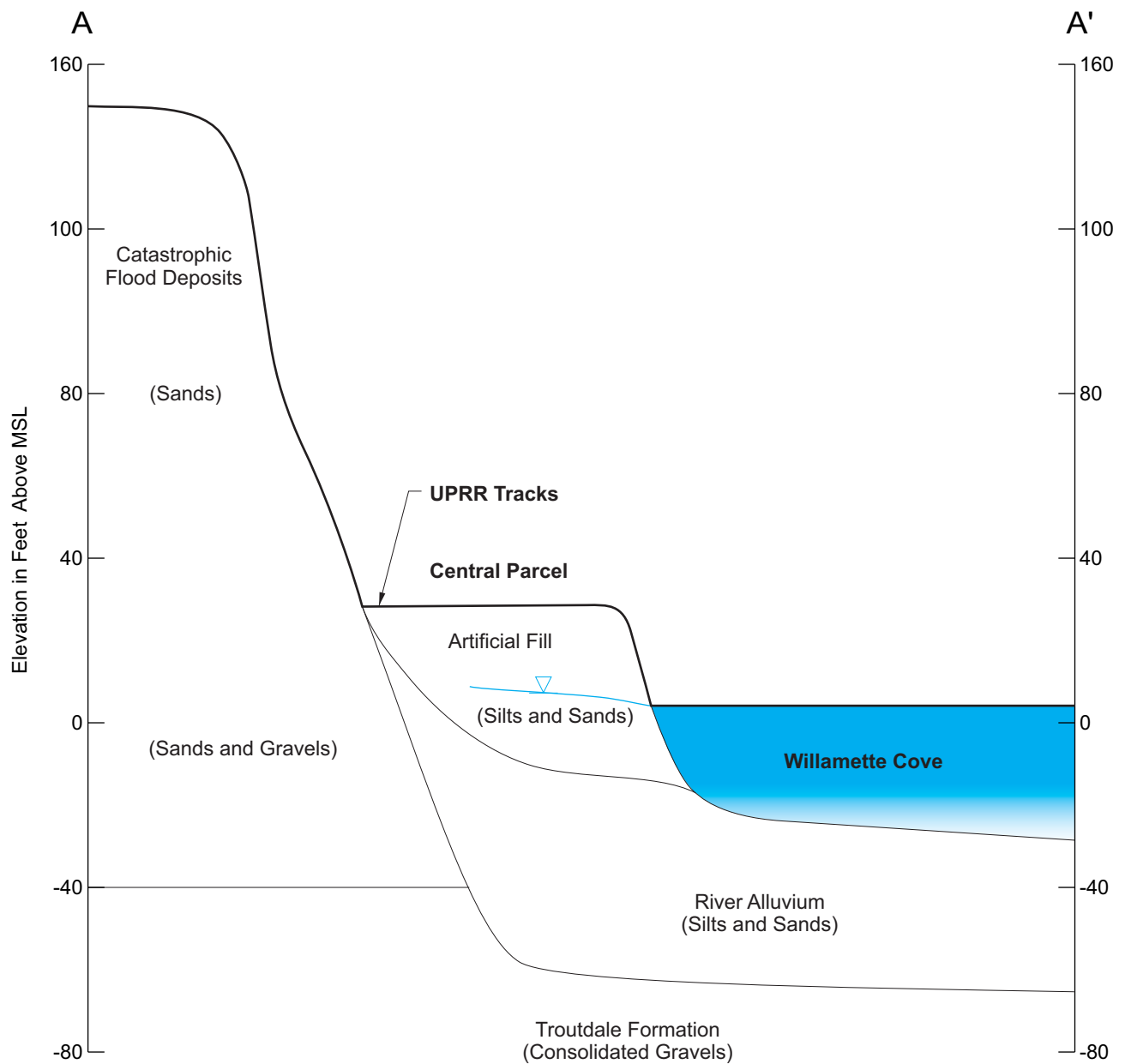
Project Number:
320001056-17

Drawn:
JP

Approved:
SM

December 2023

Figure
4



Notes: Cross-section locations shown on Figure 6. Contacts between soil types are based on interpolation between explorations on the Upland Facility, nearby well logs, and PTI (1992), and represent our interpretation of subsurface conditions based on currently available data.

Approximate Horizontal Scale in Feet
 0 200 400
 0 40 80
 Approximate Vertical Scale in Feet
 Vertical Exaggeration x 50

Legend:

 Groundwater Level

Generalized Geologic Cross-Section at Willamette Cove

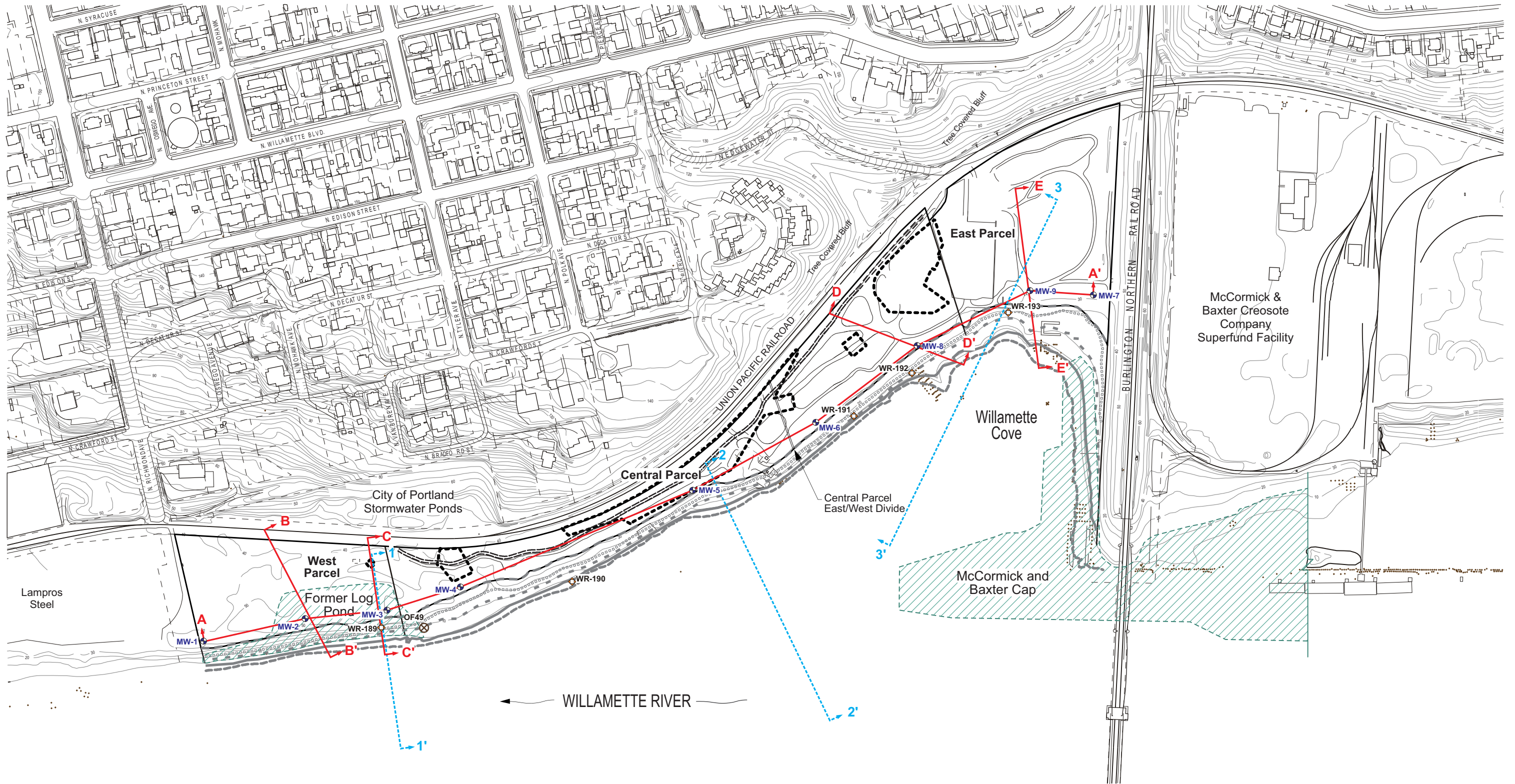
Updated Groundwater Source Control Evaluation
 Willamette Cove Upland Facility
 Portland, Oregon

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Figure
5

I:\Client\Port of Portland\00-PP\905\05 WC\01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 06 (Cross-Section Locations).des



Legend:

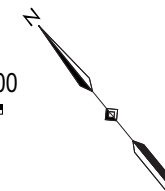
- MW-1 Monitoring Well Location
- OF49 City of Portland Outfall
- WR-189 Potential Historical Outfall (Inactive)
- 2008 and 2015 Removal Action Areas
- Proposed Bike Path
- Upper Source Control Screening Boundary (Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)
- Ordinary High Water Line (20.1NAVD88)
- Mean High Water Line (13.3NAVD88)
- Ordinary Low Water Line (6.9NAVD88)
- 2 Columbia River Datum (3.2NAVD88)

- A A' Geologic Cross-Section Location (See Figures 7 through 11)
- 1 1' Riverbank Cross-Section Location (See Figure 12)

0 300 600

Approximate Scale in Feet

Source: Base map prepared from an electronic file provided by Hart Crowser.



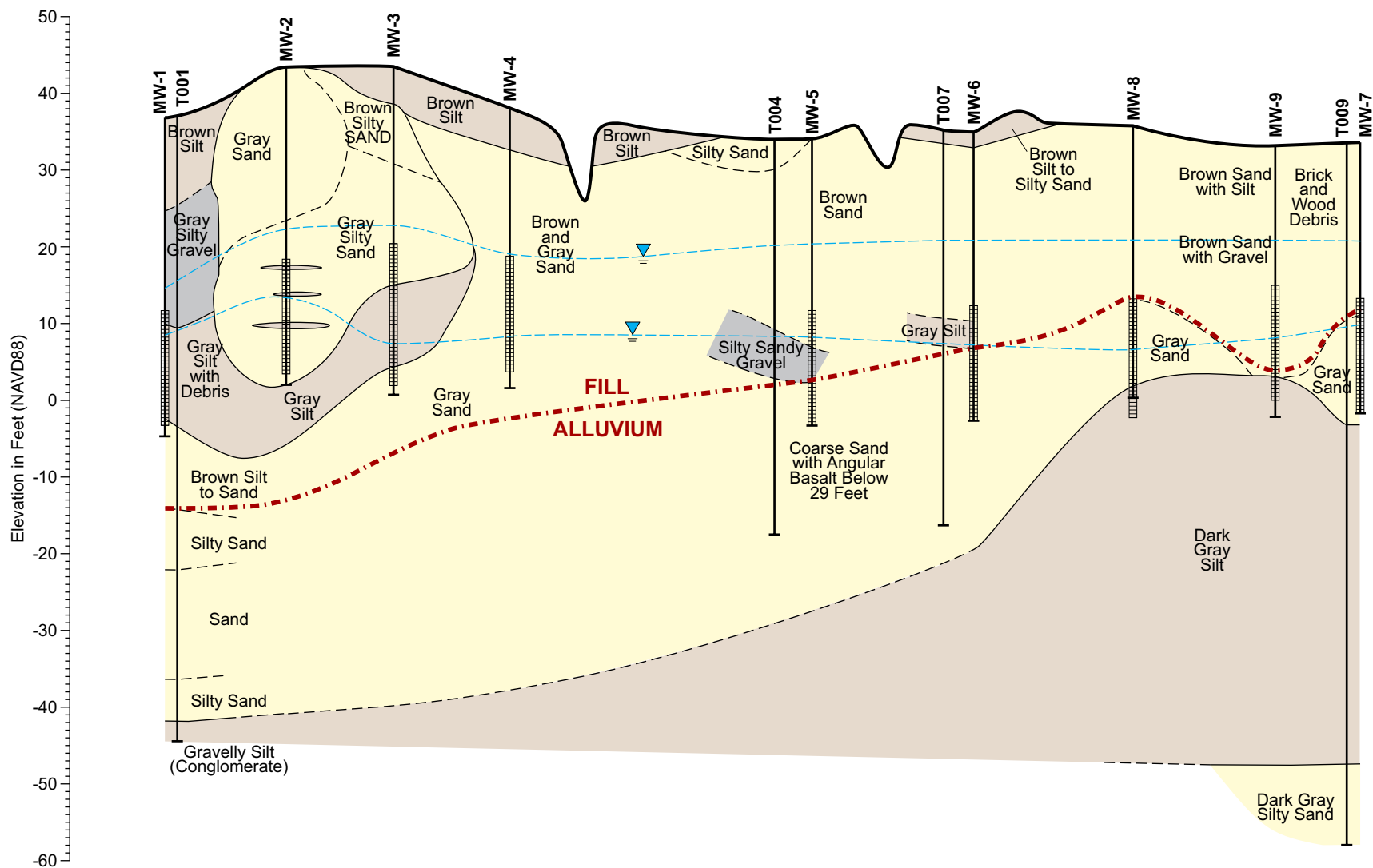
Geologic and Riverbank Cross-Section Locations

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

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Project Number:	320001056-17	Drawn:	JP	Approved:	SM
December 2023					

Figure
6



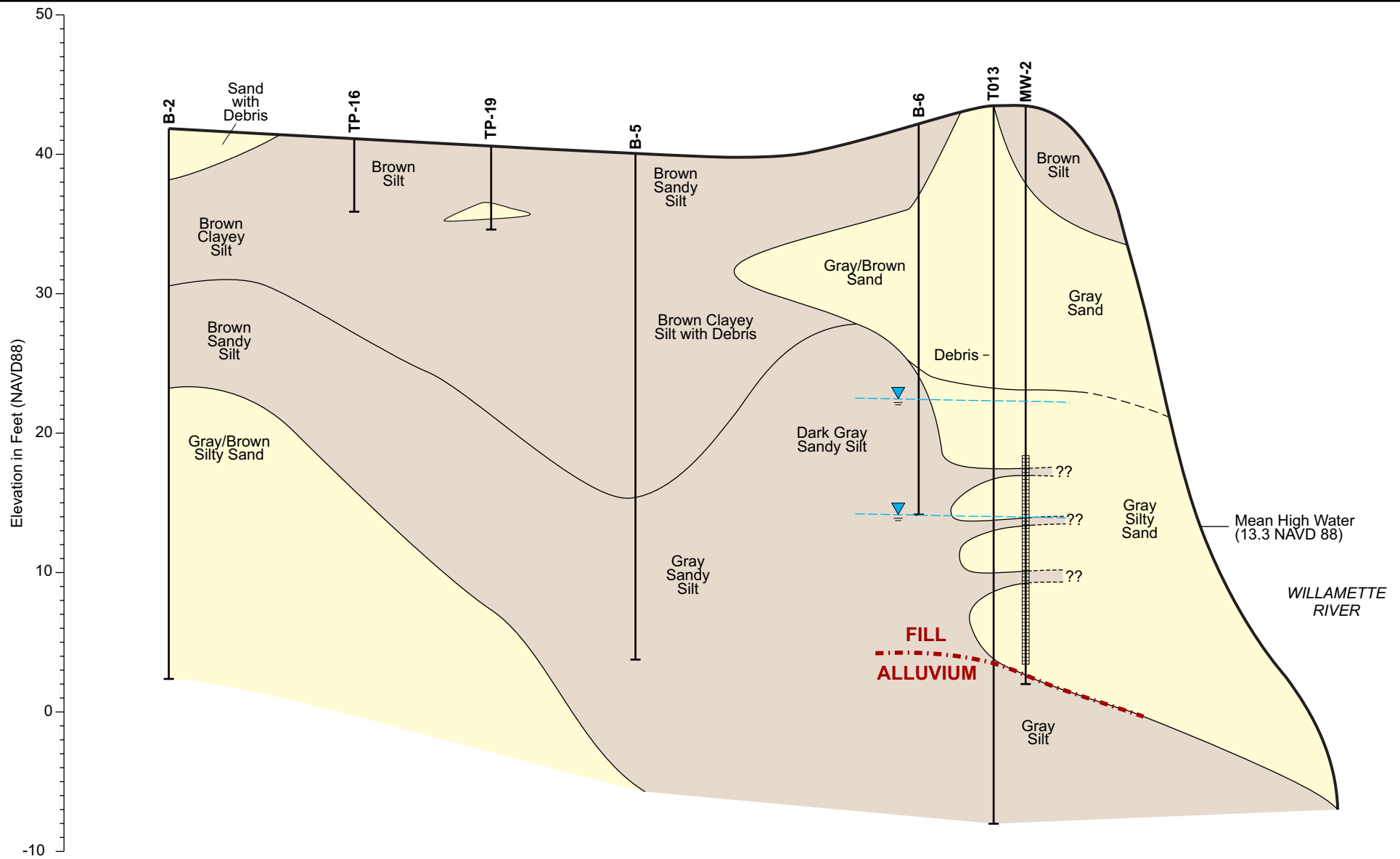
Geologic Cross-Section A-A'

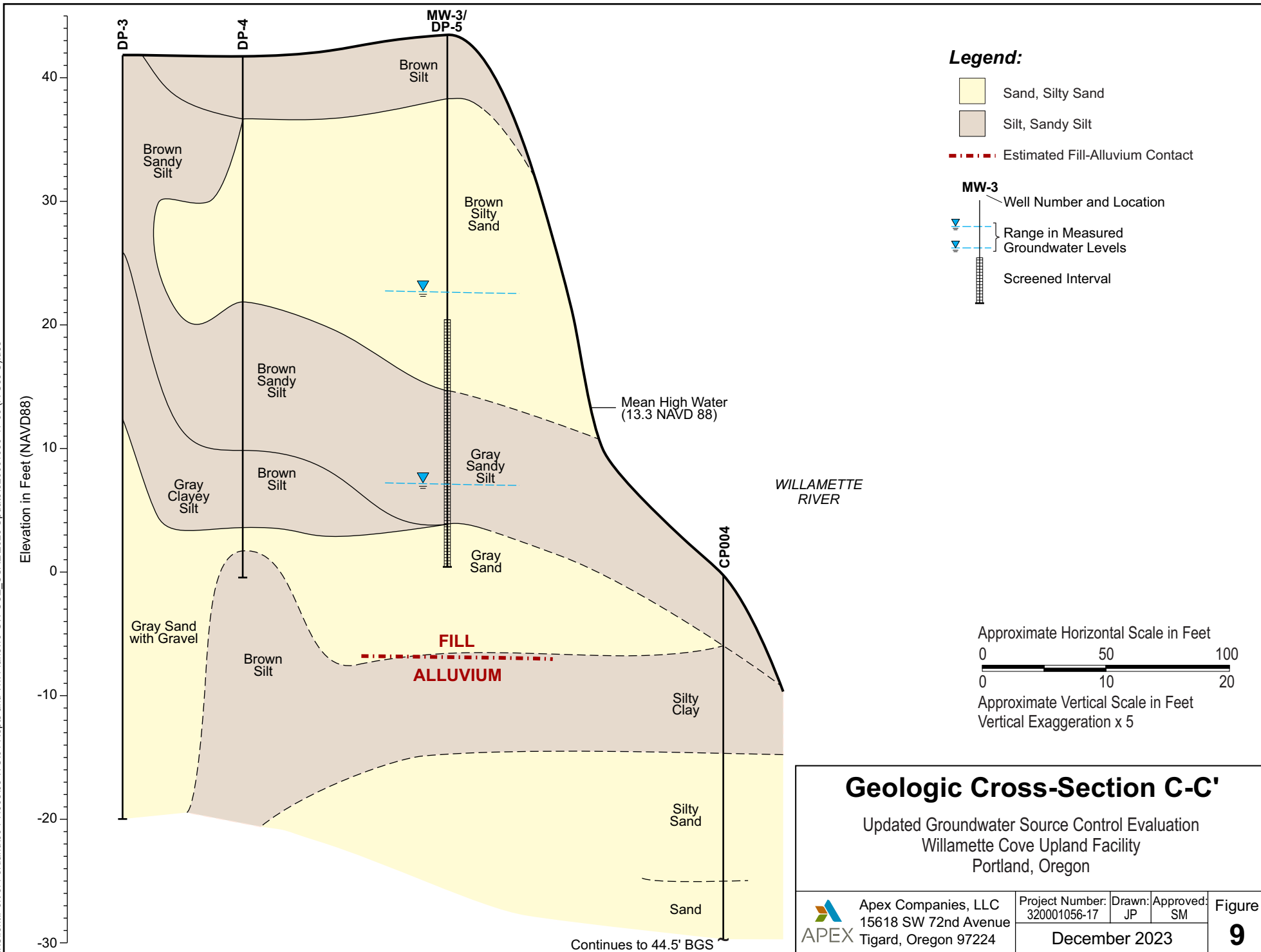
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Portland, Oregon

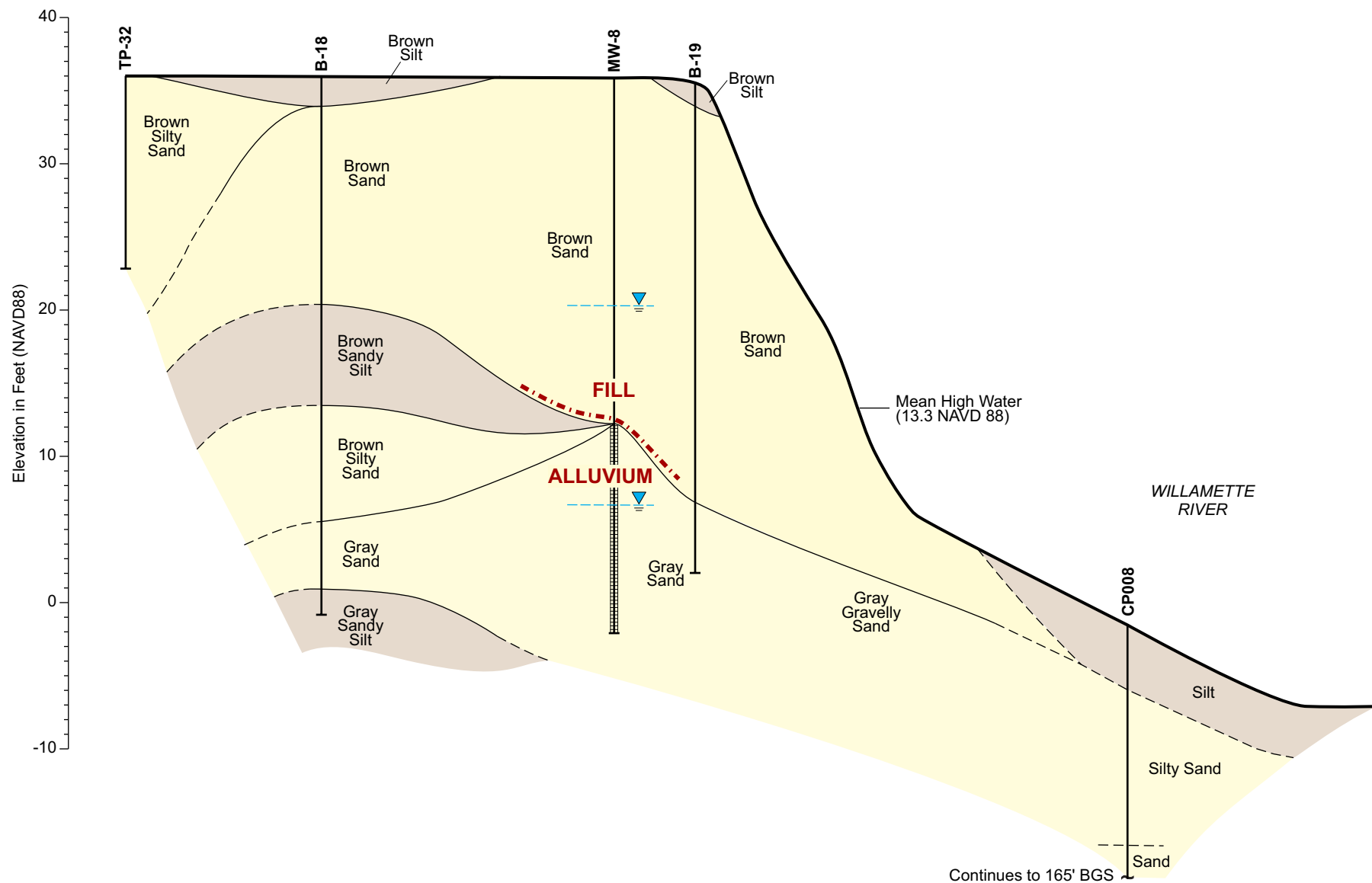


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December 2023			

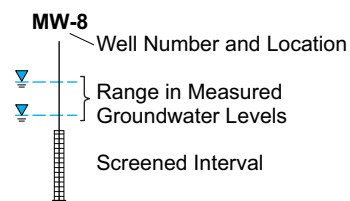






Legend:

- Sand, Silty Sand
- Silt, Sandy Silt
- Estimated Fill-Alluvium Contact



Approximate Horizontal Scale in Feet

0 50 100

0 10 20

Approximate Vertical Scale in Feet

Vertical Exaggeration x 5

Geologic Cross-Section D-D'

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



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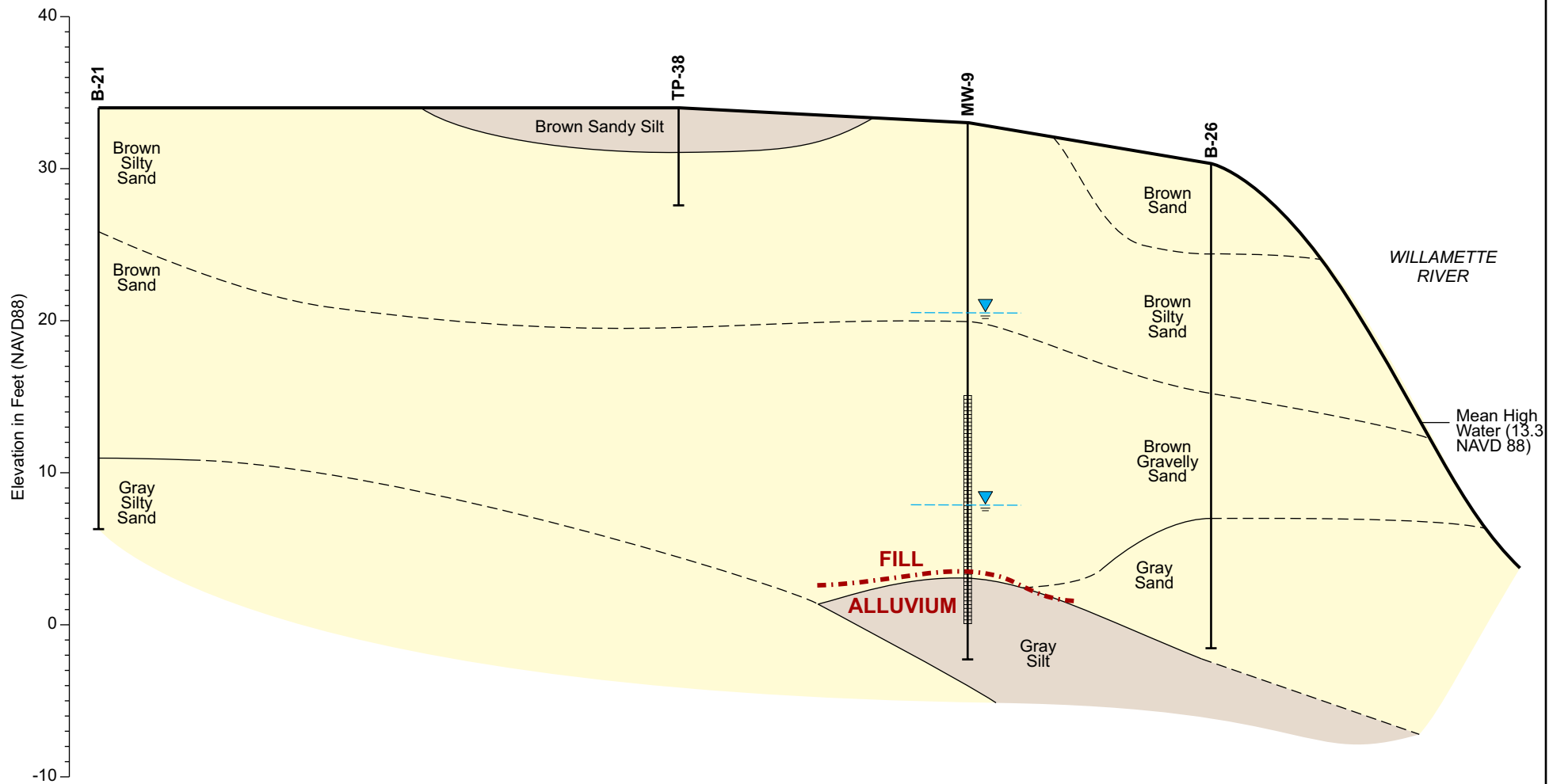
Project Number:
320001056-17

Drawn:
JP

Approved:
SM

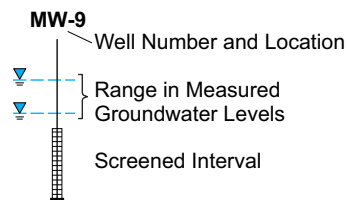
December 2023

Figure
10



Legend:

- Sand, Silty Sand
- Silt, Sandy Silt
- Estimated Fill-Alluvium Contact



Approximate Horizontal Scale in Feet
 0 50 100
 0 10 20

Approximate Vertical Scale in Feet
 Vertical Exaggeration x 5

Geologic Cross-Section E-E'

Updated Groundwater Source Control Evaluation
 Willamette Cove Upland Facility
 Portland, Oregon

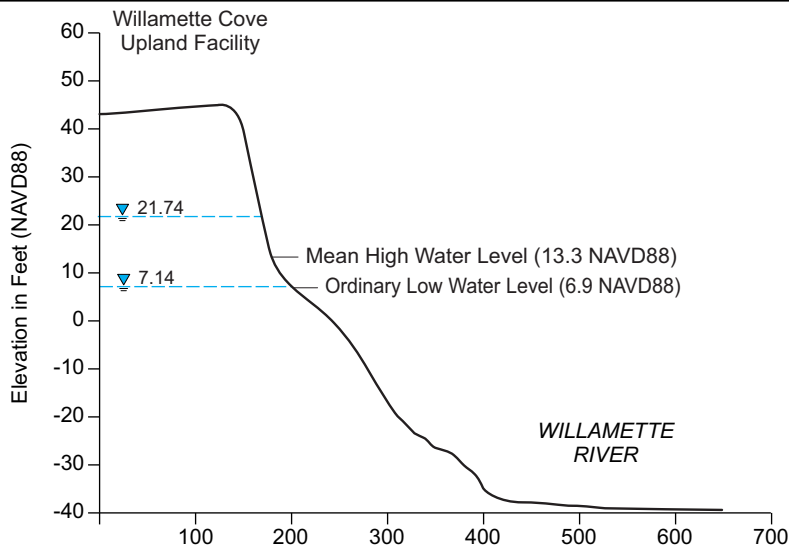


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Project Number: 320001056-17	Drawn: JP	Approved: SM	Figure 11
December 2023			

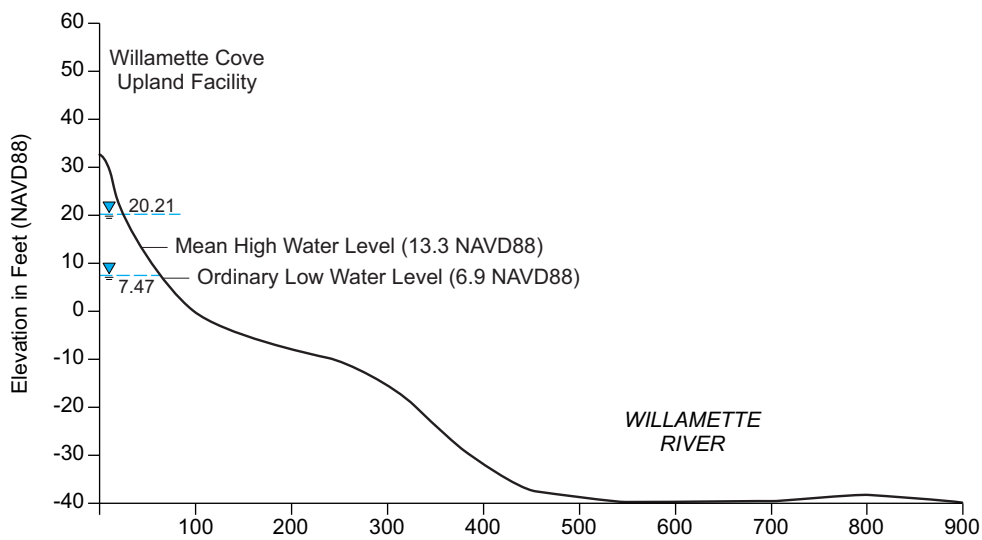
I:\Client\Port of Portland\00-PH905\05 WC\01 Repts and Wk Plans\19 GW SCE_SCAE\2023 Update\320001056-17 12 (Riverbank X-Sections).des

Riverbank Profile 1-1'

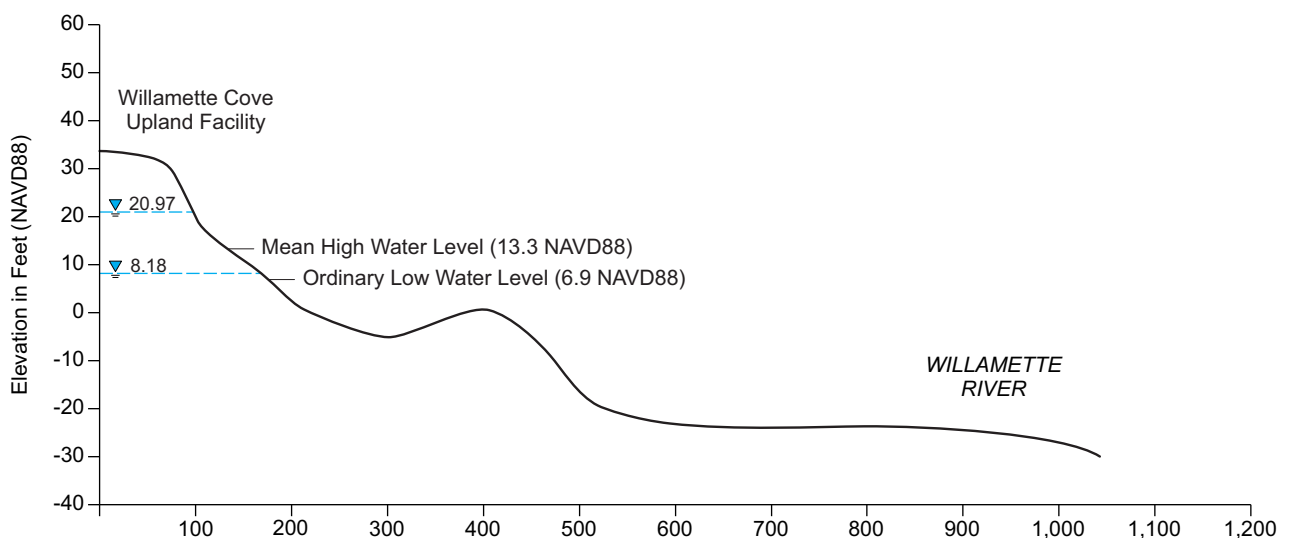


Approximate Horizontal Scale in Feet
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0 40 80
Approximate Vertical Scale in Feet
Vertical Exaggeration x 5

Riverbank Profile 2-2'



Riverbank Profile 3-3'



Legend:

Measured High and Low
Groundwater Elevation

Riverbank Profiles

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
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December 2023

Figure
12

Legend:

MW-1

Monitoring Well Location

OF49

City of Portland Outfall

WR-189

Potential Historical Outfall (Inactive)

2008 and 2015 Removal Action Areas

Upper Source Control Screening Boundary (Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)

Ordinary High Water Line (20.1NAVD88)

Mean High Water Line (13.3NAVD88)

Ordinary Low Water Line (6.9NAVD88)

-2 Columbia River Datum (3.2NAVD88)

Bathymetric Change

Feet NAVD

10 to 50.3

Shoaling

5.0 to 9.99

2.0 to 4.99

1.0 to 1.99

0.5 to 0.99

0.25 to 0.49

-0.25 to 0.24

No Change

-0.5 to -0.26

-1.0 to -0.51

-2.0 to -1.01

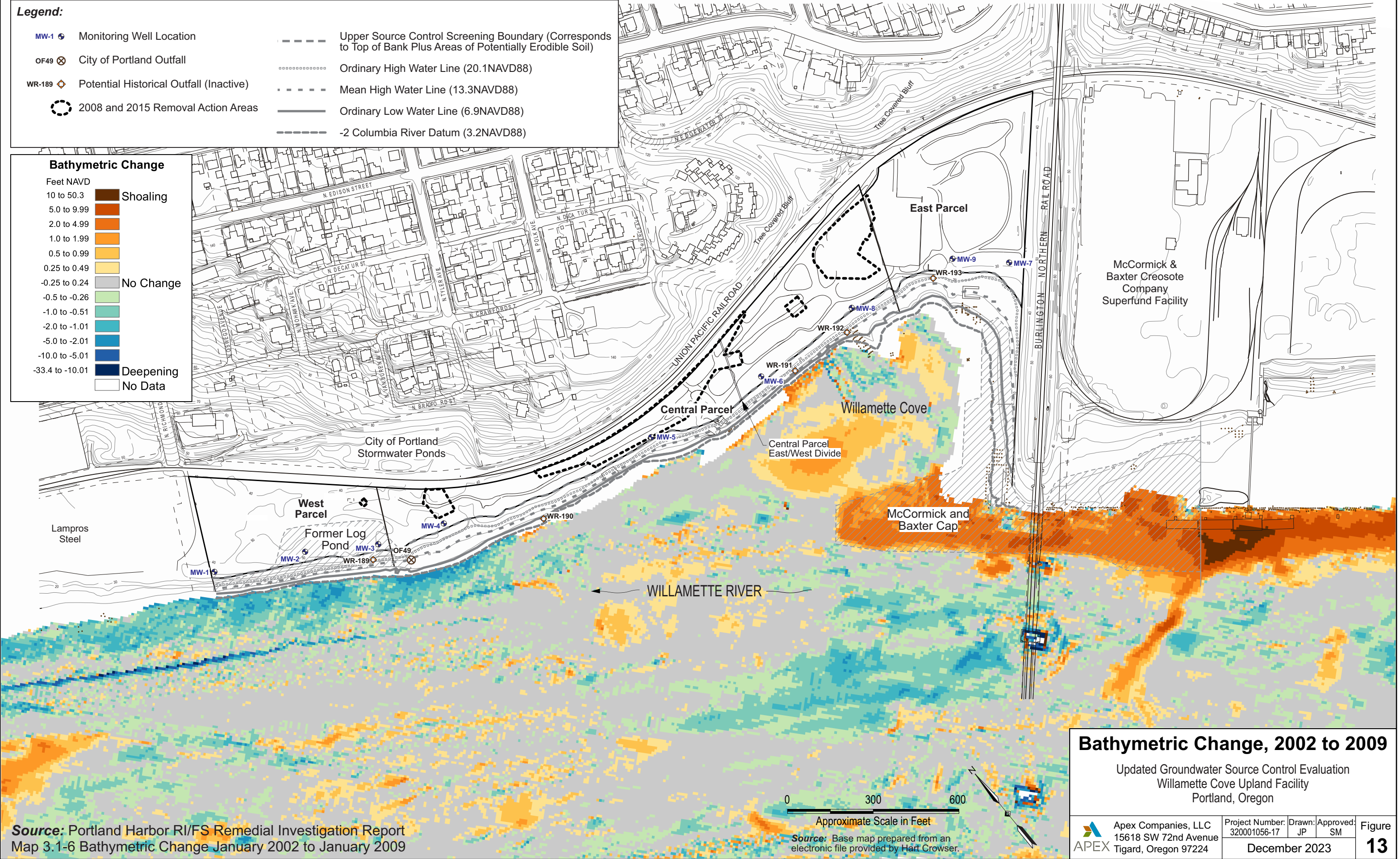
-5.0 to -2.01

-10.0 to -5.01

-33.4 to -10.01

Deepening

No Data



Bathymetric Change, 2002 to 2009

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:	320001056-17	Drawn:	JP	Approved:	SM
December 2023					

Figure
13

I:\Client\Port of Portland\00-PR\90505 WC\01 Repts and Wk Plans\19 GW SCE SCAE\2023 Update\320001056-17 13 (Bathymetric Change, 2002 to 2009).des

Legend:

MW-1 Monitoring Well Location

OF49 City of Portland Outfall

WR-189 Potential Historical Outfall (Inactive)

2008 and 2015 Removal Action Areas

Upper Source Control Screening Boundary (Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)

Ordinary High Water Line (20.1NAVD88)

Mean High Water Line (13.3NAVD88)

Ordinary Low Water Line (6.9NAVD88)

-2 Columbia River Datum (3.2NAVD88)

Percent Fines

0 - 20%

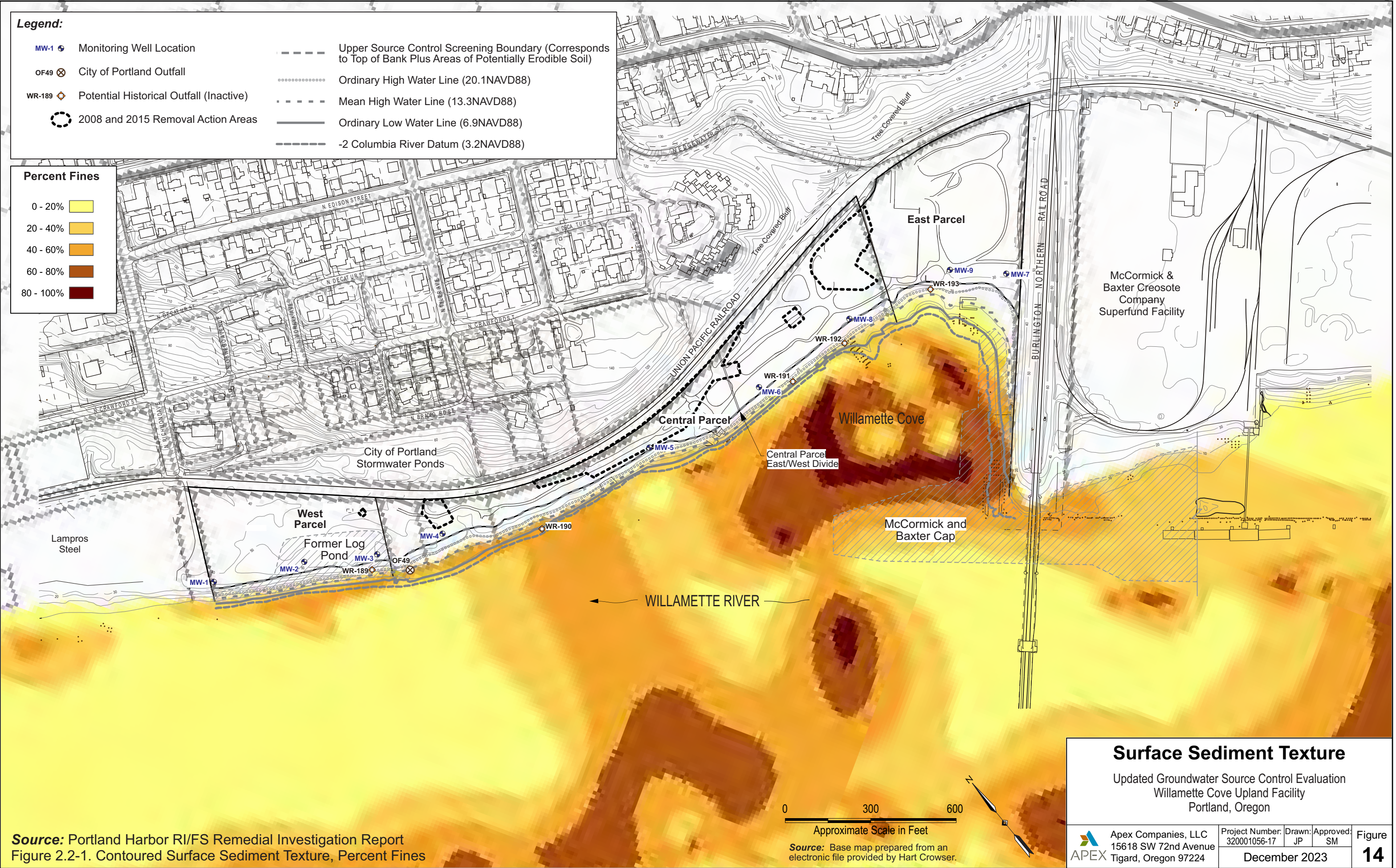
20 - 40%

40 - 60%

60 - 80%

80 - 100%

I:\Client\Port of Portland\00-PT905\05 WC\01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 14 (Surface Sediment Texture).docx



Source: Portland Harbor RI/FS Remedial Investigation Report
Figure 2.2-1. Contoured Surface Sediment Texture, Percent Fines

0 300 600
Approximate Scale in Feet

Source: Base map prepared from an electronic file provided by Hart Crowser.

Surface Sediment Texture

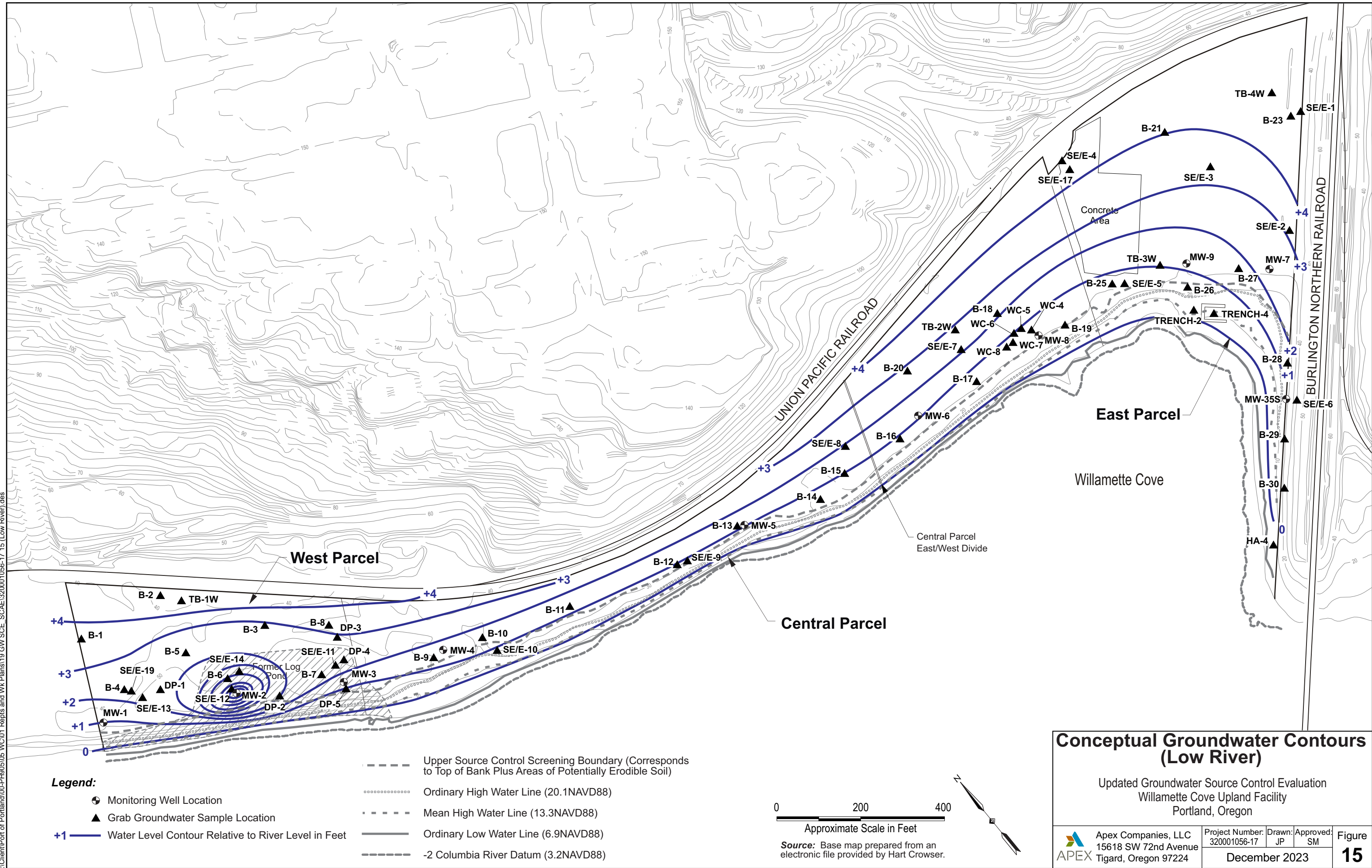
Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

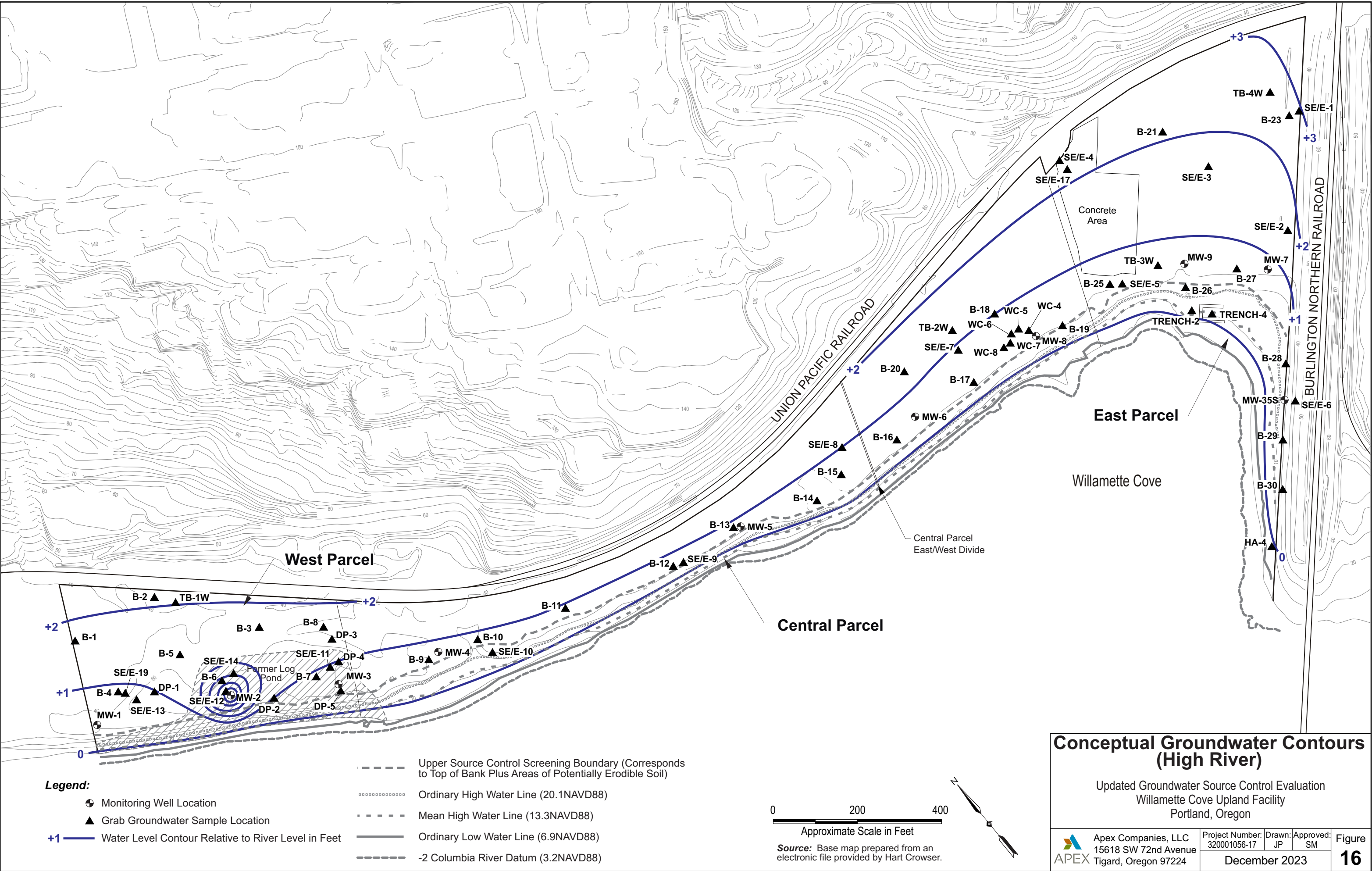
Project Number:	320001056-17	Drawn:	JP	Approved:	SM
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Figure
14

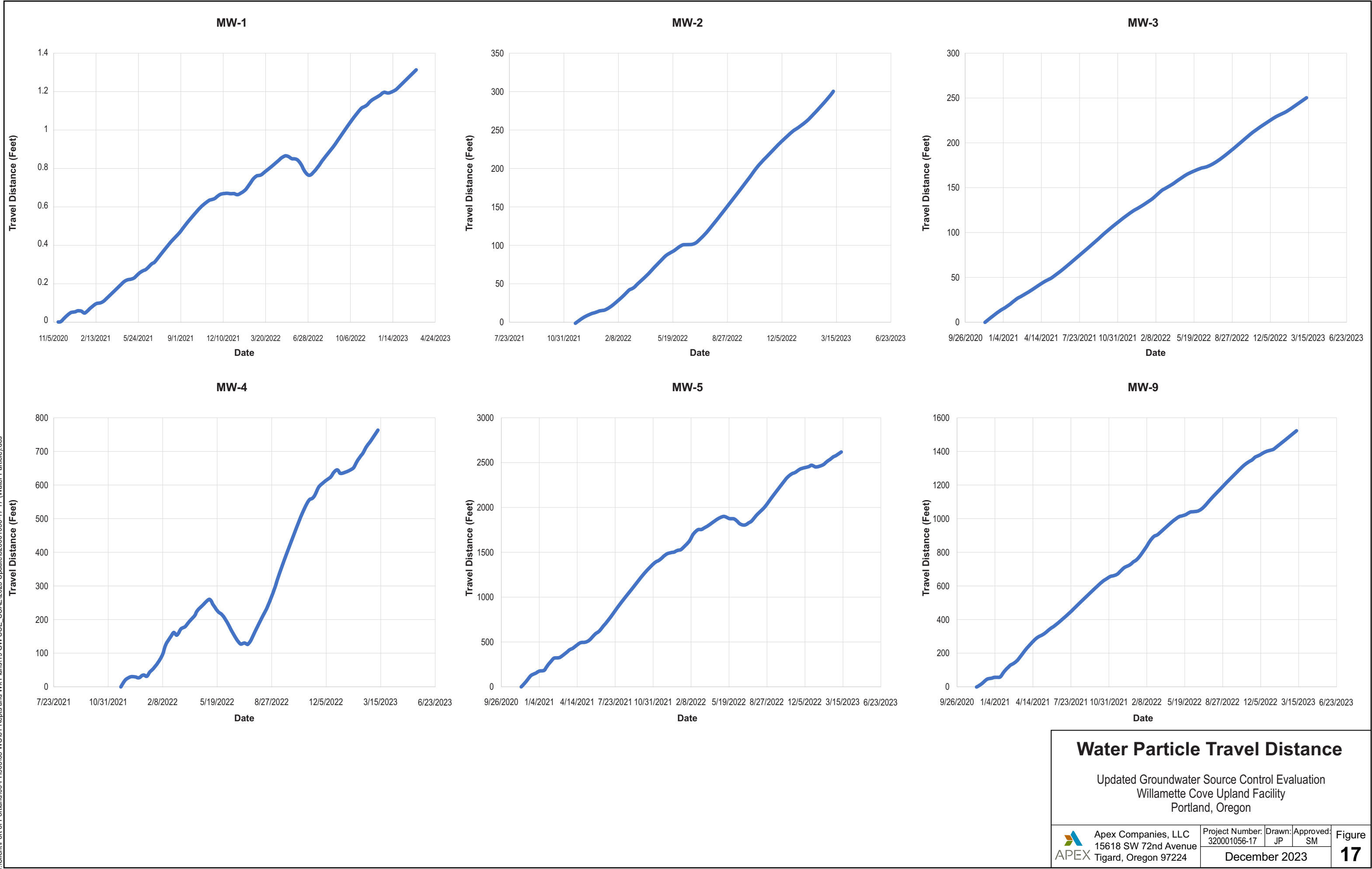
I:\Client\Port of Portland\00-PH90505 WC01 Repts and Wk Plans\19 GW SCE_SCAE\320001056-17 15 (Low River).des



I:\Client\Port of Portland\00-PH905\05 WC\01 Repts and Wk Plans\19 GW SCE SCAE\2023 Update\320001056-17 16 (High River).des

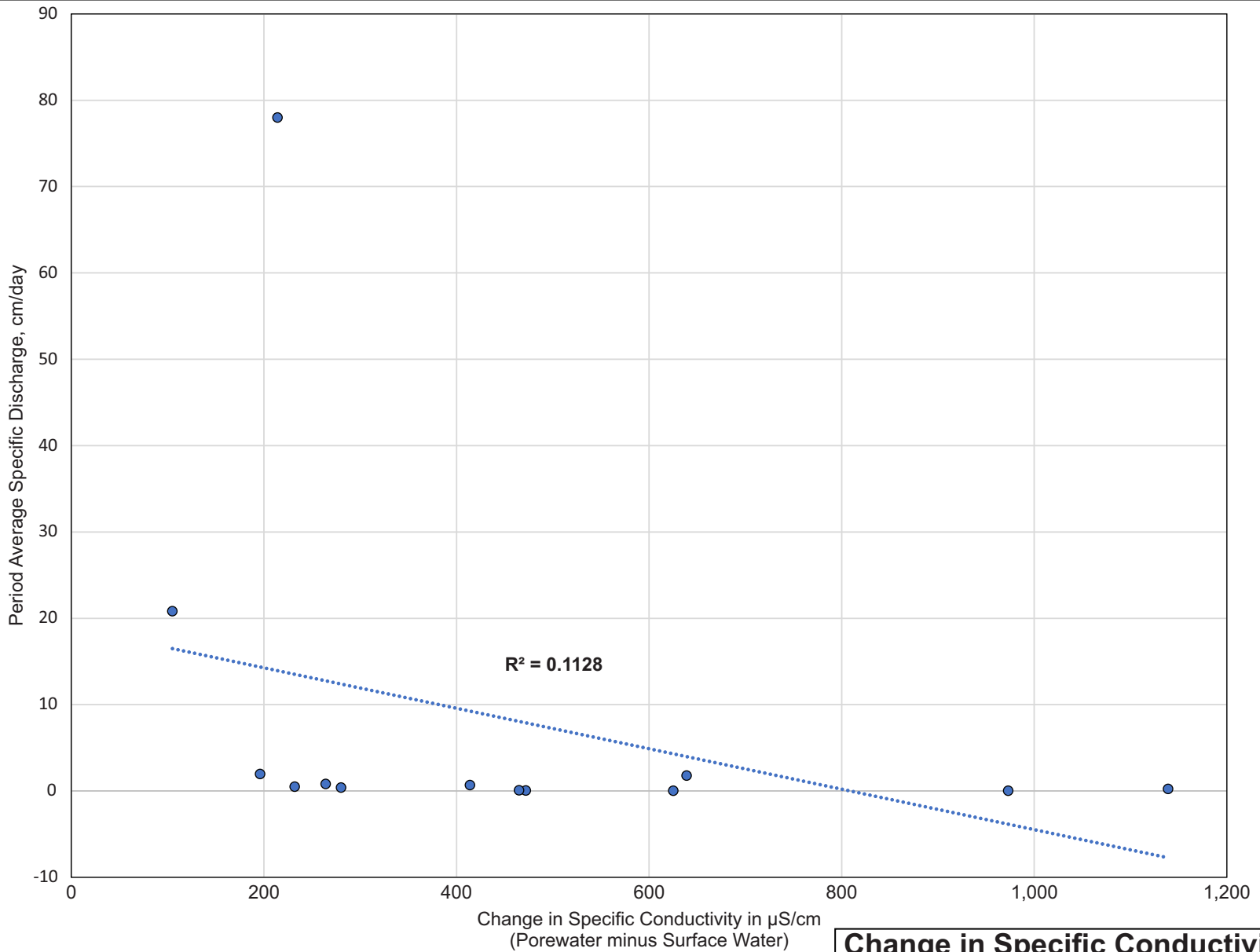


I:\Client\Port of Portland\00-PH905\05 WC\01 Repts and Wk Plans\19 GW SCE_SCAE\2023 Update\320001056-17 17 (Water Particle).des



Water Particle Travel Distance

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



Legend:

..... Best Fit Line

$R^2 = 0.1128$ Correlation Coefficient

**Change in Specific Conductivity Versus
Measured Groundwater Flux to River**

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

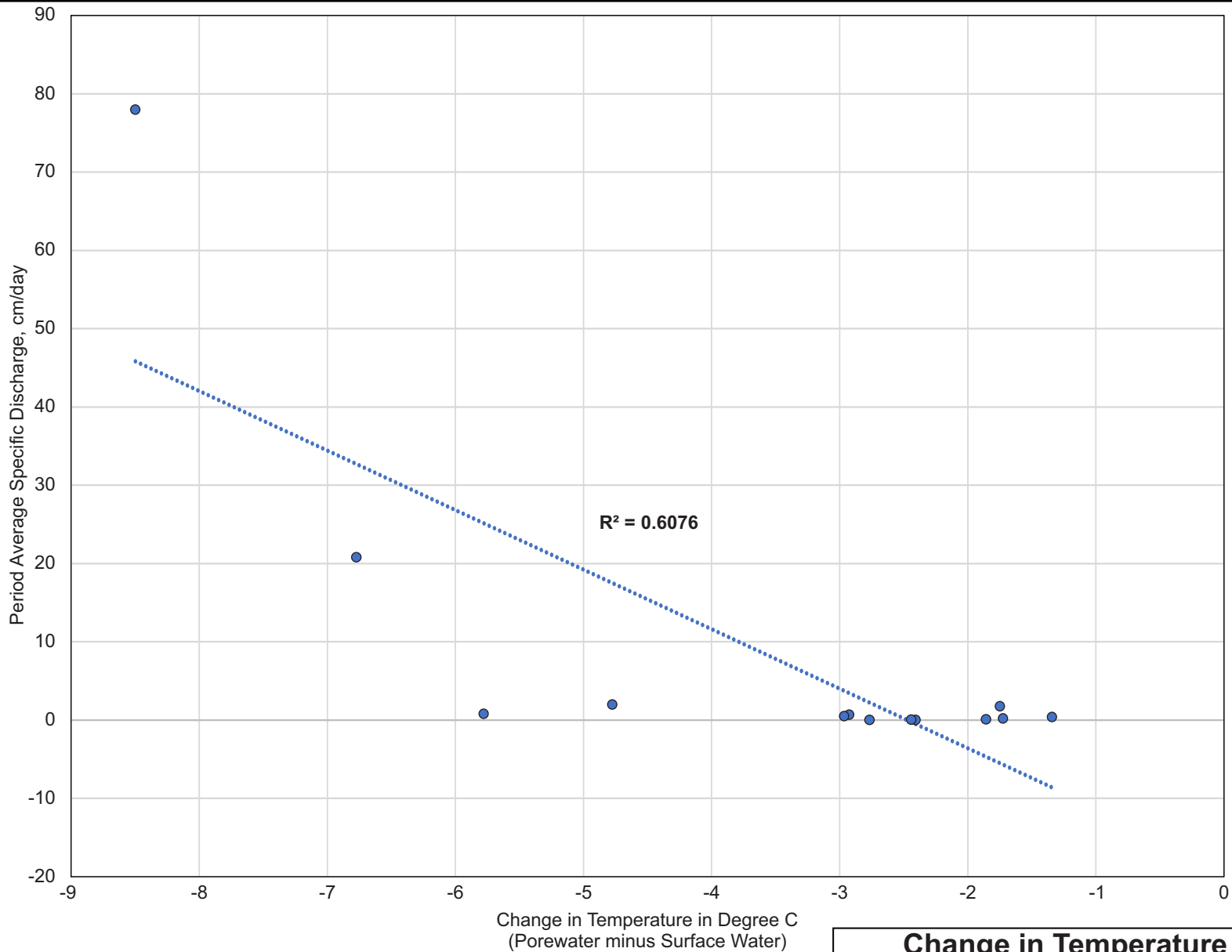
Project Number:
320001056-17

Drawn:
JP

Approved:
SM

December 2023

Figure
18



Legend:

..... Best Fit Line

$R^2 = 0.6076$ Correlation Coefficient

Change in Temperature Versus Measured Groundwater Flux to River

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:
320001056-17

Drawn:
JP

Approved:
SM

December 2023

Figure
19

I:\Client\Port of Portland\00-PI\905105 WC01 Repts and Wk Plans\19 GW SOE SCAE 2023 Update\320001056-17 20 (GW Flux to River).des

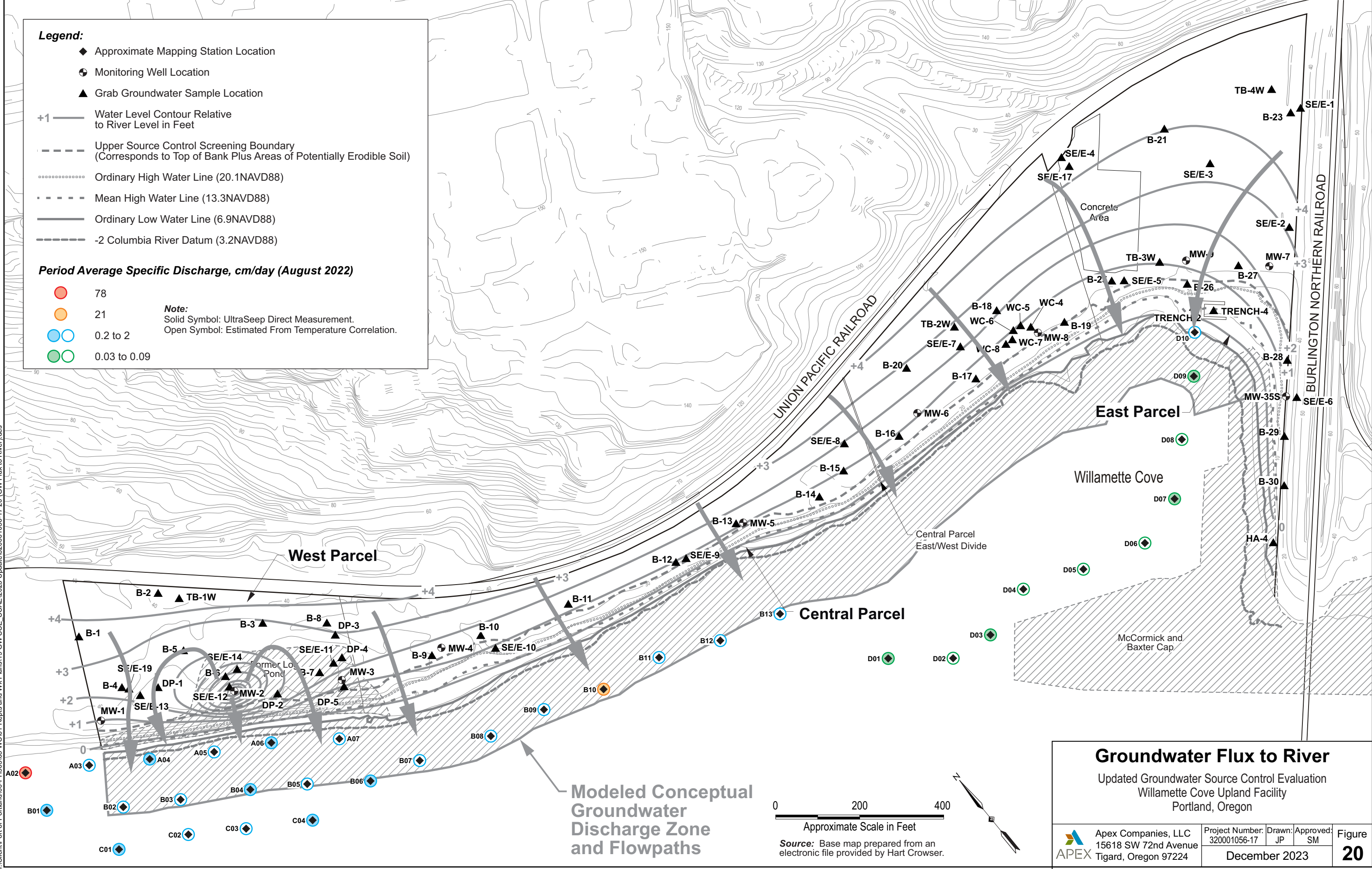
Legend:

- ◆ Approximate Mapping Station Location
- ⊕ Monitoring Well Location
- ▲ Grab Groundwater Sample Location
- +1 — Water Level Contour Relative to River Level in Feet
- - - Upper Source Control Screening Boundary (Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)
- Ordinary High Water Line (20.1NAVD88)
- . - . Mean High Water Line (13.3NAVD88)
- Ordinary Low Water Line (6.9NAVD88)
- - - -2 Columbia River Datum (3.2NAVD88)

Period Average Specific Discharge, cm/day (August 2022)

●	78
●	21
○	0.2 to 2
○	0.03 to 0.09

Note:
Solid Symbol: UltraSeep Direct Measurement.
Open Symbol: Estimated From Temperature Correlation.



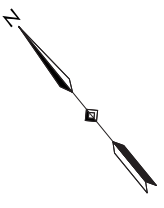
Groundwater Flux to River

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

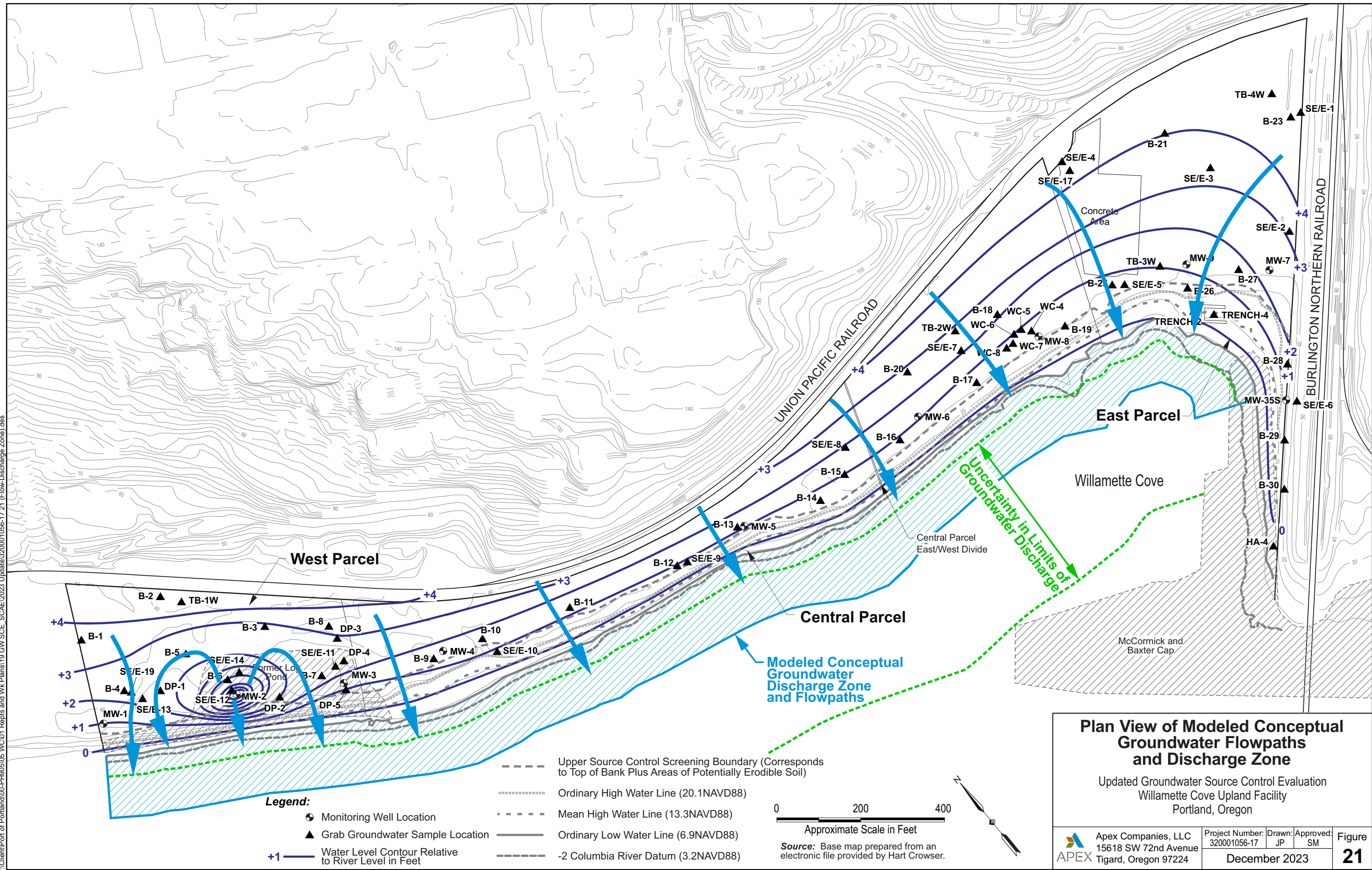
	Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number:	320001056-17	Drawn:	JP	Approved:	SM	Figure 20
		December 2023						

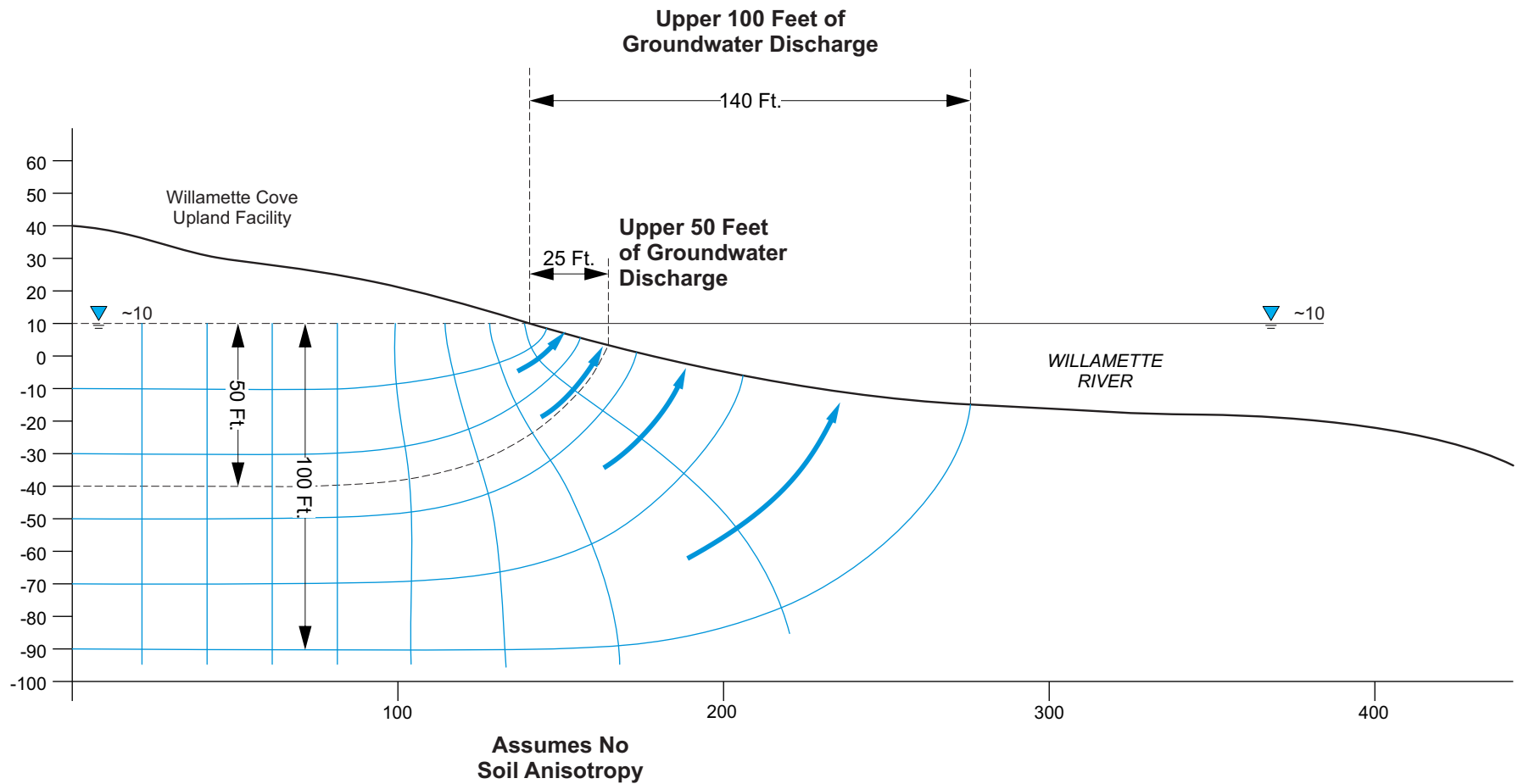
**Modeled Conceptual
Groundwater
Discharge Zone
and Flowpaths**

0 200 400
Approximate Scale in Feet
Source: Base map prepared from an
electronic file provided by Hart Crowser.



I:\Client\Port of Portland\00-PH90505 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 21 (Flow-Discharge Zone) ds

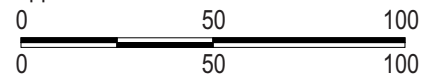




Legend:

▽ Groundwater Elevation

Approximate Horizontal Scale in Feet



Approximate Vertical Scale in Feet

Cross-Sectional View of Approximate Groundwater Flowpaths and Discharge Zone

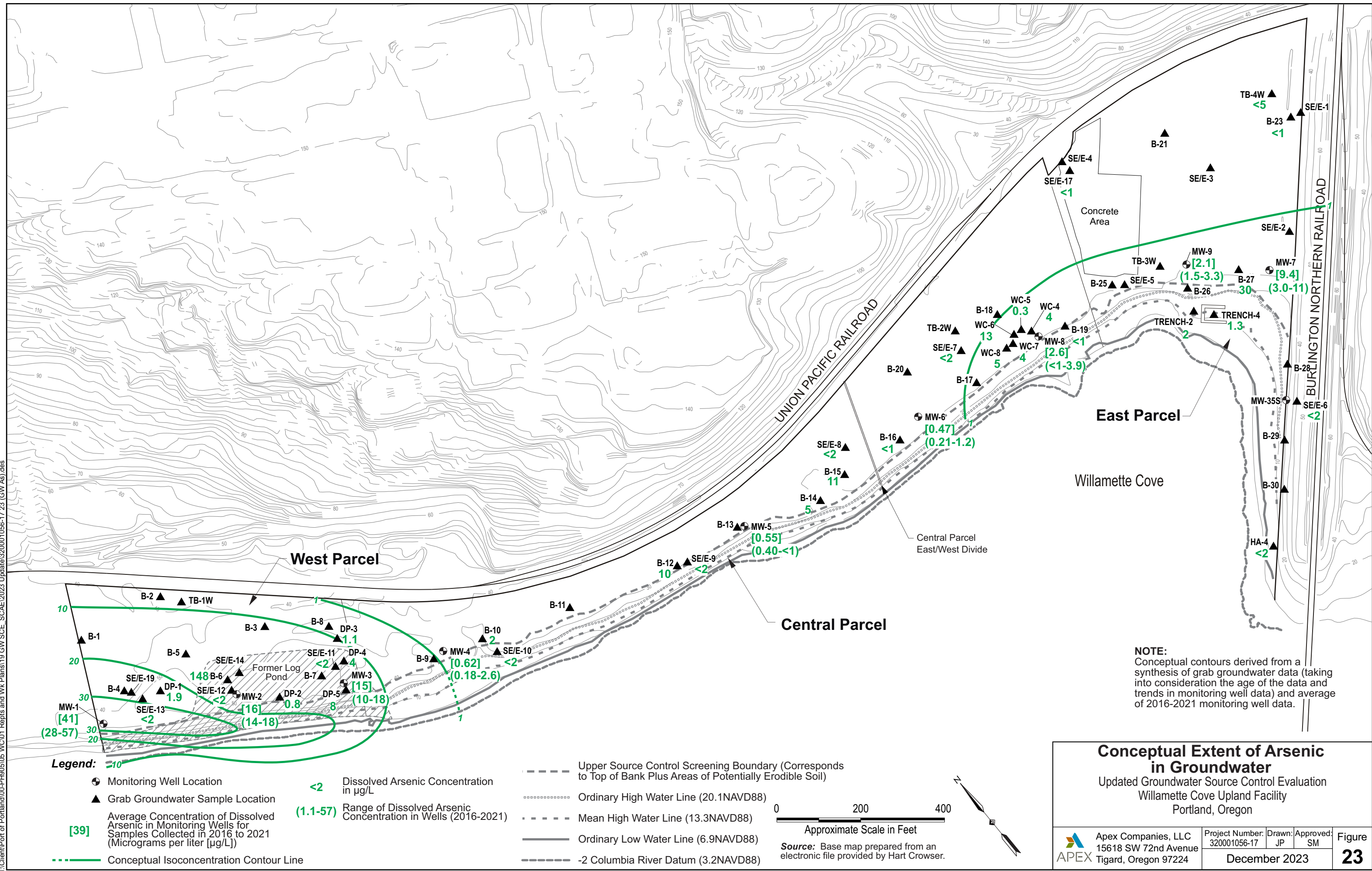
Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon



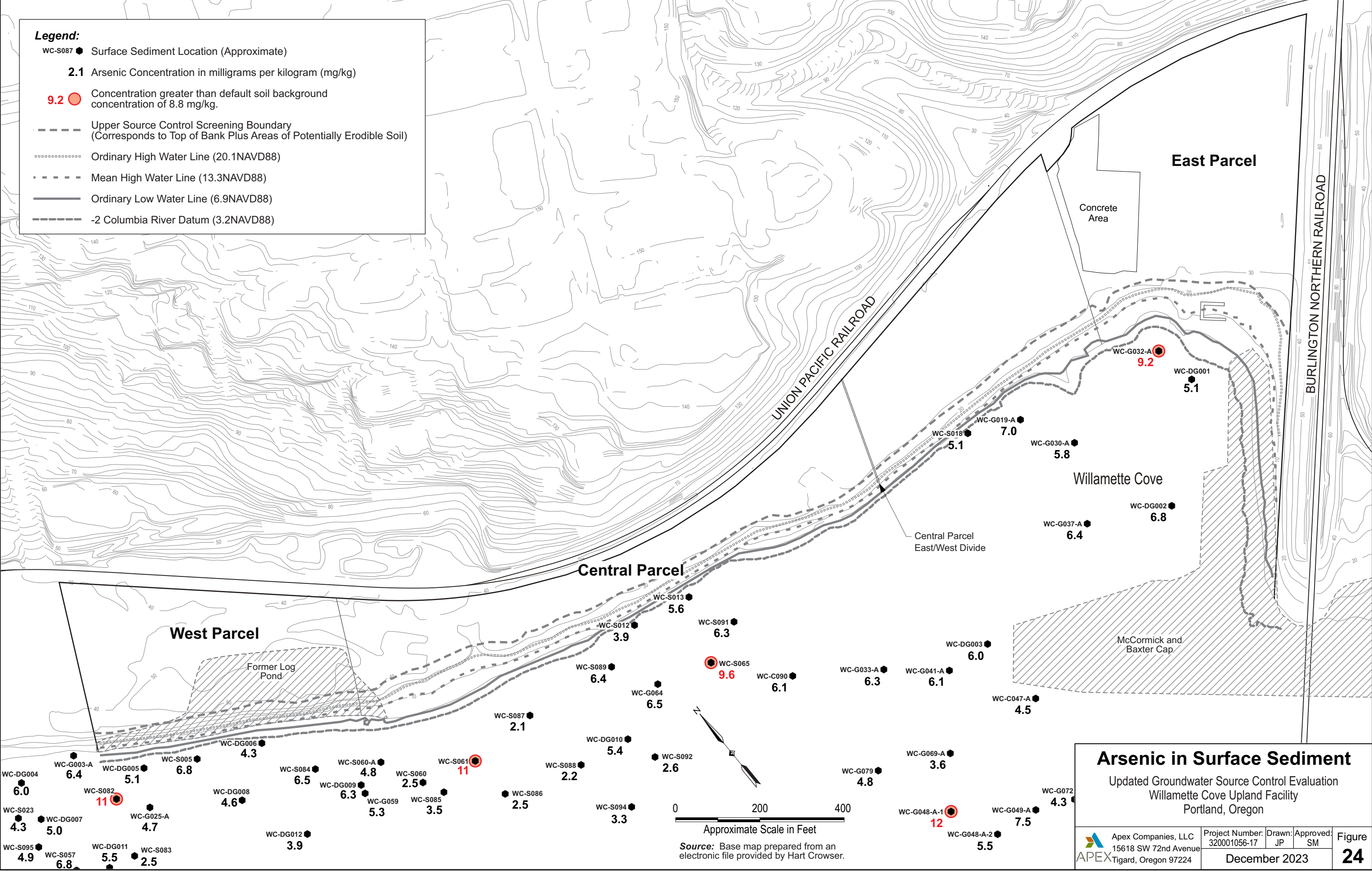
Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number: 320001056-17	Drawn: JP	Approved: SM	Figure 22
December 2023			

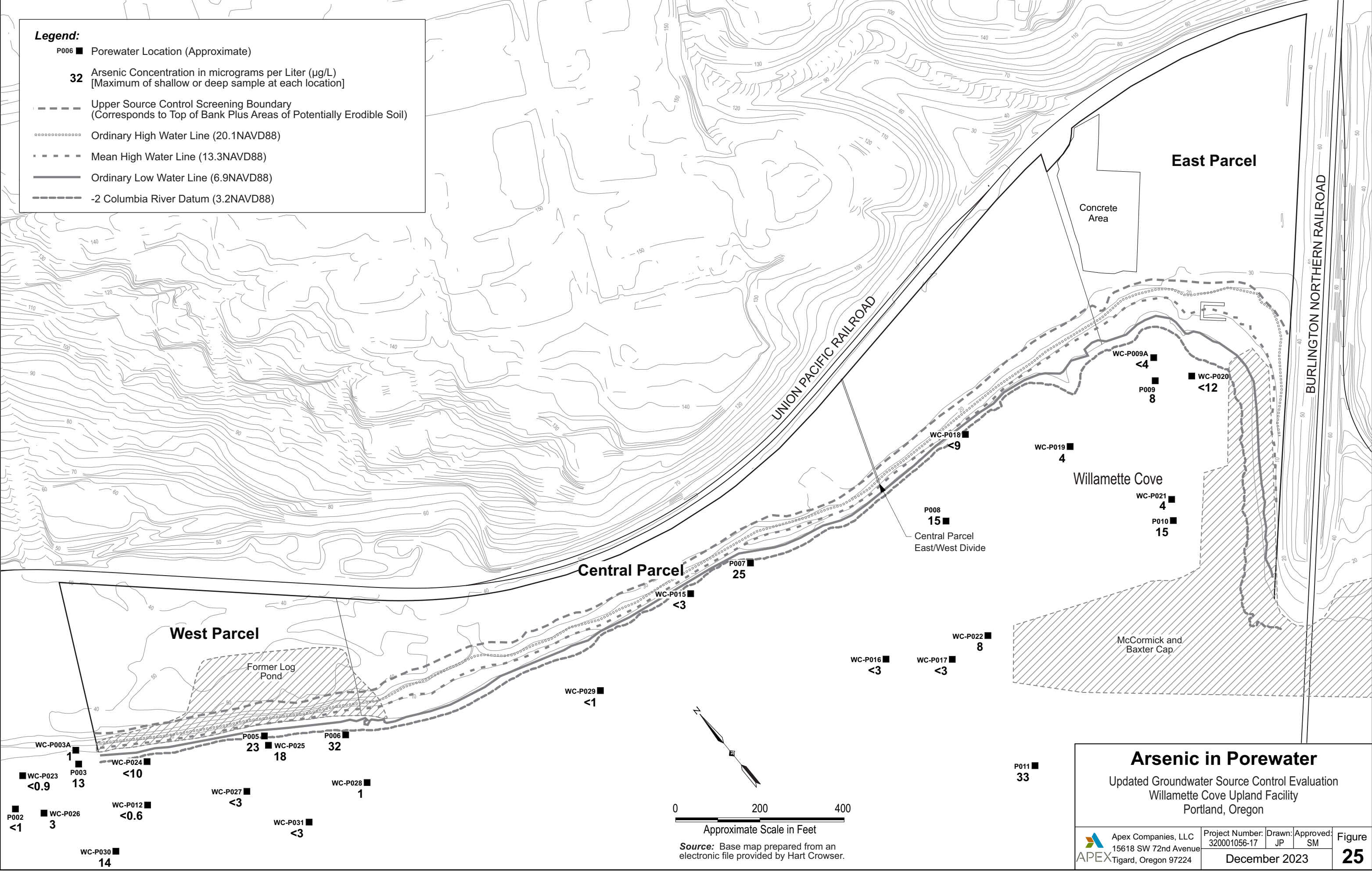
I:\Client\Port of Portland\00-PR\905105 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 23 (GW As) des



I:\Client\Port of Portland\00-PP\905105 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 24 (As in Surface Sed).des



I:\Client\Port of Portland\00-PI\905105 WC\01 Repts and Wk Plans\19 GW SCE_SCAE\2023 Update\320001056-17 25 (As in Porewater).des

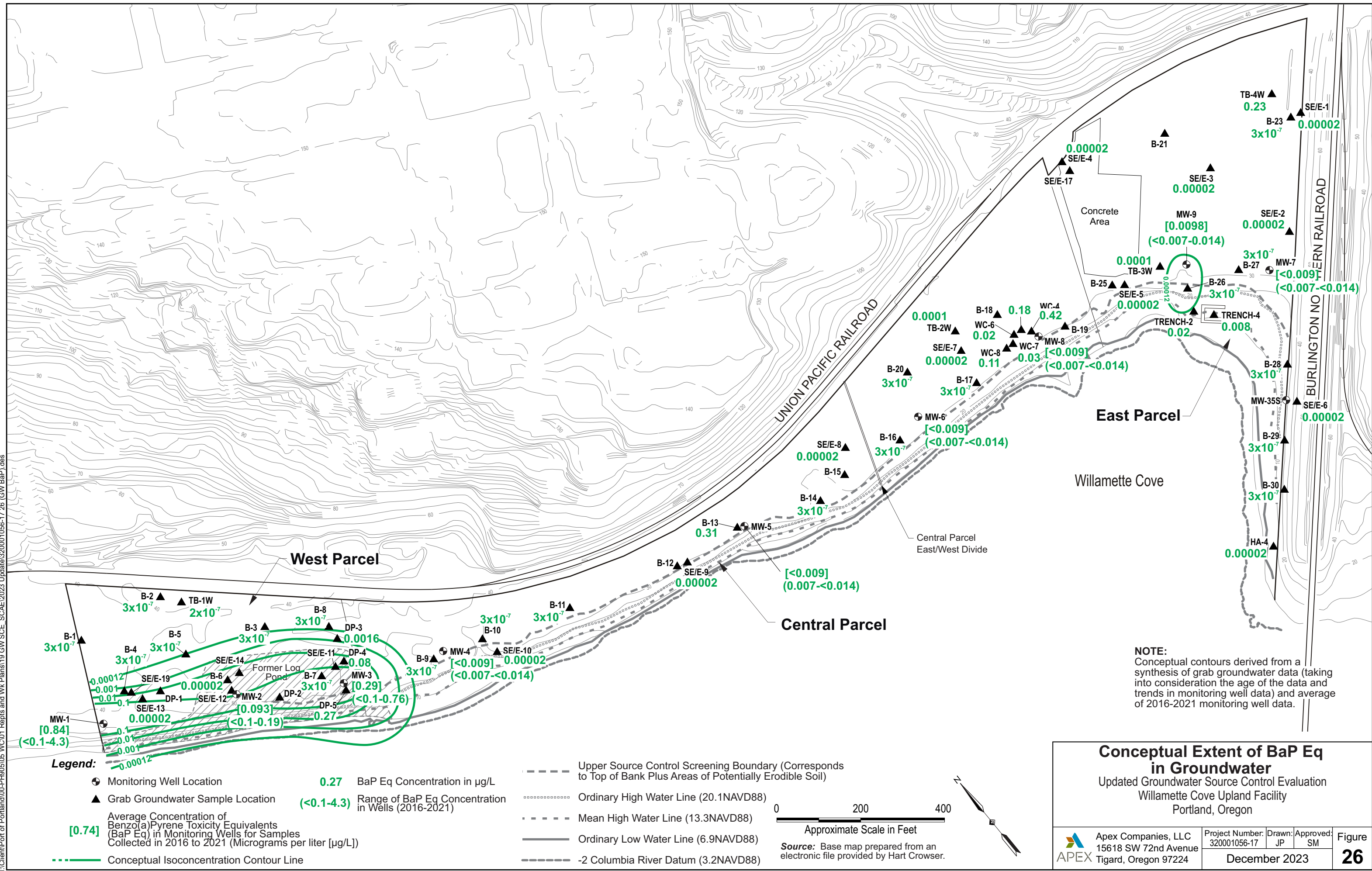


Arsenic in Porewater

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

 Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 320001056-17	Drawn: JP	Approved: SM	Figure 25
	December 2023			

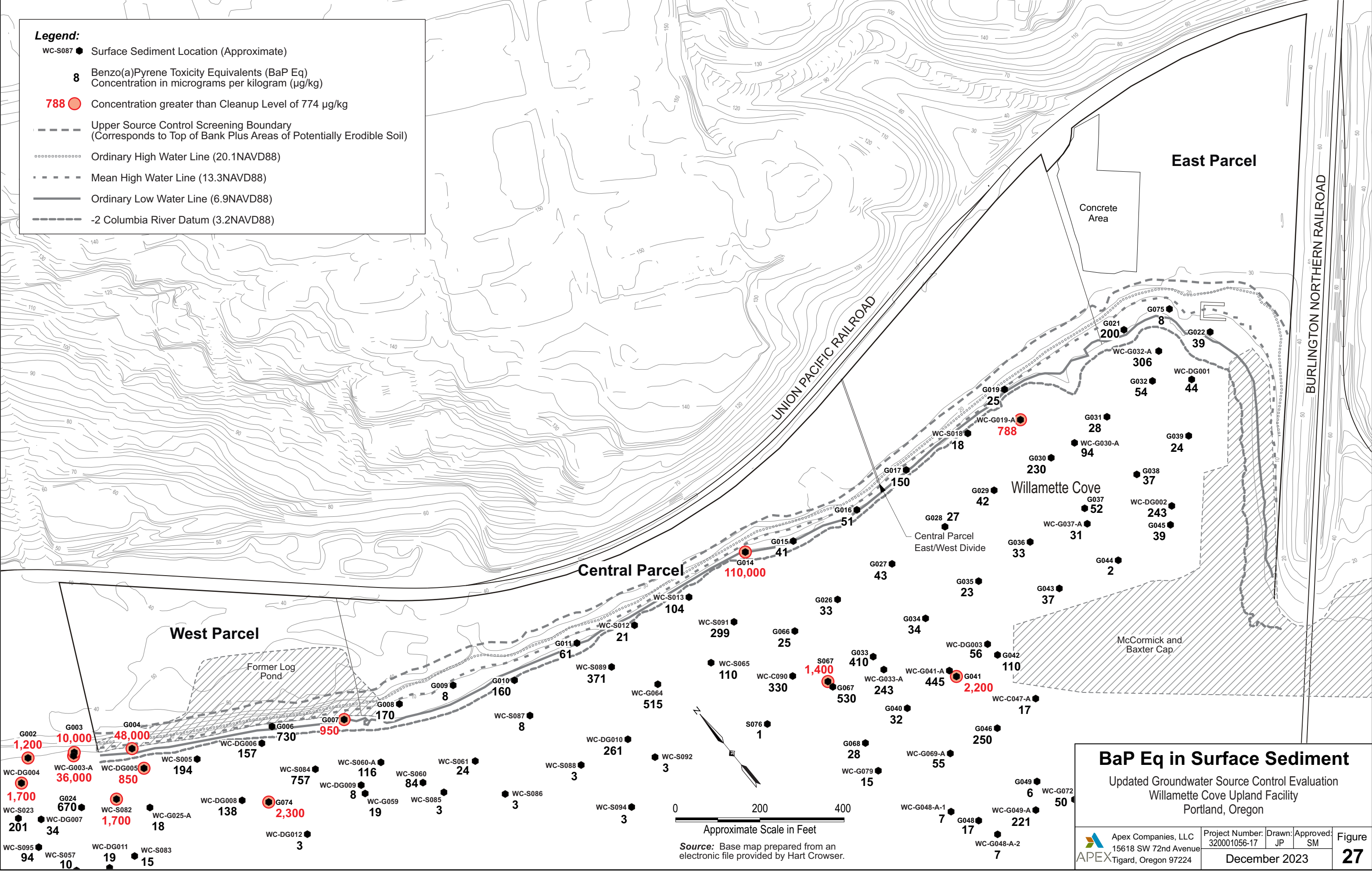
I:\Client\Port of Portland\00-PR905\05 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 26 (GW BaP).des



I:\Client\Port of Portland\00-PI\905105 WC01 Repts and Wk Plans\19 GW SOE SCAE 2023 Update\320001056-17 27 (BaP Eq in Surface Sed) .des

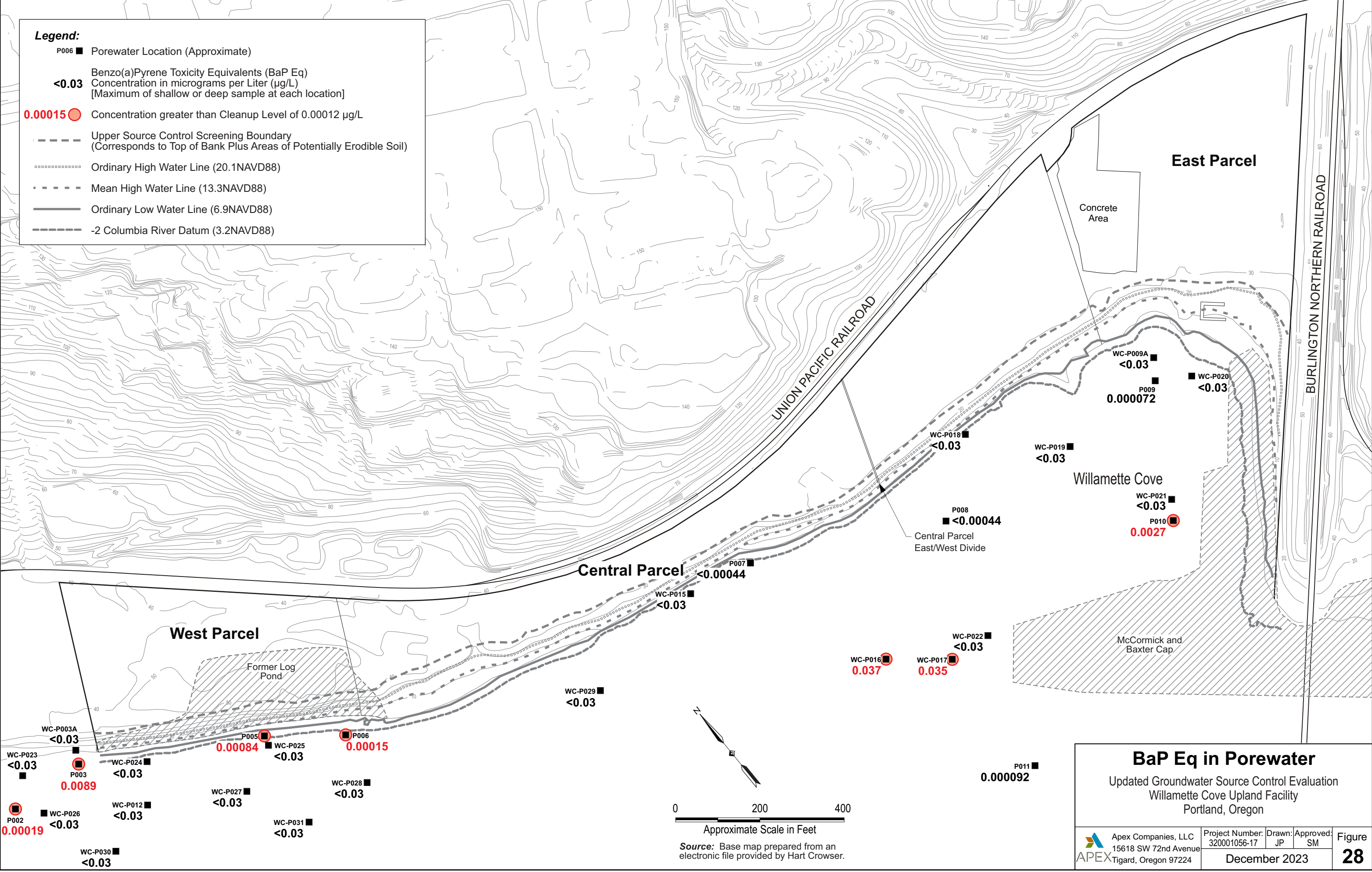
Legend:

- WC-S087 ● Surface Sediment Location (Approximate)
- 8 Benzo(a)Pyrene Toxicity Equivalents (BaP Eq)
Concentration in micrograms per kilogram (µg/kg)
- 788 ● Concentration greater than Cleanup Level of 774 µg/kg
- Upper Source Control Screening Boundary
(Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)
- Ordinary High Water Line (20.1NAVD88)
- - - - Mean High Water Line (13.3NAVD88)
- Ordinary Low Water Line (6.9NAVD88)
- - - - -2 Columbia River Datum (3.2NAVD88)



Source: Base map prepared from an electronic file provided by Hart Crowser.

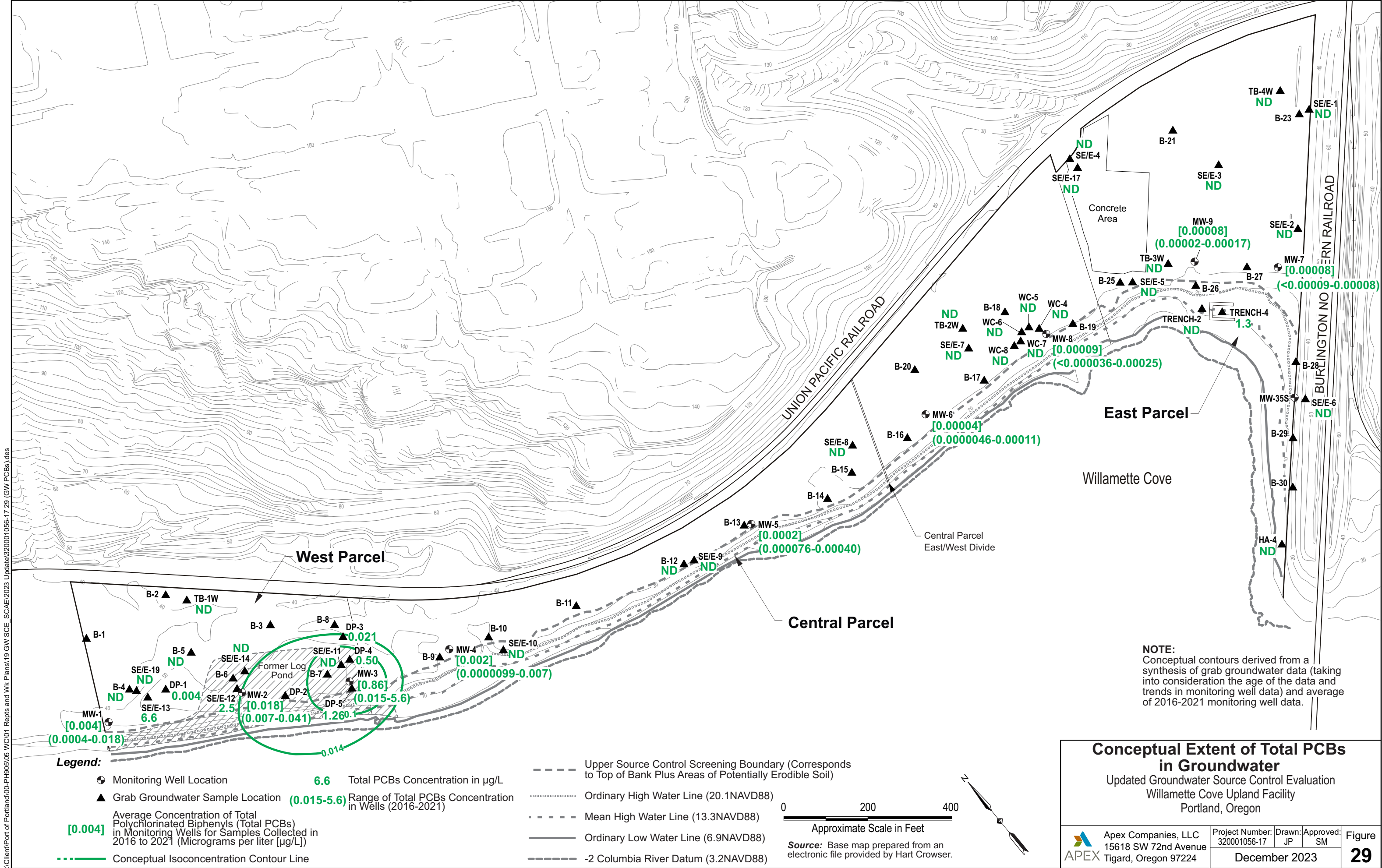
I:\Client\Port of Portland\00-PI\905105 WC\01 Repts and Wk Plans\19 GW SCE SCAE\2023 Update\320001056-17 28 (BaP Eq in Porewater) des



BaP Eq in Porewater

Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

 Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 320001056-17	Drawn: JP	Approved: SM	Figure 28
	December 2023			

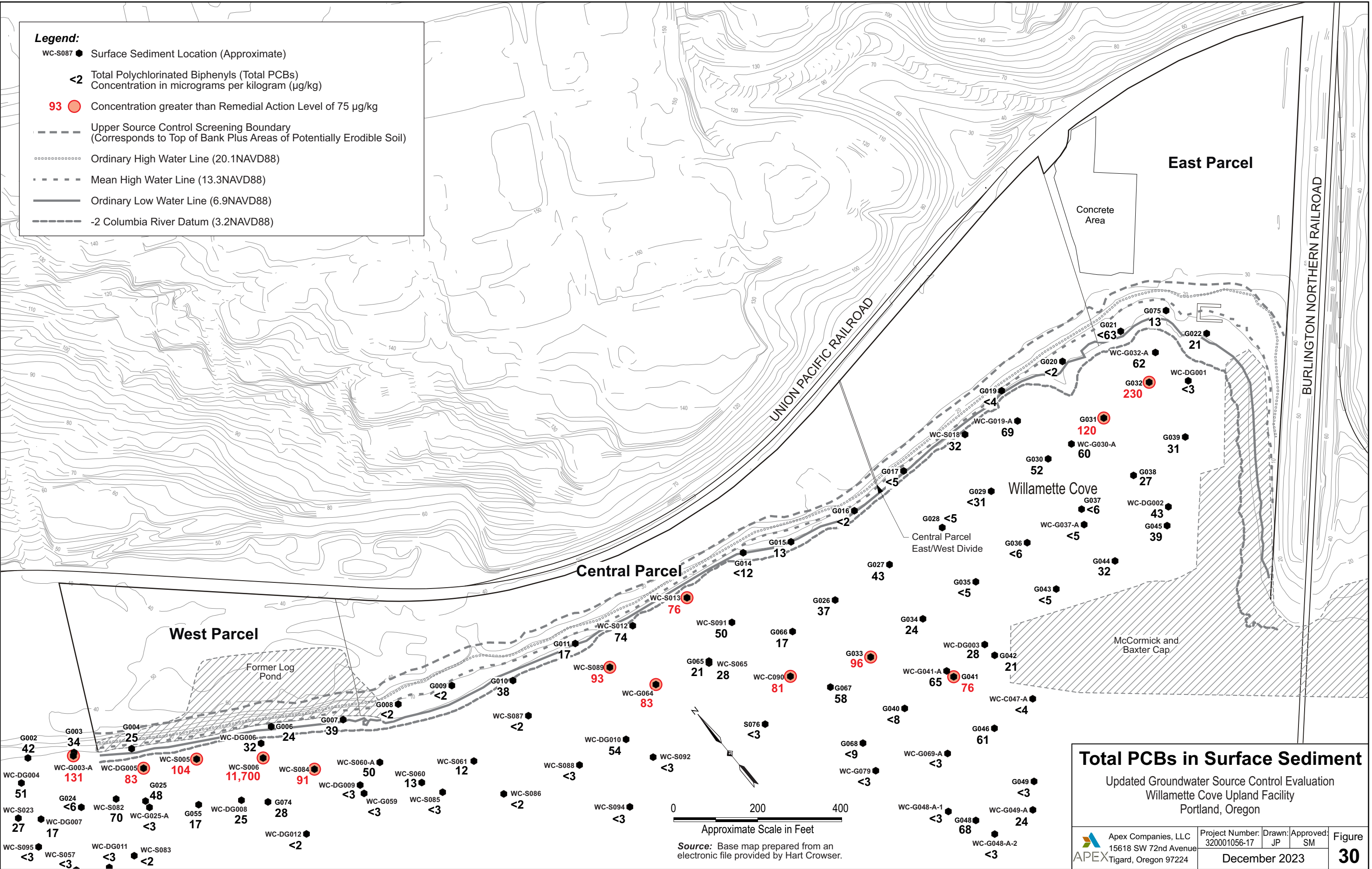


I:\Client\Port of Portland\00-PI\905105 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 29 (GW PCBs).des

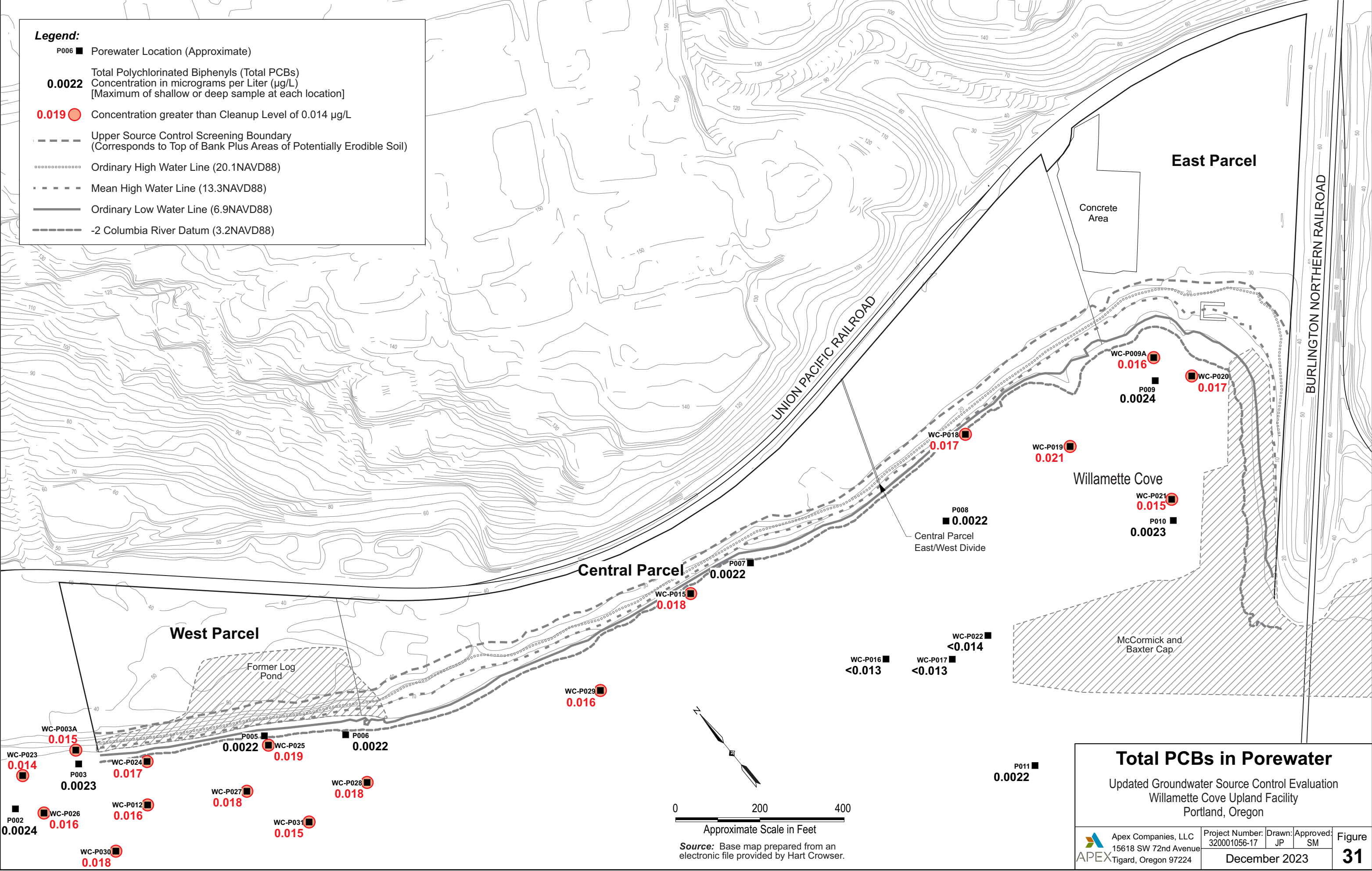
I:\Client\Port of Portland\00-PP\905105 WC01 Repts and Wk Plans\19 GW SOE SCAE 2023 Update\320001056-17 30 (Total PCBs in Surface Sed) .des

Legend:

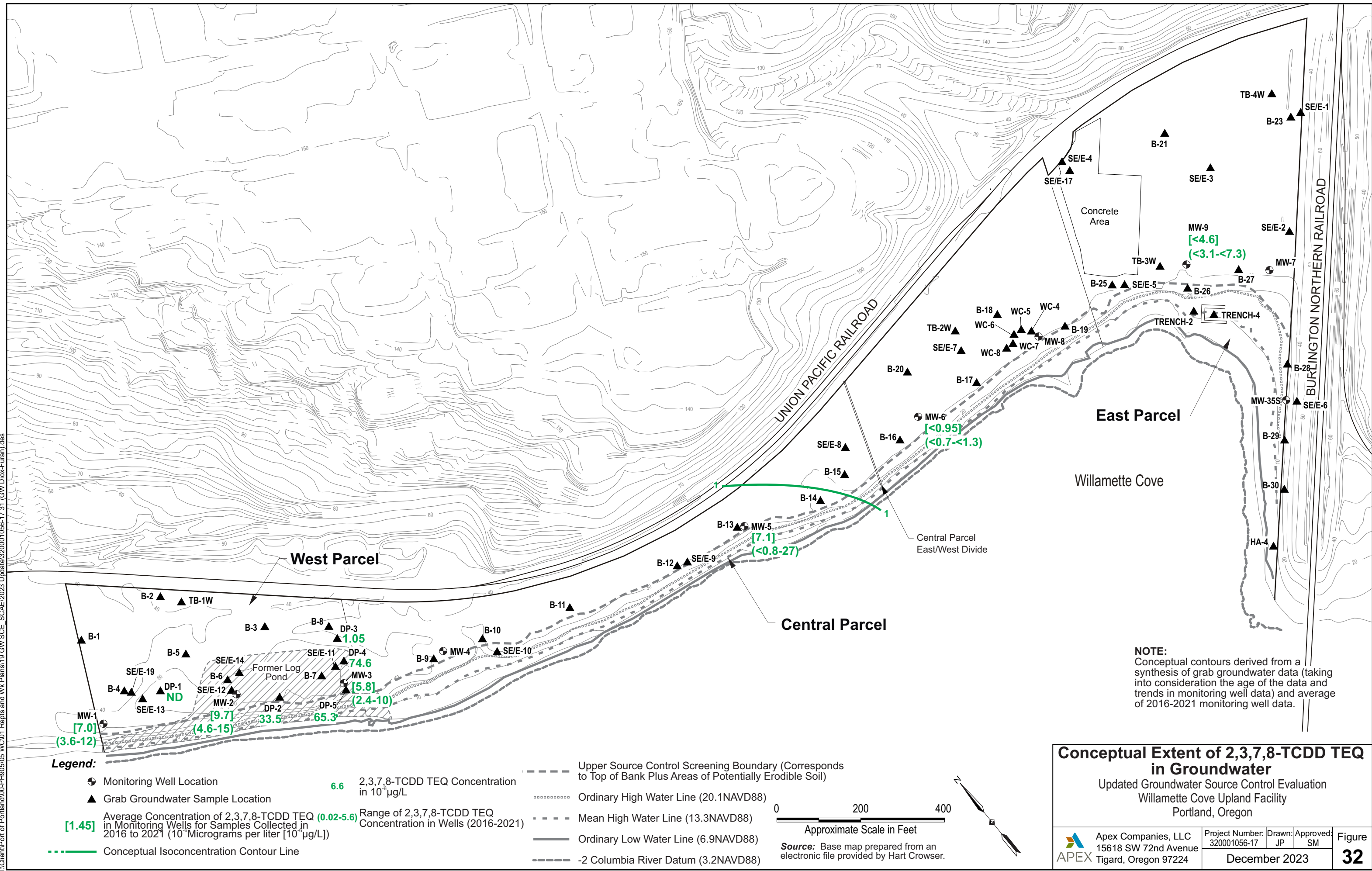
- WC-S087 ● Surface Sediment Location (Approximate)
- <2 Total Polychlorinated Biphenyls (Total PCBs)
Concentration in micrograms per kilogram (µg/kg)
- 93 ● Concentration greater than Remedial Action Level of 75 µg/kg
- Upper Source Control Screening Boundary
(Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)
- Ordinary High Water Line (20.1NAVD88)
- - - - Mean High Water Line (13.3NAVD88)
- Ordinary Low Water Line (6.9NAVD88)
- -2 Columbia River Datum (3.2NAVD88)



I:\Client\Port of Portland\00-PI\905105 WC\01 Repts and Wk Plans\19 GW SCE SCAE\2023 Update\320001056-17 31 (Total PCBs in Porewater).des



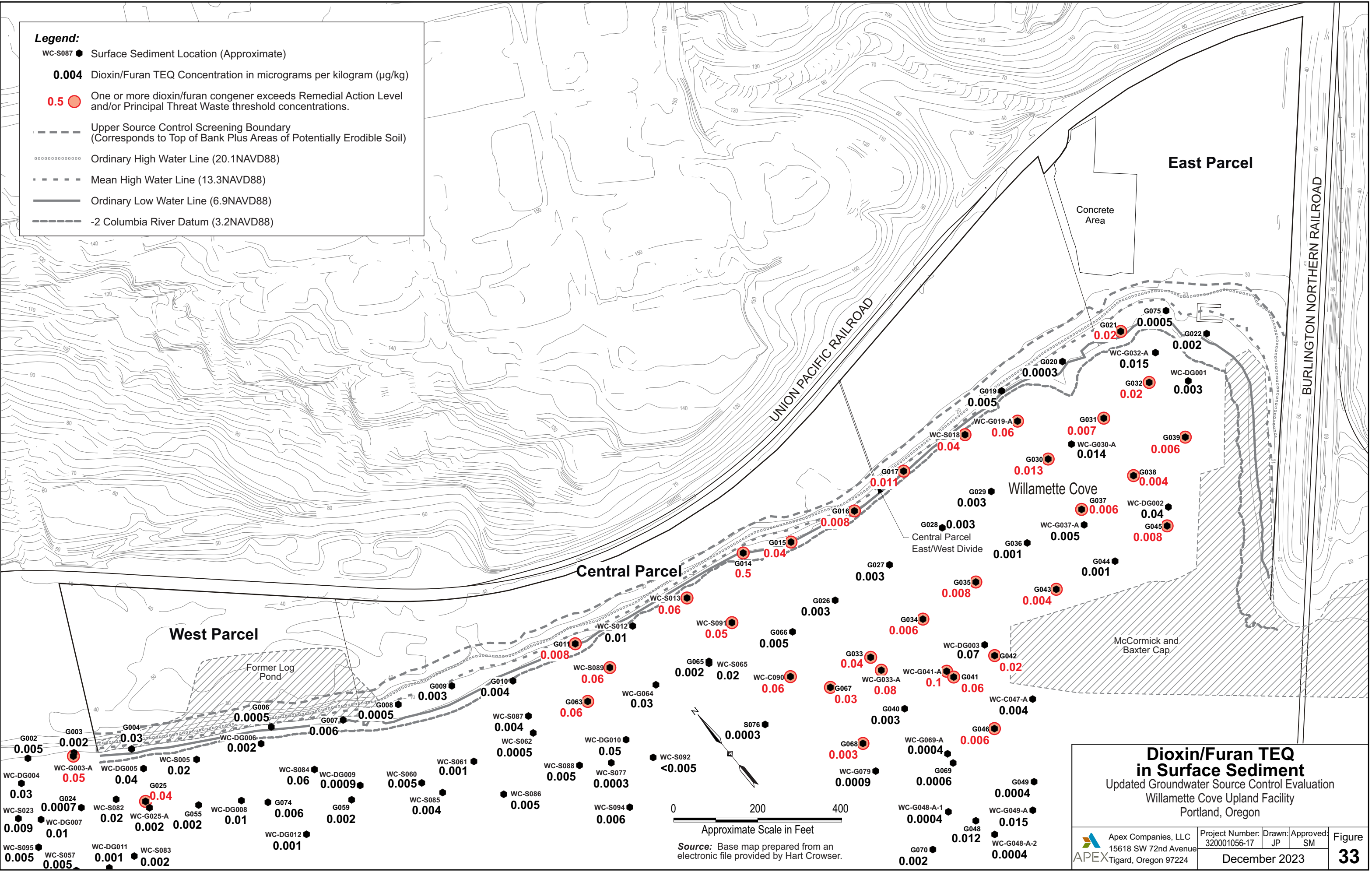
I:\Client\Port of Portland\00-PP\905105 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 31 (GW Diox-Furan).des



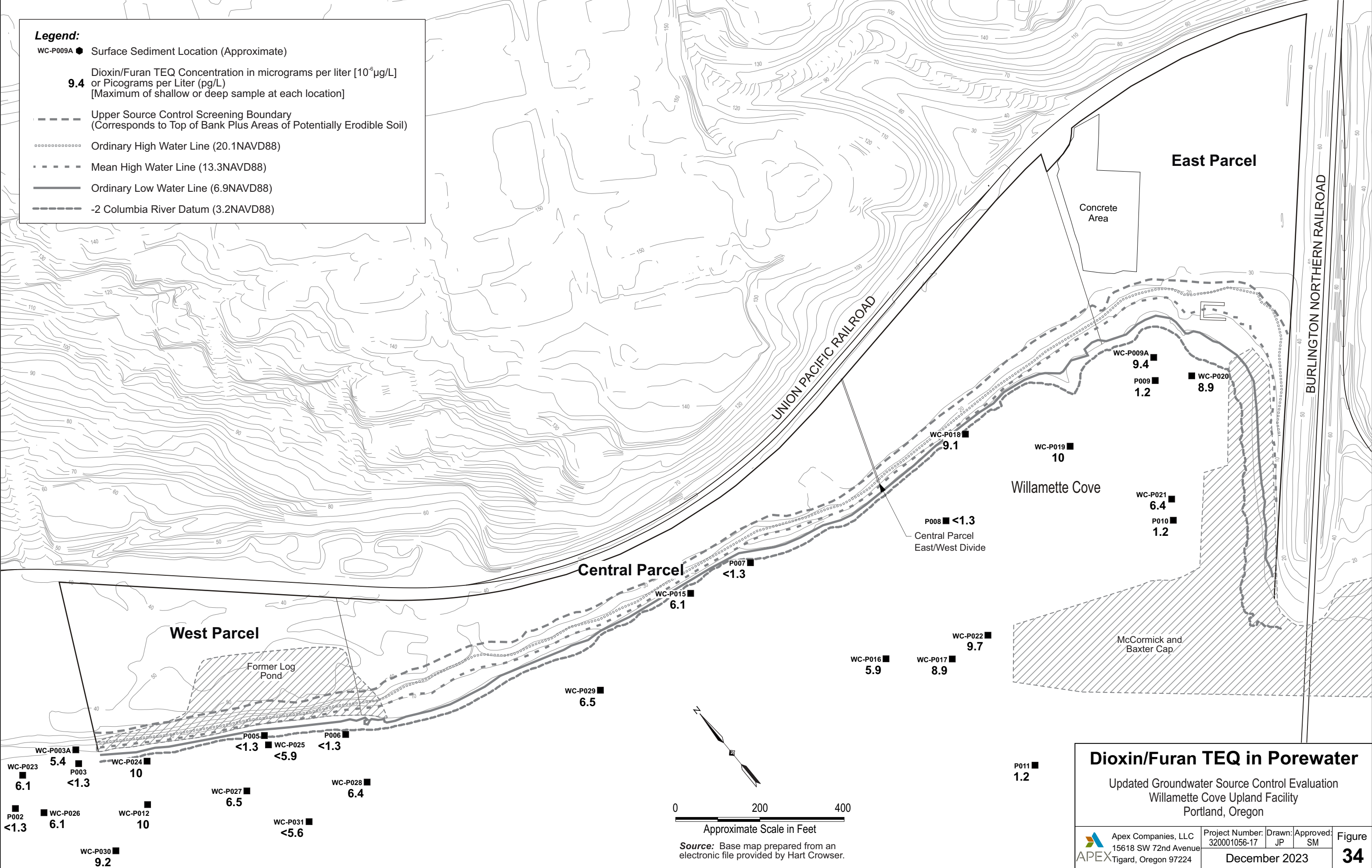
I:\Client\Port of Portland\00-PP\905105 WC01 Repts and Wk Plans\19 GW SOE SCAE\2023 Update\320001056-17 33 (Dioxin-Furan in Surface Sed) ds

Legend:

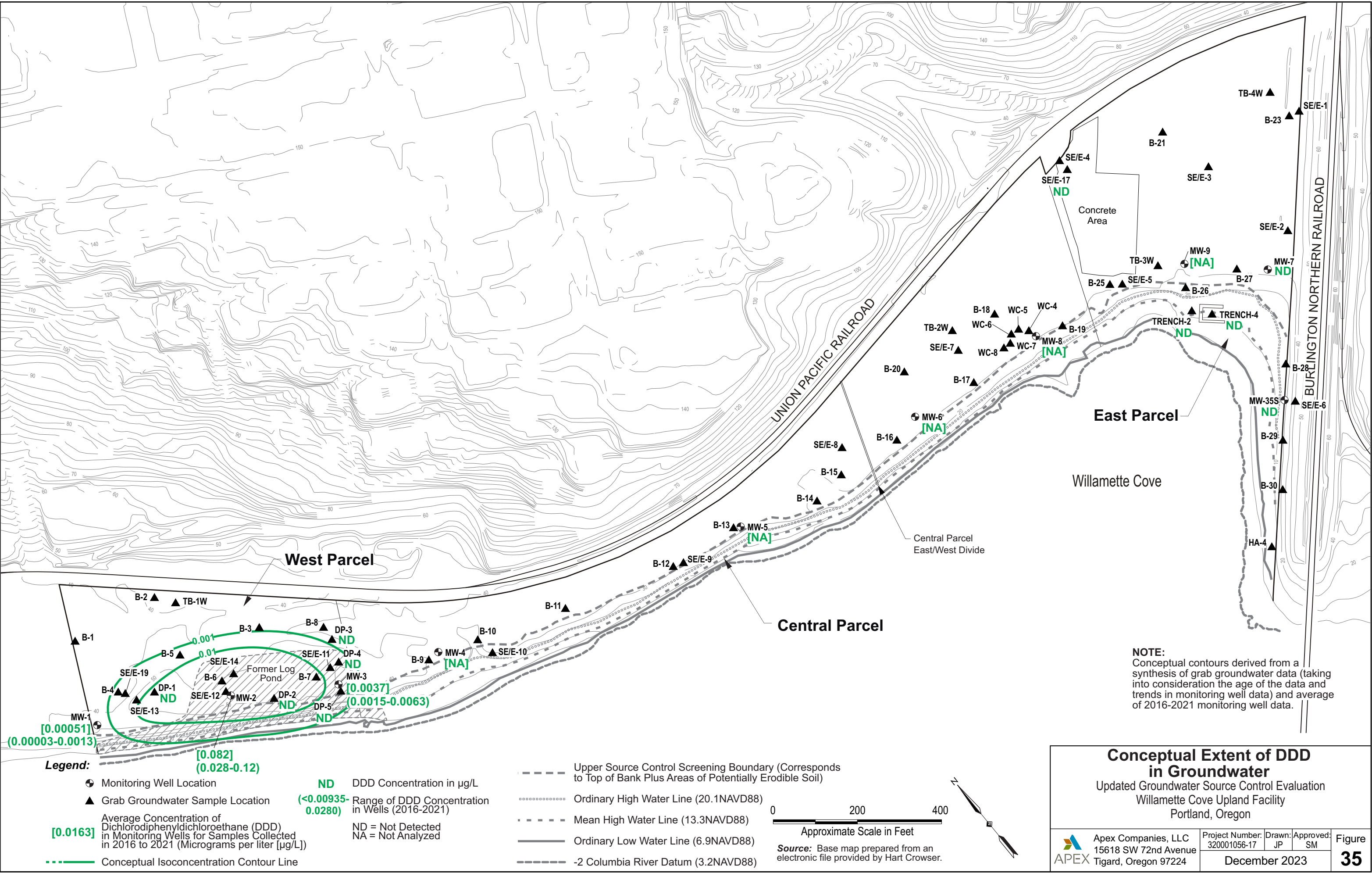
- WC-S087 ● Surface Sediment Location (Approximate)
- 0.004 Dioxin/Furan TEQ Concentration in micrograms per kilogram (µg/kg)
- 0.5 ● One or more dioxin/furan congener exceeds Remedial Action Level and/or Principal Threat Waste threshold concentrations.
- Upper Source Control Screening Boundary (Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)
- Ordinary High Water Line (20.1NAVD88)
- - - - Mean High Water Line (13.3NAVD88)
- Ordinary Low Water Line (6.9NAVD88)
- -2 Columbia River Datum (3.2NAVD88)



I:\Client\Port of Portland\00-PI\905105 WC\01 Repts and Wk Plans\19 GW SOE SCAE\2023 Update\320001056-17 34 (Dioxin-Furan in Porewater) des



I:\Client\Port of Portland\00-PP\905105 WC01 Repts and Wk Plans\19 GW SCE SCAE 2023 Update\320001056-17 35 (GW DDD).des



I:\Client\Port of Portland\00-PI\905105 WC\01 Repts and Wk Plans\19 GW SOE SCAE\2023 Update\320001056-17-37 (DDD in Porewater).des

Legend:

WC-P009A  Surface Sediment Location (Approximate)

0.00002 DDD Concentration in micrograms per Liter (µg/L)
[Maximum of shallow or deep sample at each location]

0.0029  Concentration greater than the Cleanup Level of 0.000031 µg/L

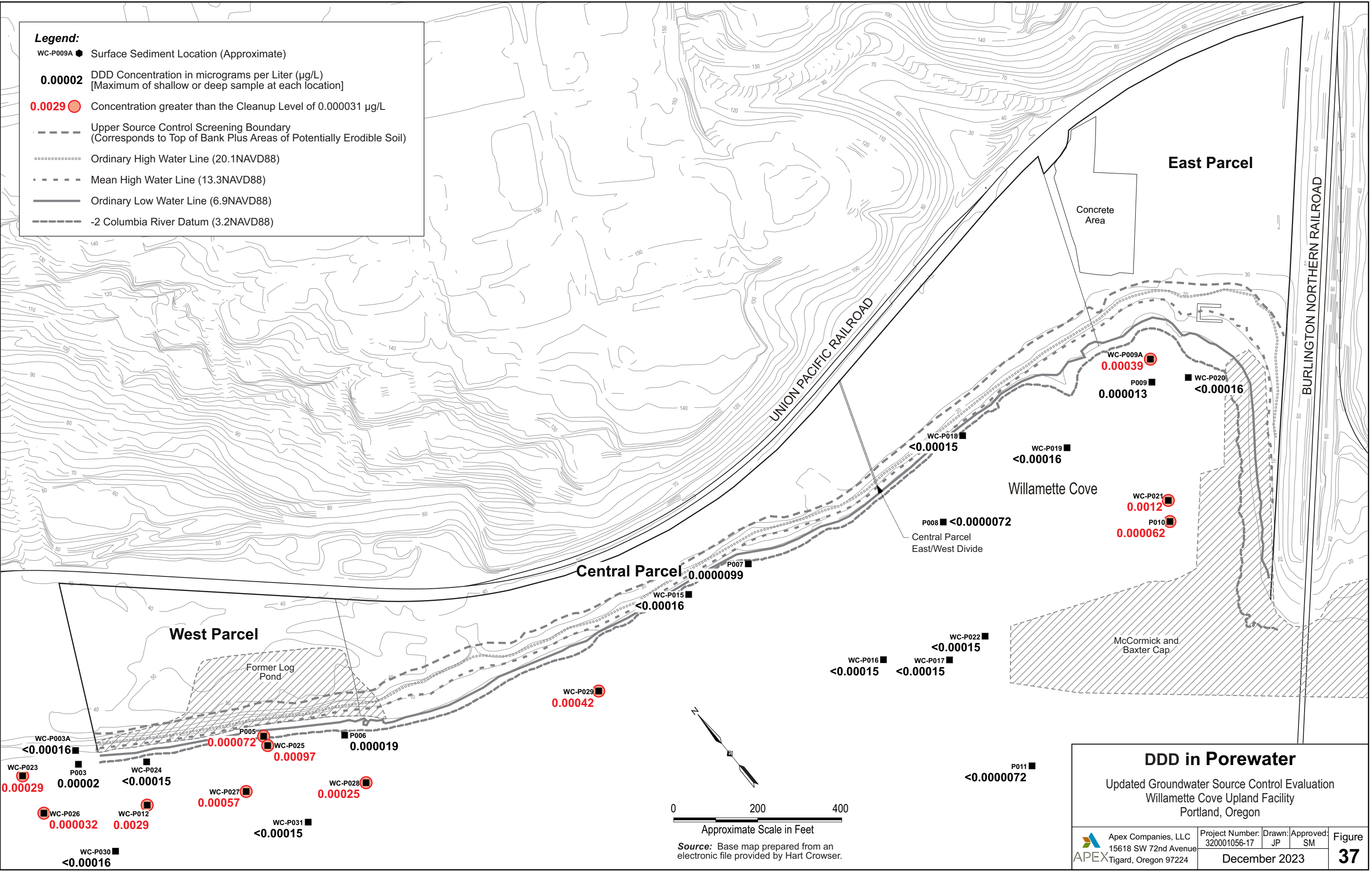
 Upper Source Control Screening Boundary
(Corresponds to Top of Bank Plus Areas of Potentially Erodible Soil)

 Ordinary High Water Line (20.1NAVD88)

 Mean High Water Line (13.3NAVD88)

 Ordinary Low Water Line (6.9NAVD88)

 -2 Columbia River Datum (3.2NAVD88)



Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:
320001056-17

Drawn:
JP

Approved:
SM

December 2023

Figure
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Appendix A

Groundwater Data Screening Summary and Database

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
WEST PARCEL GRAB SAMPLES																			
Total Metals																			
B-4	5/8/2001	Primary	--	10 U	94.9	--	14.7	10 U	518	663	--	285	0.852	488	10 U	13.1	10 U	--	3190
B-6	5/11/2001	Primary	--	10 U	10 U	--	10 U	10 U	10 U	20 U	--	10 U	21.5	20 U	125	10 U	10 U	--	59.9
DP-1 (35-40)	12/14/2016	Primary	86.5	1 U	1.8	106	0.2 U	0.222	0.867 J	1.7	1320	0.178 J	0.08 U	9.69	1 U	0.2 U	0.2 U	12.4	2.89 J
DP-2 (40-45)	12/29/2016	Primary	35300	0.567 J	13.2	1130	1.83	1.2	138	122	228000	67.3	0.35	76.6	3.66	0.644	0.222	161	461
DP-3 (35-40)	12/21/2016	Primary	8980	0.5 U	2.91	68.4	0.3	0.167 J	7.61	25.1	15400	2.83	0.04 U	8.9	0.5 U	0.1 U	0.1 U	28	28.1
DP-4 (40-45)	1/5/2017	Primary	14700	0.5 UQ	7.49	183	0.478	0.4	28.6	65.5	72200	37.9	0.173	24	0.5 U	0.2	0.1 U	48.5	224
DP-5 (40-45)	1/5/2017	Primary	29800	3.01	20.6	383	1.57	1.28	92	157	78100	120	0.795	60.6	1.23	0.456	0.267	167	322
DP-5 (55-60)	1/5/2017	Primary	39200	0.5 UQ	15.3	495	1.8	1.12	113	245	111000	61.5	0.354	70.4	0.778 J	0.178 J	0.511	169	580
SE/E-11	12/6/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-12	12/9/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-13	12/9/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dissolved Metals																			
B-4	5/8/2001	Primary	--	1 U	2.03	--	1 U	1 U	3.04	7.86	--	1 U	0.2 U	15.6	1 U	1 U	1 U	--	14.3
B-6	5/11/2001	Primary	--	53.6	148	--	1 U	1 U	37.3	472	--	3.93	0.2 U	247	12.7	2.01	1 U	--	60.5
DP-1 (35-40)	12/14/2016	Primary	50 U	1 U	1.86	110	0.2 U	0.211	0.556 J	1.47	1050	0.2 U	0.08 U	9.92	1 U	0.2 U	0.2 U	12.5	2.93 J
DP-2 (40-45)	12/29/2016	Primary	25 U	0.5 U	0.819 J	611 J	0.1 U	0.1 U	0.5 U	1.07	88100 J	0.1 U	0.04 U	9.81	7.18	0.1 U	0.1 U	0.5 U	29
DP-3 (35-40)	12/21/2016	Primary	101	0.5 U	1.06	11.7	0.1 U	0.1 U	0.5 U	0.933 J	341	0.1 J	0.04 U	2.47	0.5 U	0.1 U	0.1 U	5.63	2.46 J
DP-4 (40-45)	1/5/2017	Primary	26.2	0.5 U	3.93	85.9	0.1 U	0.1 U	1.5	0.689 J	54100	0.1 U	0.04 U	4.4	0.5 U	0.1 U	0.1 U	0.711 J	6.78
DP-5 (40-45)	1/5/2017	Primary	123	4.4	8	79.2	0.1 U	0.1 U	0.889 J	0.822 J	7630	0.411	0.04 U	7.84	0.8 J	0.1 U	0.1 U	7.43	2 U
DP-5 (55-60)	1/5/2017	Primary	56.7	0.5 U	2.2	25.5	0.1 U	0.1 U	0.5 U	1.28	5540	0.1 U	0.04 U	3.01	0.5 U	0.1 U	0.1 U	0.989 J	3.57 J
SE/E-11	12/6/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	3	0.2	10 U	2 U	10 U	3 U	--	16
SE/E-12	12/9/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	2 U	0.2	10 U	2 U	10 U	3 U	--	26
SE/E-13	12/9/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	5	0.2	11	2 U	10 U	3 U	--	18

Please see notes at end of table.

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
CENTRAL PARCEL GRAB SAMPLES																			
Total Metals																			
B-10	5/15/2001	Primary	--	--	55.1	--	--	5 U	813	1170	--	176	1.25	496	--	--	--	--	1420
B-12	5/14/2001	Primary	--	5 UJ	29.7	--	5 U	5 U	244	342	--	275	0.652	180	5 U	11.1	5 U	--	842
B-14	5/14/2001	Primary	--	--	8.86	--	--	2 U	76.9	108	--	25.2	0.2 U	79.8	--	--	--	--	332
B-15	5/14/2001	Primary	--	--	17.8	--	--	2 U	106	78.6	--	34.9	0.2 U	81.4	--	--	--	--	410
B-16	5/7/2001	Primary	--	--	19.4	--	--	2 U	102	109	--	29.4	0.8 U	87.6	--	--	--	--	364
B-17	5/8/2001	Primary	--	2.5 U	16.8	--	4.65	2.5 U	144	177	--	147	0.8 U	158	2.5 UJ	2.5 U	2.5 U	--	513
B-19	5/7/2001	Primary	--	--	55.4	--	--	10 U	428	951	--	1000	2.96	400	--	--	--	--	1570
SE/E-10	12/8/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-7	12/7/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-8	12/7/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-2W	10/19/1995	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WC-4	9/30/2010	Primary	--	0.16 U	5 B	--	0.43	0.058 J	16.4	16.6	--	10.7 B	0.011 U	16.7	0.64	0.071 U	0.051 J	--	45.4
WC-5	9/30/2010	Primary	--	0.16 U	1.1 B	--	0.14 J	0.02 U	8.2	7.6	--	2 B	0.011 U	10.8	0.11 J	0.071 U	0.05 U	--	79.2
WC-6	9/30/2010	Primary	--	0.16 U	14.2 B	--	0.069 U	0.02 U	1.1	0.53	--	0.24 B	0.011 U	2.3	0.1 U	0.071 U	0.05 U	--	21.4
WC-7	9/29/2010	Primary	--	0.16 U	9.4 B	--	0.64	0.089	27.4	37	--	14.6 B	0.011 U	30.6	0.94	0.071 U	0.1	--	154
WC-8	9/29/2010	Primary	--	0.16 U	7.7 B	--	0.069 U	0.044 J	3.6	5	--	3.4 B	0.011 U	45.4	0.18 J	0.071 U	0.05 U	--	14.2
Dissolved Metals																			
B-10	5/15/2001	Primary	--	--	2.35 J	--	--	1 U	11.9	25.5	--	3.93	0.2 U	10.5	--	--	--	--	45.1
B-12	5/14/2001	Primary	--	1 U	9.78 J	--	1 U	1 U	3.67	4.4	--	3.47	0.2 U	6.3	1 UJ	1 U	1 U	--	16.5
B-14	5/14/2001	Primary	--	--	4.52 J	--	--	1 U	1.48	2	--	1 U	0.2 U	9.11	--	--	--	--	40.9
B-15	5/14/2001	Primary	--	--	11.3 J	--	--	1 U	1.44	2 U	--	1 U	0.2 U	7.97	--	--	--	--	26.2
B-16	5/7/2001	Primary	--	--	1 U	--	--	1 U	1.38	2 U	--	1 U	0.2 U	3.31	--	--	--	--	10.4
B-17	5/8/2001	Primary	--	1 U	1.72 J	--	1 U	1 U	2.38	2 U	--	1 U	0.2 U	5.55	1 UJ	1 U	1 U	--	10.4
B-19	5/7/2001	Primary	--	--	1 UJ	--	--	1 U	1 U	2.04	--	1 U	0.2 U	4.72	--	--	--	--	5 U
SE/E-10	12/8/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	3	0.2	10 U	2 U	10 U	3 U	--	14
SE/E-7	12/7/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	2 U	0.2 U	10 U	2 U	10 U	3 U	--	18
SE/E-8	12/7/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	2 U	0.2 U	10 U	2 U	10 U	3 U	--	23
WC-4	9/30/2010	Primary	--	0.16 U	4.2	--	0.19 J	0.051 J	8.4	9.8	--	6.2	0.011 U	9.8	0.17 J	0.55	0.05 U	--	28.7
WC-5	9/30/2010	Primary	--	0.16 U	0.32 J	--	0.069 U	0.02 U	0.84	0.2 U	--	0.1	0.011 U	4.9	0.1 U	0.083 J	0.05 U	--	17.6
WC-6	9/30/2010	Primary	--	0.16 U	13.2	--	0.069 U	0.02 U	0.55	0.2 U	--	0.088 J	0.011 U	2.7	0.1 U	0.071 U	0.05 U	--	16.4
WC-7	9/29/2010	Primary	--	0.16 U	3.9	--	0.069 U	0.02 U	0.24 U	0.2 U	--	0.02 U	0.011 U	2.8	0.1 U	0.071 U	0.05 U	--	8
WC-8	9/29/2010	Primary	--	0.16 U	4.7	--	0.069 U	0.02 J	1.5	2.2	--	1.5	0.011 U	3.2	0.1 U	0.071 U	0.05 U	--	10.5

Please see notes at end of table.

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
EAST PARCEL GRAB SAMPLES																			
Total Metals																			
B-23	5/15/2001	Primary	--	--	2 U	--	--	2 U	23.5	40.8	--	9.9	0.2 U	25.9	--	--	--	--	87.5
B-27	5/11/2001	Primary	--	1 U	9.68	--	1 U	1 U	56.9	49.6	--	17.5	0.2 U	36.2	1.84	1 U	1 U	--	114
HA-4	12/12/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-1	12/5/1988	Primary	--	50 U	7	--	30 U	30	540	2100	--	210	0.6	560	10 U	100 U	11	--	2200
SE/E-17	1/26/1988	Primary	--	50 U	3	--	5 U	5 U	29	140	--	29	2.2	64	2 U	10 U	2	--	270
SE/E-2	12/5/1988	Primary	--	50 U	12	--	10 U	10	250	930	--	300	0.2 U	270	2 U	20 U	10	--	1400
SE/E-3	12/6/1988	Primary	--	50 U	25	--	20 U	50	1800	3000	--	410	1.4	2100	2 U	100 U	14	--	7100
SE/E-4	12/6/1988	Primary	--	50 U	17	--	5 U	5	210	510	--	230	1.9	260	2 U	10 U	6 U	--	860
SE/E-5	12/6/1988	Primary	--	50 U	12	--	5 U	5 U	66	140	--	52	0.3	69	2 U	10 U	6	--	240
SE/E-6	12/7/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-4W	10/19/1995	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRENCH 2	9/28/2010	Primary	--	1.1	3.9 B	--	0.069 U	0.63	4	29	--	45.6 B	0.011 U	10.1	0.1 U	0.071 U	0.05 U	--	119
TRENCH 4	9/29/2010	Primary	--	0.88	1.7 B	--	0.069 U	0.15	1	21.8	--	5	0.011 U	1.8 B	0.1 U	0.071 U	0.05 U	--	12.3
Dissolved Metals																			
B-23	5/15/2001	Primary	--	--	1 U	--	--	1 U	1.99	2 U	--	1 U	0.2 U	2.77	--	--	--	--	5 U
B-27	5/11/2001	Primary	--	1 U	29.8	--	1 U	1 U	19.5	2.95	--	1 U	0.2 U	8.25	1.44	1 U	1 U	--	25.6
HA-4	12/12/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	2	0.2 U	10 U	2 U	10 U	3 U	--	10 U
SE/E-1	12/5/1988	Primary	--	--	--	--	--	5 U	5	10 U	--	4	--	--	--	--	--	--	--
SE/E-17	1/26/1988	Primary	--	50 U	1 U	--	5 U	5 U	5 U	10 U	--	1 U	0.2 U	20 U	2 U	10 U	1 U	--	24
SE/E-2	12/5/1988	Primary	--	--	--	--	--	5 U	5	10 U	--	3	--	--	--	--	--	--	--
SE/E-3	12/6/1988	Primary	--	--	--	--	--	5	5	10	--	2	--	--	--	--	--	--	--
SE/E-4	12/6/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-5	12/6/1988	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SE/E-6	12/7/1988	Primary	--	50 U	2 U	--	5 U	5 U	5 U	10 U	--	2 U	0.2 U	10 U	2 U	10 U	3 U	--	15
TB-4W	10/19/1995	Primary	--	50 U	5 U	--	5 U	3 U	5 U	10 U	--	2 U	0.5 U	20 U	5 U	10 U	5 U	--	75
TRENCH 2	9/28/2010	Primary	--	0.49 J	1.9	--	0.069 U	0.31	0.26 J	0.6	--	0.18	0.011 U	6.7	0.1 U	0.071 U	0.05 U	--	43 B
TRENCH 4	9/29/2010	Primary	--	0.85	1.3	--	0.069 U	0.038 J	0.52	3	--	0.57	0.011 U	1.7	0.1 U	0.071 U	0.05 U	--	10.6 B

Please see notes at end of table.

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
WEST PARCEL MONITORING WELL SAMPLES																			
Total Metals																			
MW-1	2/7/2002	Primary	--	1 U	24	--	2.62	1 U	48.3	96.6	--	71.4	1.39	62.2	2.33	1 U	1 U	--	297
	5/28/2002	Primary	--	1 U	38.7	--	5.83	2.21	133	219	--	225	2.39	144	3.12	4.96	1.43	--	670
	8/30/2005	Primary	--	1 U	32.4	--	1.61	1 U	82.4	81.5	--	55.4	0.791	78.8	2.33	1 U	1 U	--	209
	12/16/2005	Primary	--	1 U	29.6	--	1 U	1 U	7.71 J	7.39	--	4.3	0.2 U	11.1	2 UJ	1 U	1 U	--	17.5
	2/23/2016	Primary	50 U	1 U	26.5	180	0.2 U	0.2 U	1 U	2 U	30300	0.2 U	0.08 U	1.06	2 U	0.2 U	0.2 U	1.18	4 U
	6/3/2016	Primary	34300	0.75 U	53.9	753	3.12	3.02	50.2	216	130000	82	0.678	66.8	1.58	0.3	0.5	180	327
	9/14/2016	Primary	210	0.5 U	56	172	0.1 U	0.04 U	0.644 J	0.967 J	29700	0.478	0.04 U	2.86	0.5 U	0.1 U	0.1 U	1.71	3.12 J
	12/20/2016	Primary	86.9	0.5 U	37	147	0.1 U	0.0692 J	0.4 U	1.67	25500	0.271	0.04 U	0.851 J	0.571 J	0.1 U	0.1 U	1.07	2 U
	11/22/2019	Primary	2840	0.5 U	54.4	203	0.161 J	0.192	3.21	8.08	39000	4.32	0.0465 J	5.77	0.5 U	0.025 U	0.1 U	12.9	17.1
	8/11/2020	Primary	1150	0.5 U	39.4	207	0.1 U	0.0654	1.51	3.83	34900	1.9	0.04 U	3.8	0.5 U	0.0161 J	0.1 U	6.15	13.3
	2/24/2021	Primary	37.8 J	0.5 U	27.6	210	0.1 U	0.009 U	0.5 U	1 U	31100	0.11 J	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2 U
	2/24/2021	Duplicate	33.2 J	0.5 U	28.6	213	0.1 U	0.009 U	0.5 U	1 U	31800	0.104 J	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2 U
MW-2	2/7/2002	Primary	--	2.96	17.2	--	1 U	1 U	3.2	9.38	--	5.49	0.2 U	17	1.79	1 U	1 U	--	9.15
	5/28/2002	Primary	--	2.31	15.7	--	1 U	1 U	2.01	3.48	--	2.84	0.2 U	12.8	1.24	1 U	1 U	--	5.36
	8/30/2005	Primary	--	2.52	18.1	--	1 U	1 U	4.62	4.22	--	2.1	2.1	10.8	2 U	1 U	1 U	--	5 U
	12/16/2005	Primary	--	2.42	19.5	--	1 U	1 U	5.35 J	7.64	--	2.67	0.2 U	12.4	2 UJ	1 U	1 U	--	5 U
	2/23/2016	Primary	96.2	2.42	17.3	3.66	0.2 U	0.2 U	1 U	2 U	156	0.478	0.08 U	6.91	2 U	0.2 U	0.2 U	8.53	4 U
	6/3/2016	Primary	423	1.86	16	7.2	0.1 U	0.4 U	1.21	4.76	592	1.6	0.04 U	7.49	0.767	0.1 U	0.1 U	7	15.3
	9/14/2016	Primary	89.8	2.46	15.8	3.83	0.1 U	0.0444 J	0.678 J	1.42	153	0.689	0.04 U	6.48	0.5 U	0.1 U	0.1 U	9.34	2 U
	12/20/2016	Primary	238	2.88	16.1	7.56	0.1 U	0.057 J	0.589 J	11.6	286	2.09	0.04 U	6.39	0.591 J	0.1 U	0.1 U	14.3	6.27
	11/22/2019	Primary	87.3	1.93	14.0	4.79	0.100 U	0.0250 U	0.604 J	1.13	80.2	0.471	0.0400 U	6.80	0.500 U	0.0250 U	0.100 U	8.57	2.00 U
	8/11/2020	Primary	115	1.55	15.5	4.4	0.1 U	0.025 U	0.587 J	1.41 J	104	0.616	0.04 U	6.04	0.526 J	0.009 U	0.1 U	6.7	2.16 J
	2/23/2021	Primary	70.7	1.65	16	5.76	0.1 U	0.0134 J	0.5 U	1.05 J	58.5	0.468	0.04 U	6.53	0.5 U	0.009 U	0.1 U	4.53	2 U
	MW-3	2/7/2002	Primary	--	1 U	13.8	--	1 U	1 U	9.2	18.8	--	11.8	0.2 U	10.4	2.66	1 U	1 U	--
5/28/2002		Primary	--	1 U	11.1	--	1.15	1 U	35.8	58.1	--	49.1	0.253	27.5	1.78	2.16	1 U	--	188
8/30/2005		Primary	--	1 U	128	--	16.4	7.64	661	1760	--	877	6.17	632	9.55	4.63	1.92	--	6490
12/16/2005		Primary	--	1 U	79.6	--	5.15	1 U	248 J	470	--	276	3.57	221	5.06 J	1.31	1 U	--	1620
2/23/2016		Primary	50 U	1 U	12.1	161	0.2 U	0.2 U	1 U	2 U	80800	0.2 U	0.08 U	2.73	2 U	0.2 U	0.2 U	2.88	4 U
6/3/2016		Primary	16,100	0.85	28.5	408	0.8	0.5	25.2	54.5	147000	45.8	0.312	27.7	0.783 J	0.167 J	0.15 U	75.8	222
9/14/2016		Primary	7,120	0.5 U	18.8	300	0.333	0.333	10.7	23	121000	17.4	0.163	12.1	0.5 U	0.1 U	0.1 U	31.2	82.4
12/20/2016		Primary	7,290	0.5 U	11.8	211	0.383	0.35	11.5	38.9	69100	26.3	0.204	12.6	0.763 J	0.1 U	0.1 U	35.3	112
11/22/2019		Primary	14500 J	0.905 J	19.7	277	0.566	0.539 J	19.2 J	51.4 J	111000	34.5 J	0.301	21.7 J	0.5 U	0.152	0.107 J	56.6 J	162 J
11/22/2019		Duplicate	1490 J	0.5 U	17.2	208	0.1 U	0.0914 J	2.76 J	5.42 J	104000	3.43 J	0.04 U	3.54 J	0.5 U	0.025 U	0.1 U	7.95 J	16.8 J
8/12/2020		Primary	180	0.5 U	16.7	169	0.1 U	0.025 U	0.963 J	1.27 J	86800	0.551	0.04 U	1.65 J	0.5 U	0.009 U	0.1 U	2.94	3.23 J
8/12/2020		Duplicate	171	0.5 U	16.9	172	0.1 U	0.025 U	0.998 J	1.01 J	86100	0.582	0.04 U	1.84 J	0.5 U	0.009 U	0.1 U	2.96	3.48 J
3/1/2021	Primary	762	0.5 U	14.3	190	0.1 U	0.0189 J+	1.6	3.37	79400	1.92	0.04 U	1.99 J	0.5 U	0.0096 J+	0.1 U	5.03	9.14	

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
WEST PARCEL MONITORING WELL SAMPLES																			
Dissolved Metals																			
MW-1	2/7/2002	Primary	--	10 U	10 U	--	1 U	1 U	2.01	2 U	--	1 U	0.2 U	5.25	2.22	1 U	10 U	--	7.99
	5/28/2002	Primary	--	1 U	1.05	--	1 U	1 U	1 U	1.33	--	1 U	0.2 U	4.44	2.11	1 U	1 U	--	5 U
	8/30/2005	Primary	--	1 U	29	--	1 U	1 U	1 U	2 U	--	1 U	0.423	6.9	2 U	1 U	1 U	--	5 U
	12/16/2005	Primary	--	1 U	28	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	5.11	2 U	1 U	1 U	--	5 U
	2/23/2016	Primary	50 U	1 U	27.9	187	0.2 U	0.2 U	1 U	2 U	32600	0.2 U	0.08 U	1.19	2 U	0.2 U	0.2 U	1.12	4 U
	6/3/2016	Primary	25 U	0.5 U	43.3	182	0.1 U	0.1 U	0.5 U	0.544 J	29500	0.1 U	0.04 U	2.69	1.09 J	0.1 U	0.1 U	1.2	11
	9/14/2016	Primary	105	0.5 U	56.9	165	0.1 U	0.04 U	0.644 J	0.622 J	29800	0.189 J	0.04 U	2.91	0.5 U	0.1 U	0.1 U	1.04	2 U
	12/20/2016	Primary	25 U	0.5 U	38.2	160	0.1 U	0.1 U	0.5 U	0.5 U	25700	0.1 U	0.04 U	1.09	0.5 U	0.1 U	0.1 U	0.856 J	2 U
	11/22/2019	Primary	25 U	0.5 U	49.6	170	0.1 U	0.025 U	0.5 U	0.5 U	31800	0.1 U	0.04 U	2.12	0.5 U	0.025 U	0.1 U	0.5 U	2 U
	8/11/2020	Primary	25 U	0.5 U	38.6	190	0.1 U	0.025 U	0.5 U	1 U	32800	0.1 U	0.04 U	1.43 J	0.5 U	0.009 U	0.1 U	1 U	6.02
	2/24/2021	Primary	25 U	0.5 U	29.3	204	0.1 U	0.009 U	0.5 U	1 U	30900	0.1 U	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2 U
	2/24/2021	Duplicate	25 U	0.5 U	29.7	204	0.1 U	0.009 U	0.5 U	1 U	30800	0.1 U	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2 U
MW-2	2/7/2002	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/28/2002	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/30/2005	Primary	--	2.34	18.2	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	8.08	2 U	1 U	1 U	--	5 U
	12/16/2005	Primary	--	2.47	19.7	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	9.39	2 U	1 U	1 U	--	5 U
	2/23/2016	Primary	92.7	2.5	17.5	4.11	0.2 U	0.2 U	1 U	2 U	117	0.356	0.08 U	7.08	2 U	0.2 U	0.2 U	8.51	4 U
	6/3/2016	Primary	93.3	2.38	16.9	3.68	0.1 U	0.1 U	0.544 J	1.34	129	0.256	0.04 U	7.92	1 U	0.1 U	0.1 U	7.32	10.9
	9/14/2016	Primary	78.4	2.32	15.5	4.02	0.1 U	0.04 U	0.933 J	1.47	102	0.933	0.04 U	6.88	0.5 U	0.1 U	0.1 U	9.97	2 U
	12/20/2016	Primary	72.8	3.39	17	6.21	0.1 U	0.1 U	0.5 U	5.08	102	1.37	0.04 U	6.7	0.5 U	0.1 U	0.1 U	17.3	2 U
	11/22/2019	Primary	50.8	1.84	13.5	4.01	0.1 U	0.025 U	0.532 J	1.13	25 U	0.306	0.04 U	5.88	0.5 U	0.025 U	0.1 U	7.25	2 U
	8/11/2020	Primary	84.3	1.01	16.3	3.97	0.1 U	0.025 U	0.5 U	1 U	56.8	0.409	0.0647 J	5.5	1.64	0.009 UJ	0.1 U	6.24	2 U
	2/23/2021	Primary	41.5 J	1.05	15.9	4.84	0.1 U	0.009 U	0.5 U	1 U	25 U	0.167 J	0.04 U	5.42	2.04	0.009 U	0.1 U	4.18	2 U
	MW-3	2/7/2002	Primary	--	1 U	13.5	--	1 U	1 U	1.27	2 U	--	1 U	0.2 U	4.13	3.11	1 U	1 U	--
5/28/2002		Primary	--	1 U	1.07	--	1 U	1 U	1.03	1.66	--	1 U	0.2 U	2.95	2.1	1 U	1 U	--	9.58
8/30/2005		Primary	--	1 U	31.2	--	1 U	1 U	1.36	2 U	--	1 U	0.352	7.8	2	1 U	1 U	--	5 U
12/16/2005		Primary	--	1 U	22.6	--	1 U	1 U	1.81	2 U	--	1 U	0.2 U	7.08	2 U	1 U	1 U	--	5 U
2/23/2016		Primary	50 U	1 U	12.7	165	0.2 U	0.2 U	1 U	2 U	77800	0.2 U	0.08 U	2.67	2 U	0.2 U	0.2 U	2.87	4 U
6/3/2016		Primary	5990	0.767 J	15.5	222	0.2	0.167 J	7.5	11	83900	8.52	0.0542 J	8.04	1 U	0.1 U	0.1 U	22.4	47.8
9/14/2016		Primary	25 U	0.5 U	18.1	248	0.1 U	0.04 U	0.756 J	0.5 U	126000	0.1 U	0.04 U	2.53	0.5 U	0.1 U	0.1 U	2.51	2 U
12/20/2016		Primary	25 U	0.5 U	10.3	172	0.1 U	0.1 U	0.911 J	0.5 U	67500	0.1 U	0.04 U	1.76	0.544 J	0.1 U	0.1 U	2.48	2 U
11/22/2019		Primary	36.8 J	0.5 U	15.5	195	0.1 U	0.025 U	0.655 J	0.504 J	92700	0.218	0.04 U	1.49	0.5 U	0.025 U	0.1 U	1.87	2.91 J
11/22/2019		Duplicate	39.9 J	0.5 U	15.9	178	0.1 U	0.025 U	0.682 J	0.5 U	91200	0.205	0.04 U	1.33	0.5 U	0.025 U	0.1 U	1.86	2 U
8/12/2020		Primary	25 U	0.5 U	16.4	165	0.1 U	0.025 U	0.633 J	1 U	86600	0.1 U	0.04 U	1.24 J	0.5 U	0.0162 J	0.1 U	2.08	2 U
8/12/2020		Duplicate	25 U	0.5 U	16.4	165	0.1 U	0.025 U	0.646 J	1 U	84800	0.1 U	0.04 U	1.32 J	0.5 U	0.0111 J	0.1 U	2.14	2 U
3/1/2021		Primary	25 U	0.5 U	14.2	173	0.1 U	0.009 U	0.625 J	1 U	74300	0.1 U	0.04 U	1 U	0.5 U	0.009 U	0.1 U	2.27	2.04 J

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
CENTRAL PARCEL MONITOIRNG WELLS																			
Total Metals																			
MW-4	2/7/2002	Primary	--	1 U	12.2	--	1.62	1 U	59.2	125	--	57.9	2.04	45.7	1.22	1 U	1 U	--	142
	5/28/2002	Primary	--	1 U	34.3	--	1 U	1 U	19.3	53.6	--	17.5	0.475	18.1	1 U	1 U	1 U	--	75.9
	8/30/2005	Primary	--	1 U	15.6	--	1.91	1 U	67.5	157	--	53.9	1.6	89.8	2 U	1 U	1 U	--	262
	12/15/2005	Primary	--	1 U	11	--	1.23	1 U	48.8 J	90.6	--	35.8	0.776	41.2	2 UJ	1 U	1 U	--	129
	2/23/2016	Primary	50 U	1 U	2.59	34.9	0.2 U	1 U	1 U	1.3	38200	0.2 U	0.08 U	3.86	1 U	0.2 U	0.2 U	1.08	9.44
	6/3/2016	Primary	25 U	0.5 U	0.5 U	14	0.1 U	0.04 U	0.4 U	0.944	316	0.111 J	0.04 U	1.5	0.5 U	0.1 U	0.1 U	1.5	17.2
	9/15/2016	Primary	25 U	0.5 U	0.5 U	12.1	0.1 U	0.04 U	0.4 U	0.911 J	282	0.1 U	0.04 U	3.19	0.5 U	0.1 U	0.1 U	1.54	4.86
	12/20/2016	Primary	75.4	0.5 U	0.5 U	15.6	0.1 U	0.0651 J	0.4 U	6.2	598	0.222	0.04 U	3.49	0.5 U	0.1 U	0.1 U	2.48	11.3
	8/12/2020	Primary	--	--	1.68	--	--	--	--	--	--	0.99	--	--	--	--	--	--	--
	3/1/2021	Primary	83.1	0.5 U	0.401	29	0.1 U	0.0363	0.5 U	2.81	962	0.188 J	0.04 U	3.41	0.5 U	0.009 U	0.1 U	2.21	10.5
MW-5	2/8/2002	Primary	--	1 U	7.48	--	1 U	1 U	23.5	83.3	--	134	1.65	21.7	1 U	1 U	1 U	--	79.6
	5/28/2002	Primary	--	1 U	13.4	--	2.06	1 U	53.5	186	--	278	2.1	44.1	1.27	1 U	1 U	--	166
	8/29/2005	Primary	--	1 UJ	1.24	--	1 U	1 U	6.33	6.71	--	12.7	0.2 U	4.36	2 U	1 U	1 U	--	5 U
	12/15/2005	Primary	--	1 U	2.04	--	1 U	1 U	2.41 J	13.8	--	29.9	0.299	2.19	2 UJ	1 U	1 U	--	8.44
	2/24/2016	Primary	50 U	1 U	1 U	15.1	0.2 U	1 U	1 U	4.3	190	1.73	0.08 U	1.51	1 U	0.2 U	0.2 U	3.9	5.2
	6/3/2016	Primary	29800	0.5 U	14.4	283	1.97	0.578	42	368	69900	1370	7.22	32.9	1.29	0.378	0.333	154	169
	9/15/2016	Primary	25 U	0.5 U	0.633 J	11.8	0.1 U	0.04 U	0.4 U	1.58	119	0.167 J	0.04 U	0.5 U	0.5 U	0.1 U	0.1 U	5.6	2 U
	12/19/2016	Primary	58.6	0.5 U	0.678 J	13.2	0.1 U	0.04 U	0.422 J	2.18	239	1.7	0.04 U	0.667 J	0.5 U	0.1 U	0.1 U	5.77	2.09 J
	8/12/2020	Primary	--	--	1.37	--	--	--	--	--	--	87	--	--	--	--	--	--	--
	3/1/2021	Primary	279	0.5 U	0.797	15.1	0.1 U	0.0197	0.5 U	17.1	1260	67.7	0.109	1.21 J	0.5 U	0.0125 J+	0.1 U	8.71	6.65
MW-6	2/8/2002	Primary	--	1 U	8.35	--	1 U	1 U	9.97	16.8	--	30.3	0.2 U	11.6	1 U	1 U	1 U	--	54.5
	5/29/2002	Primary	--	1 U	15.3	--	1 U	1 U	5.87	10.8	--	16.3	0.2 U	20	1 U	1 U	1 U	--	29.1
	8/30/2005	Primary	--	1 UJ	7.66	--	1 U	1 U	16	13.9 J	--	36.9	0.357	13.1	2 U	1 U	1 U	--	36.5
	12/15/2005	Primary	--	1 U	1.17	--	1 U	1 U	1 UJ	2 U	--	1.24	0.2 U	3.42	2 UJ	1 U	1 U	--	5.63
	2/23/2016	Primary	50 U	1 U	1 U	16.1	0.2 U	1 U	1 UJ	1 U	524	0.2 U	0.08 U	4.87	1 U	0.2 U	0.2 U	1 U	4 U
	6/6/2016	Primary	25 U	0.5 U	0.689 J	18.9	0.1 U	0.0444 J	0.4 U	1 U	2820	0.111 J	0.04 U	6.5	1	0.1 U	0.1 U	3.12	12.2
	9/15/2016	Primary	25 U	0.5 U	0.5 U	19.8	0.1 U	0.0444 J	0.4 U	0.5 U	849	0.1 U	0.04 U	6.07	0.5 U	0.1 U	0.1 U	0.611 J	2.99 J
	12/19/2016	Primary	25 U	0.5 U	1.34	22.4	0.1 U	0.04 U	0.4 U	0.6 J	9540	0.167 J	0.04 U	5.53	0.5 U	0.1 U	0.1 U	1.68	3.69 J
	8/12/2020	Primary	--	--	0.598	--	--	--	--	--	--	1.81	--	--	--	--	--	--	--
	3/1/2021	Primary	43.6 J	0.5 U	0.772	36	0.1 U	0.0322	0.5 U	1.99 J	4760	0.392	0.04 U	8.84	0.5 U	0.009 U	0.1 U	9.88	2 U
MW-8	2/24/2016	Primary	50 U	1 U	1 U	25.3	0.2 U	1 U	1 U	1 U	1280	0.2 U	0.08 U	11	1 U	0.2 U	0.2 U	1 U	4.53
	6/6/2016	Primary	25 U	0.5 U	2.27	28.8	0.1 U	0.04 U	0.4 U	1 U	23600	0.1 U	0.04 U	1.3	0.5 U	0.1 U	0.1 U	0.5 U	11.8
	9/15/2016	Primary	25 U	0.5 U	3.3	32.2	0.1 U	0.04 U	0.433 J	0.5 U	14600	0.1 U	0.04 U	2.69	0.5 U	0.1 U	0.1 U	0.5 U	3.41 J
	12/19/2016	Primary	25.2 J	0.5 U	2.42	32.8	0.1 U	0.04 U	0.4 U	0.989 J	9250	0.1 U	0.04 U	2.8	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	8/12/2020	Primary	--	--	4.66	--	--	--	--	--	--	0.346	--	--	--	--	--	--	--
	3/1/2021	Primary	156	0.5 U	4.47	43.7	0.1 U	0.009 U	0.868 J	1.16 J	19900	0.364	0.04 U	1.58 J	0.5 U	0.009 U	0.1 U	1 U	2 U

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Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
CENTRAL PARCEL MONITORING WELLS																			
Dissolved Metals																			
MW-4	2/7/2002	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2.15	--	1 U	0.2 U	8.05	1.39	1 U	1 U	--	16.2
	5/28/2002	Primary	--	1 U	1 U	--	1 U	1 U	1 U	1.58	--	1 U	0.2 U	4.18	1.21	1 U	1 U	--	7.68
	8/30/2005	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	3.34	2 U	1 U	1 U	--	5 U
	12/15/2005	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	4.94	2 U	1 U	1 U	--	5 U
	2/23/2016	Primary	50 U	1 U	2.6	36.5	0.2 U	0.2 U	1 U	2 U	39300	0.2 U	0.08 U	4.4	2 U	0.2 U	0.2 U	1 U	10.7
	6/3/2016	Primary	25 U	0.5 U	0.5 U	13.5	0.1 U	0.1 U	0.5 U	0.722 J	269	0.1 U	0.04 U	1.6	1 U	0.1 U	0.1 U	1.57	14.8
	9/15/2016	Primary	25 U	0.5 U	0.5 U	11.8	0.1 U	0.04 U	0.5 U	1.24	186	0.1 U	0.04 U	3.12	0.5 U	0.1 U	0.1 U	1.34	5.14
	12/20/2016	Primary	25 U	0.5 U	0.5 U	11.4	0.1 U	0.1 U	0.5 U	0.822 J	207	0.1 U	0.04 U	2.36	0.5 U	0.1 U	0.1 U	1.13	4.68
	8/12/2020	Primary	--	--	0.18	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
	3/1/2021	Primary	25 U	0.5 U	0.178	24.9	0.1 U	0.0188	0.5 U	1.07 J	25 U	0.1 U	0.04 U	1.83 J	0.5 U	0.009 U	0.1 U	1 U	7.1
MW-5	2/8/2002	Primary	--	1 U	1 U	--	1 U	1 U	1	2 U	--	1 U	0.2 U	3.32	1 U	1 U	1 U	--	8.75
	5/28/2002	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2.5	--	1 U	0.219	2 U	1 U	1 U	1 U	--	5 U
	8/29/2005	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	2.41	2 U	1 U	1 U	--	5 U
	12/15/2005	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	2 U	2 U	1 U	1 U	--	5 U
	2/24/2016	Primary	50 U	1 U	1 U	15.4	0.2 U	0.2 U	1 U	3.9	109	0.6	0.08 U	1.61	2 U	0.2 U	0.2 U	3.77	5.19
	6/3/2016	Primary	32.5 J	0.578 J	0.833 J	12.4	0.1 U	0.1 U	0.5 U	4.58	182	0.744	0.04 U	1.42	1.02 J	0.1 U	0.1 U	5.4	16.2
	9/15/2016	Primary	25 U	0.5 U	0.567 J	11.9	0.1 U	0.04 U	0.5 U	1.74	119	0.156 J	0.04 U	0.5 U	0.5 U	0.1 U	0.1 U	5.3	2.36 J
	12/19/2016	Primary	25 U	0.5 U	0.556 J	12.1	0.1 U	0.04 U	0.5 U	1.56	114	0.167 J	0.04 U	0.5 U	0.5 U	0.1 U	0.1 U	5.68	2.26 J
	8/12/2020	Primary	--	--	0.397	--	--	--	--	--	--	0.86	--	--	--	--	--	--	--
	3/1/2021	Primary	25 U	0.5 U	0.402	13	0.1 U	0.0198	0.5 U	4.55	25 U	1.35	0.04 U	1 U	0.5 U	0.009 U	0.1 U	4.2	5.66
MW-6	2/8/2002	Primary	--	1 U	2.01	--	1 U	1.1	2.84	3.9	--	7.34	0.2 U	6.23	1	1 U	1 U	--	23.8
	5/29/2002	Primary	--	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	0.2 U	13.9	1 U	1 U	1 U	--	8.42
	8/30/2005	Primary	--	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	0.2 U	4.79	2 U	1 U	1 U	--	5 U
	12/15/2005	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	3.55	2 U	1 U	1 U	--	5.12
	2/23/2016	Primary	50 U	1 U	1 U	14.9	0.2 U	0.2 U	1 U	2 U	836	0.2 U	0.08 U	5.16	2 U	0.2 U	0.2 U	1 U	4 U
	6/6/2016	Primary	25 U	0.511 J	0.5 U	17.4	0.1 U	0.1 U	0.5 U	1 U	190	0.1	0.04 U	6.39	0.944 J	0.1 U	0.1 U	0.5 U	3.24 J
	9/15/2016	Primary	25 U	0.5 U	0.5 U	19.3	0.1 U	0.04 U	0.5 U	0.744 J	779	0.1 U	0.04 U	6.52	0.5 U	0.1 U	0.1 U	0.5 U	3.86 J
	12/19/2016	Primary	25 U	0.5 U	1.24	22.7	0.1 U	0.04 U	0.5 U	0.5 U	8680	0.1 U	0.04 U	5.61	0.5 U	0.1 U	0.1 U	1.23	4.63
	8/12/2020	Primary	--	--	0.345	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
	3/1/2021	Primary	25 U	0.5 U	0.208	31.2	0.1 U	0.026	0.5 U	1.55 J	406	0.1 U	0.04 U	7.82	0.5 U	0.009 U	0.1 U	1.35 J	2.09 J
MW-8	2/24/2016	Primary	50 U	1 U	1 U	24.8	0.2 U	0.2 U	1 U	2 U	1260	0.2 U	0.08 U	11.7	2 U	0.2 U	0.2 U	1 U	4.61
	6/6/2016	Primary	25 U	0.5 U	2.49	29.3	0.1 U	0.1 U	0.5 U	0.5 U	23500	0.1 U	0.04 U	1.27	1 U	0.1 U	0.1 U	0.5 U	11.7
	9/15/2016	Primary	25 U	0.5 U	3	31.8	0.1 U	0.04 U	0.5 U	0.5 U	14500	0.1 U	0.04 U	2.39	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	12/19/2016	Primary	25 U	0.5 U	1.94	29.4	0.1 U	0.04 U	0.5 U	0.533	7190	0.1 U	0.04 U	2.67	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	8/12/2020	Primary	--	--	3.65	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
	3/1/2021	Primary	25 U	0.5 U	3.87	32.1	0.1 U	0.009 U	0.5 U	1.81 J	16700	0.107 J	0.04 U	1.44 J	0.5 U	0.009 U	0.1 U	1 U	2 U

Please see notes at end of table.

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Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
EAST PARCEL MONITORING WELLS																			
Total Metals																			
MW-7	2/8/2002	Primary	--	1.91	14.0	--	1.44	1 U	43.6	97.6	--	81.4	0.4 U	43.2	1.67	1 U	1 U	--	146
	5/29/2002	Primary	--	2.16	35.6	--	2.97	1 U	96.5	163	--	222	0.284	96.8	1.87	1 U	1 U	--	299
	8/29/2005	Primary	--	1.12 J	22.6	--	4.88	0.138 U	230	287 J	--	272	0.325	205	2.66	1 U	1 U	--	471 J
	12/16/2005	Primary	--	1 U	15.0	--	1 U	1 U	9.2 J	10	--	10.5	0.2 U	9.22	2 UJ	1 U	1 U	--	18.5
	2/24/2016	Primary	54.7	1 U	11.3	98.1	0.2 U	1 U	1 U	1 U	40800	0.2 U	0.08 U	1.2	1 U	0.2 U	0.2 U	1 U	4 U
	6/6/2016	Primary	58.7	0.5 U	10.4	97.8	0.1 U	0.04 U	0.4 U	1 U	38600	0.156 J	0.04 U	1.26	0.6 J	0.1 U	0.1 U	0.622 J	2 U
	9/15/2016	Primary	25 U	0.5 U	10.0	91.5	0.1 U	0.04 U	0.4 U	0.5 U	38700	0.1 U	0.04 U	1.3	0.5 U	0.1 U	0.1 U	0.511 J	2 U
	12/19/2016	Primary	28.9 J	0.5 U	10.8	99.4	0.1 U	0.04 U	0.4 U	0.5 U	42000	0.1 U	0.04 U	1.29	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	8/14/2020	Primary	--	--	10.7	--	--	--	--	--	--	0.892	--	--	--	--	--	--	--
	3/1/2021	Primary	34.9 J	0.5 U	12.2	122	0.1 U	0.009 U	0.5 U	1 U	48600	0.121 J	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2 U
MW-9	2/24/2016	Primary	50 U	1 U	1.74	24.5	0.2 U	1 U	1 U	1 U	8870	0.2 U	0.08 U	1 U	1 U	0.2 U	0.2 U	1 U	4 U
	2/24/2016	Duplicate	50 U	1 U	1.86	25.3	0.2 U	1 U	1 U	1 U	9590	0.2 U	0.08 U	1 U	1 U	0.2 U	0.2 U	1 U	4 U
	6/6/2016	Duplicate	25 U	0.822 J	1.83	25.3	0.1 U	0.04 U	0.4 U	1 U	8730	0.122 J	0.04 U	0.9 J	0.8 J	0.1 U	0.1 U	0.622 J	10.5
	6/6/2016	Primary	25 U	0.5 U	1.80	25.8	0.1 U	0.04 U	0.4 U	1 U	9190	0.111 J	0.04 U	0.956 J	0.5 U	0.1 U	0.1 U	0.522 J	10.6
	9/15/2016	Duplicate	25 U	0.5 U	2.01	19.3	0.1 U	0.04 U	0.4 U	0.5 U	9840	0.1 U	0.04 U	0.689 J	0.5 J	0.1 U	0.1 U	0.5 J	2
	9/15/2016	Primary	25 U	0.5 U	1.81	19.3	0.1 U	0.04 U	0.4 U	0.5 U	8850	0.1 U	0.04 U	0.922 J	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	12/20/2016	Duplicate	25 U	0.5 U	2.86	18.7	0.1 U	0.04 U	0.4 U	1.16	10600	0.1 U	0.04 U	0.5 U	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	12/20/2016	Primary	25 U	0.5 U	2.78	18.5	0.1 U	0.04 U	0.4 U	4.19	11400	0.143 J	0.04 U	0.5 U	0.5 U	0.1 U	0.1 U	0.5 U	2.78 J
	8/14/2020	Primary	--	--	3.43	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
	3/1/2021	Primary	25 U	0.5 U	4.56	36.4	0.1 U	0.009 U	0.5 U	1 U	15200	0.1 U	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	4.07

Please see notes at end of table.

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Concentration in µg/L																
PHSS Cleanup Level			--	--	0.018	--	--	0.094	11	2.74	--	0.54	--	--	--	--	--	20	36.5
JSCS Screening Level Value			50	6	--	--	--	--	--	--	--	--	0.77	16	5	0.12	--	--	--
EAST PARCEL MONITORING WELLS																			
Dissolved Metals																			
MW-7	2/8/2002	Primary	--	1 U	1 U	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	3.72	1.1	1 U	1 U	--	6.86
	5/29/2002	Primary	--	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	0.2 U	3.06	1 U	1 U	1 U	--	5 U
	8/29/2005	Primary	--	1 U	12.3	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	5.58	2 U	1 U	1 U	--	5 U
	12/16/2005	Primary	--	1 U	13.8	--	1 U	1 U	1 U	2 U	--	1 U	0.2 U	2.14	2 U	1 U	1 U	--	5 U
	2/24/2016	Primary	50 U	1 U	11.1	97.1	0.2 U	0.2 U	1 U	2 U	42000	0.2 U	0.08 U	1.46	2 U	0.2 U	0.2 U	1 U	4 U
	6/6/2016	Primary	25 U	0.5 U	2.99	40.5	0.1 U	0.1 U	0.5 U	1 U	22000	0.1 U	0.04 U	1.19	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	9/15/2016	Primary	25 U	0.5 U	9.76	90.8	0.1 U	0.04 U	0.5 U	0.5 U	38300	0.1 U	0.04 U	1.22	0.5 U	0.1 U	0.1 U	0.5 U	2.03 J
	12/19/2016	Primary	25 U	0.5 U	11.3	99.4	0.1 U	0.04 U	0.5 U	0.567 J	42100	0.1 U	0.04 U	1.21	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	8/14/2020	Primary	--	--	9.65	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
3/1/2021	Primary	25 U	0.5 U	11.3	110	0.1 U	0.009 U	0.5 U	1 U	45100	0.1 U	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2 U	
MW-9	2/24/2016	Primary	50 U	1 U	1.66	24.7	0.2 U	0.2 U	1 U	2 U	8940	0.2 U	0.08 U	1 U	2 U	0.2 U	0.2 U	1 U	4 U
	2/24/2016	Duplicate	50 U	1.03	1.51	24.6	0.2 U	0.2 U	1 U	2 U	8750	0.2 U	0.08 U	1 U	2 U	0.2 U	0.2 U	1 U	4 U
	6/6/2016	Duplicate	25 U	0.5 U	1.87	25.8	0.1 U	0.1 U	0.5 U	0.5 U	9190	0.1 U	0.04 U	0.94 J	1 U	0.1 U	0.1 U	0.54 J	5.16
	6/6/2016	Primary	25 U	0.5 U	1.64	26.6	0.1 U	0.1 U	0.5 U	0.5 U	9580	0.1 U	0.04 U	1.12	1 U	0.1 U	0.1 U	0.6 J	10.4
	9/15/2016	Duplicate	25 U	0.5 U	1.98	19.1	0.1 U	0.04 U	0.5 U	0.5 U	9330	0.1 U	0.04 U	0.789 J	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	9/15/2016	Primary	25 U	0.5 U	1.77	19.3	0.1 U	0.04 U	0.5 U	0.5 U	9550	0.1 U	0.04 U	1.37	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	12/20/2016	Duplicate	25 U	0.5 U	2.10	13.8	0.1 U	0.1 U	0.5 U	0.5 U	7880	0.1 U	0.04 U	0.533 J	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	12/20/2016	Primary	25 U	0.5 U	2.06	13.7	0.1 U	0.1 U	0.5 U	0.5 U	7820	0.1 U	0.04 U	0.544	0.5 U	0.1 U	0.1 U	0.5 U	2 U
	8/14/2020	Primary	--	--	3.32	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
	3/1/2021	Primary	25 U	0.5 U	2.11	22.6	0.1 U	0.009 U	0.5 U	1 U	10700	0.1 U	0.04 U	1 U	0.5 U	0.009 U	0.1 U	1 U	2.67 J

Please see notes at end of table.

Table A-1
Total and Dissolved Metals in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

- 1. µg/L = micrograms per liter
- 2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
- 3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
- 4. -- = Not sampled or no screening level available for analyte.
- 5. B = Analyte was detected in the associated method blank. Result may be biased high
- 6. J = Estimated value after QA review.
- 7. U = Non-detected value.
- 8. UJ = The not detected result is estimated. The reporting limit may be inaccurate or imprecise.
- 9. J+ = Result is estimated and may be biased high.
- 10. Shading indicates a concentration equal to or exceeding a screening level

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph thylene	Anthracene	BaP Eq	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(b+k) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene
			Concentration in µg/L											
PHSS Cleanup Level			--	2.1	23	--	0.73	0.00012	0.0012	0.00012	0.0012	--	0.4	0.0013
JSCS Screening Level Value			--	--	--	0.2	--	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES														
B-1	5/8/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-2	5/11/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-3	5/10/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-4	5/8/2001	Primary	--	5 U	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-5	5/10/2001	Primary	--	5 UJ	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-6	5/11/2001	Primary	--	--	--	--	--	--	--	--	--	--	--	--
B-7	5/10/2001	Primary	--	--	4.57	0.1 U	0.209	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-8	5/11/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DP-1 (35-40)	12/14/2016	Primary	0.0762 U	0.0762 U	0.0381 U	0.0381 U	0.0381 U	0.0286 UT	0.0381 U	0.0571 U	0.0571 U	--	0.0381 U	0.0571 U
DP-2 (40-45)	12/29/2016	Primary	0.885 J	1.01 J	2.45	0.0381 U	0.104	0.0286 UT	0.0381 U	0.0571 U	0.0571 U	--	0.0381 U	0.0571 U
DP-3 (35-40)	12/21/2016	Primary	0.0373 J	0.0647 J	0.0451	0.0094 U	0.0096 J	0.0142 TA	0.0094 U	0.014 U	0.0155 J	--	0.0094 U	0.014 U
DP-4 (40-45)	1/5/2017	Primary	0.454	0.614	0.964	0.0408 U	0.0843	0.1094 T	0.0509 J	0.0743 J	0.0727 J	--	0.0408 U	0.0612 U
DP-5 (40-45)	1/5/2017	Primary	1.07	0.193	3.88	0.0861	0.203	0.2875 T	0.123 J	0.206	0.181 J	--	0.155	0.0588 U
DP-5 (55-60)	1/5/2017	Primary	0.0441	0.0403	0.0871	0.0094 U	0.0094 U	0.0232 T	0.0094 U	0.016 J	0.0156 J	--	0.0094 U	0.014 U
SE/E-11	12/6/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-12	12/9/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-13	12/9/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
TB-1W	10/20/1995	Primary	--	10 U	1 U	2 U	0.2	0.05 UT	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.1 U

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3- cd)pyrene	Naphthalene	Phenanthrene	Pyrene
			Concentration in µg/L							
PHSS Cleanup Level			0.0013	0.00012	6.2	3.9	0.0012	12	6.3	10
JSCS Screening Level Value			--	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES										
B-1	5/8/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.283	0.1 U	0.1 U
B-2	5/11/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-3	5/10/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.216	0.1 U	0.1 U
B-4	5/8/2001	Primary	0.1 U	0.2 U	0.1 U	0.393	0.1 U	0.563	0.637	0.1 U
B-5	5/10/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-6	5/11/2001	Primary	--	--	--	--	--	2 U	--	--
B-7	5/10/2001	Primary	0.1 U	0.2 U	0.403	1.56	0.1 U	4.53	1.5	0.261
B-8	5/11/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DP-1 (35-40)	12/14/2016	Primary	0.0381 U	0.0381 U	0.0381 U	0.0381 U	0.0381 U	0.0762 U	0.0381 U	0.0381 U
DP-2 (40-45)	12/29/2016	Primary	0.0381 U	0.0381 U	0.065 J	0.935	0.0381 U	1.13 J	0.712	0.0567 J
DP-3 (35-40)	12/21/2016	Primary	0.0094 U	0.0094 U	0.0242	0.033	0.0094 U	0.0384 J	0.0669	0.0193
DP-4 (40-45)	1/5/2017	Primary	0.0438 J	0.0408 U	0.188	0.458	0.0408 U	0.0816 U	0.612	0.185
DP-5 (40-45)	1/5/2017	Primary	0.16 J	0.0392	0.62	0.685	0.114	0.737	2.15	0.804
DP-5 (55-60)	1/5/2017	Primary	0.0094 U	0.0094 U	0.018 J	0.0346	0.0094 U	0.109 B	0.0592	0.0222
SE/E-11	12/6/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-12	12/9/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-13	12/9/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TB-1W	10/20/1995	Primary	0.1 U	0.1 U	1.1	0.2 U	0.1 U	1 U	2.5	1.1

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph thylene	Anthracene	BaP Eq	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(b+k) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene
			Concentration in µg/L											
PHSS Cleanup Level			--	2.1	23	--	0.73	0.00012	0.0012	0.00012	0.0012	--	0.4	0.0013
JSCS Screening Level Value			--	--	--	0.2	--	--	--	--	--	--	--	--
CENTRAL PARCEL GRAB SAMPLES														
B-10	5/15/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-11	5/15/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-12	5/14/2001	Primary	--	5 U	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-13	5/14/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.4337 T	0.218	0.265	0.264	0.456	0.225	0.192
B-14	5/14/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-16	5/7/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-17	5/8/2001	Primary	--	5 U	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-18	5/7/2001	Primary	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U
B-20	5/7/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-9	5/15/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
SE/E-10	12/8/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-7	12/7/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-8	12/7/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-9	12/8/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
TB-2W	10/19/1995	Primary	--	10 U	1 U	1 U	0.1 U	0.1206 TA	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.1 U
WC-4	9/30/2010	Primary	0.01 J	0.019 B	0.016	0.034	0.12	0.4402 T	0.36	0.32	0.24	--	0.11	0.19
WC-5	9/30/2010	Primary	0.012 J	0.02 B	0.38	0.087	0.32	0.187 T	0.21	0.13	0.11	--	0.069	0.089
WC-6	9/30/2010	Primary	0.0073 J	0.013 JB	0.0053 J	0.0039 J	0.019	0.0166 T	0.012 J	0.0086 J	0.0093 J	--	0.0069 J	0.0092 J
WC-7	9/29/2010	Primary	0.015	0.022 B	1.6	0.076	0.32	0.0307 T	0.096	0.018	0.016	--	0.0049 J	0.016
WC-8	9/29/2010	Primary	0.031	0.033 B	0.097	0.019	0.036	0.1129 T	0.072	0.081	0.061	--	0.05	0.057

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3- cd)pyrene	Naphthalene	Phenanthrene	Pyrene
			Concentration in µg/L							
PHSS Cleanup Level			0.0013	0.00012	6.2	3.9	0.0012	12	6.3	10
JSCS Screening Level Value			--	--	--	--	--	--	--	--
CENTRAL PARCEL GRAB SAMPLES										
B-10	5/15/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-11	5/15/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-12	5/14/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-13	5/14/2001	Primary	0.245	0.2 U	0.426	0.1 U	0.183	0.1 U	0.139	0.492
B-14	5/14/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-16	5/7/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.269	0.1 U	0.1 U
B-17	5/8/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-18	5/7/2001	Primary	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
B-20	5/7/2001	Primary	0.1 U	0.2 U	0.1	0.1 U	0.1 U	0.201	0.1 U	0.126
B-9	5/15/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.116	0.135
SE/E-10	12/8/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-7	12/7/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-8	12/7/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-9	12/8/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TB-2W	10/19/1995	Primary	0.1	0.1 U	0.2	0.2 U	0.1 U	1 U	0.3	0.4
WC-4	9/30/2010	Primary	0.33	0.047	0.65	0.026	0.11	0.028 B	0.22 B	0.67
WC-5	9/30/2010	Primary	0.23	0.018	1.7	0.066	0.059	0.044 B	1.9 B	1.8
WC-6	9/30/2010	Primary	0.012 J	0.0051 J	0.087	0.0057 J	0.0069 J	0.02 B	0.064 B	0.1
WC-7	9/29/2010	Primary	0.1	0.0017 U	1.6	0.21	0.0038 J	0.039 B	2.2 B	1.7
WC-8	9/29/2010	Primary	0.068	0.014	0.12	0.039	0.04	0.12 B	0.082 B	0.26

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph thylene	Anthracene	BaP Eq	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(b+k) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene
			Concentration in µg/L											
PHSS Cleanup Level			--	2.1	23	--	0.73	0.00012	0.0012	0.00012	0.0012	--	0.4	0.0013
JSCS Screening Level Value			--	--	--	0.2	--	--	--	--	--	--	--	--
EAST PARCEL GRAB SAMPLES														
B-23	5/15/2001	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-26	5/11/2001	Primary	--	11.8 U	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-27	5/11/2001	Primary	--	--	0.1 UJ	0.1 UJ	0.1 UJ	0.3311 T	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
B-28	5/17/2001	Primary	--	5 U	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-29	5/17/2001	Primary	--	5 U	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-30	5/17/2001	Primary	--	26.6	15.8	5 U	5 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HA-4	12/12/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-1	12/5/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-2	12/5/1988	Primary	--	--	10 U	10 U	1 U	5 UT	10 U	10 U	2 U	10 U	10 U	2 U
SE/E-3	12/6/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-4	12/6/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-5	12/6/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	--	10 U	10 U	--
SE/E-6	12/7/1988	Primary	--	--	10 U	10 U	10 U	5 UT	10 U	10 U	2 U	10 U	10 U	2 U
TB-3W	10/19/1995	Primary	--	10 U	1 U	1 U	0.1 U	0.1206 TA	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.1 U
TB-4W	10/19/1995	Primary	--	10 U	1 U	2 U	0.1	0.2908 T	0.2	0.2	0.2 U	0.2 U	0.2	0.1 U
TRENCH 2	9/28/2010	Primary	0.0092 J	0.014 B	0.0053 J	0.0055 J	0.0055 J	0.0203 T	0.0091 J	0.013 J	0.01 J	--	0.016	0.0094 J
TRENCH 4	9/29/2010	Primary	0.019	0.018 B	0.32	0.055	0.025	0.0081 T	0.012 J	0.0042 J	0.0061 J	--	0.0035 J	0.003 J

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3- cd)pyrene	Naphthalene	Phenanthrene	Pyrene
			Concentration in µg/L							
PHSS Cleanup Level			0.0013	0.00012	6.2	3.9	0.0012	12	6.3	10
JSCS Screening Level Value			--	--	--	--	--	--	--	--
EAST PARCEL GRAB SAMPLES										
B-23	5/15/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-26	5/11/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-27	5/11/2001	Primary	0.1 UJ	0.2 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
B-28	5/17/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-29	5/17/2001	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
B-30	5/17/2001	Primary	0.1 U	0.2 U	9.65	13.3	0.1 U	38.1	25.6	1.13
HA-4	12/12/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-1	12/5/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-2	12/5/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-3	12/6/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-4	12/6/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-5	12/6/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SE/E-6	12/7/1988	Primary	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TB-3W	10/19/1995	Primary	0.1	0.1 U	0.6	0.2 U	0.1 U	1 U	0.8	0.6
TB-4W	10/19/1995	Primary	0.3	0.1 U	1.4	0.2 U	0.1	1 U	1.5	1.2
TRENCH 2	9/28/2010	Primary	0.012 J	0.0043 J	0.015	0.0065 J	0.0096 J	0.023 B	0.016 B	0.017
TRENCH 4	9/29/2010	Primary	0.031	0.0018 J	0.023	0.33	0.0024 J	0.065 B	0.51 B	0.036

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph thylene	Anthracene	BaP Eq	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(b+k) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene
			Concentration in µg/L											
PHSS Cleanup Level			--	2.1	23	--	0.73	0.00012	0.0012	0.00012	0.0012	--	0.4	0.0013
JSCS Screening Level Value			--	--	--	0.2	--	--	--	--	--	--	--	--
WEST PARCEL MONITORING WELLS														
MW-1	2/7/2002	Primary	--	--	0.343	0.331	0.162	0.2568 T	0.151	0.131	0.1 U	0.1 U	0.109	0.1 U
	5/28/2002	Primary	--	--	0.189	0.174	0.1 U	0.4751 T	0.242	0.302	0.24	0.438	0.321	0.198
	8/30/2005	Primary	--	--	0.1 U	0.1 U	0.1 U	0.3337 T	0.273	0.406	0.328	0.634	0.23	0.306
	12/16/2005	Primary	--	--	0.1 UJ	0.1 U	0.1 U	1.6495 T	0.113	0.19 J	0.193	0.359	0.168	0.166
	2/23/2016	Primary	0.152 U	0.152 U	0.122	0.0762 U	0.0762 U	0.1394 T	0.0762 U	0.114 U	0.114 U	--	0.0762 U	0.114 U
	6/3/2016	Primary	0.08 U	0.08 U	0.0658 U	0.105 U	0.0519	0.45 T	0.197	0.463	0.463	--	0.454	0.181
	9/14/2016	Primary	0.0762 U	0.0762 U	0.0381 U	0.0637 J	0.0414 JB	0.6125 T	0.162	0.355	0.325	--	0.344	0.116
	12/20/2016	Primary	0.0748 U	0.0748 U	0.115	0.0374 U	0.0374 U	0.057 UT	0.0618 J	0.0991 J	0.0809 J	--	0.0795	0.0594 J
	12/3/2019	Primary	--	0.0541	0.109	0.242	0.171	4.2711	1.15 E	3.17 E	1.73 E	--	2.95 E	1.25 E
	8/11/2020	Primary	--	0.0355	0.102	0.0351	0.0253	0.331	0.108	0.256	0.145	--	0.247	0.11
	2/24/2021	Primary	--	0.0077	0.184	0.0042 J	0.0074	0.0171	0.0074	0.0122	0.0099	--	0.0131	0.0042 J
	2/24/2021	Duplicate	--	0.0085	0.229	0.0036 J	0.0077	0.0126	0.006	0.0091	0.0075	--	0.0098	0.003 J
MW-2	2/7/2002	Primary	--	--	22.5	0.1 U	1.5	0.178 T	0.173	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	5/28/2002	Primary	--	--	13.5	0.1 U	1.17	0.1759 T	0.152	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8/30/2005	Primary	--	--	3.87	0.1 U	0.395	0.2283 T	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	12/16/2005	Primary	--	--	3.95 J	0.1 U	0.553	0.1656 TA	0.176	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
	2/23/2016	Primary	0.558	0.931	0.8	0.0762 U	0.158	0.1046 T	0.0762 U	0.114 U	0.114 U	--	0.0762 U	0.114 U
	6/3/2016	Primary	0.414	0.745	0.682 U	0.0385 U	0.256	0.0766 T	0.168	0.131	0.172	--	0.0514	0.0937
	9/14/2016	Primary	0.471	0.716	0.929	0.05 U	0.211	0.1904 T	0.0746 J	0.075 U	0.075 U	--	0.05 U	0.075 U
	12/20/2016	Primary	0.375 J	0.511 J	0.921	0.0374 U	0.157 J	0.057 UT	0.0876 J	0.0669 J	0.0798 J	--	0.0374 U	0.0561 U
	12/3/2019	Primary	--	1.41 E	2.79 E	0.0313	0.0972	0.0578	0.0941	0.0381	0.0402	--	0.0186	0.0254
	8/11/2020	Primary	--	3.1	2.1	0.0127	0.194	0.0621	0.0855	0.0423	0.0494	--	0.0216	0.0318
	2/23/2021	Primary	--	4.08	2.32	0.0135	0.164	0.1351	0.202	0.0902	0.121	--	0.0459	0.0501
MW-3	2/7/2002	Primary	--	--	5.16	0.1 U	0.217	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	5/28/2002	Primary	--	--	4.01	0.1 U	0.202	0.3654 T	0.203	0.213	0.152	0.295	0.242	0.143
	8/30/2005	Primary	--	--	5.23	0.198	0.304	0.4207 T	0.685	1.08	0.901	1.591	0.571	0.69
	12/16/2005	Primary	--	--	4.18 J	0.1 U	0.138	0.4903 T	0.207	0.26 J	0.239	0.437	0.207	0.198
	2/23/2016	Primary	0.155 U	0.155 U	2.02	0.0777 U	0.0777 U	0.4001 T	0.0777 U	0.117 U	0.117 U	--	0.0777 U	0.117 U
	6/3/2016	Primary	0.08 U	0.08 U	2.72 U	0.0421 U	0.0588	0.2891 T	0.0926	0.146	0.14	--	0.094	0.0737
	9/14/2016	Primary	0.0762 U	0.0762 U	4.69	0.0548 J	0.0787	0.1984 T	0.126	0.222	0.191 M-02	--	0.199	0.0842 J
	12/20/2016	Primary	0.0748 U	0.0748 U	2.35	0.0737 J	0.0947	0.0585 UT	0.171 J	0.288	0.273 J	--	0.267	0.107 J
	12/3/2019	Primary	--	0.0377	5.43 E	0.0738	0.0743	0.7636	0.294 E	0.595 E	0.338 E	--	0.501 E	0.211
	8/12/2020	Primary	--	0.0266	4.85	0.0342	0.0378	0.2249	0.106	0.174	0.104	--	0.168	0.0727
	8/12/2020	Duplicate	--	0.0288	6.93	0.0306	0.0411	0.1346	0.0706	0.103	0.062	--	0.101	0.0391
	3/1/2021	Primary	--	0.0274	5.31	0.0731	0.0426	0.175	0.0785	0.123	0.0831	--	0.121	0.0344

Please see notes at end of table.

Table A-2
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Portland, Oregon

Sample ID	Date	Sample Type	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3- cd)pyrene	Naphthalene	Phenanthrene	Pyrene
			Concentration in µg/L							
PHSS Cleanup Level			0.0013	0.00012	6.2	3.9	0.0012	12	6.3	10
JSCS Screening Level Value			--	--	--	--	--	--	--	--
WEST PARCEL MONITORING WELLS										
MW-1	2/7/2002	Primary	0.217	0.2 U	0.82	0.255	0.1 U	1.54	1.11	1.12
	5/28/2002	Primary	0.306	0.2 U	0.609	0.1 U	0.226	0.534	0.532	0.781
	8/30/2005	Primary	0.407	0.2 U	0.73	0.1 U	0.171	0.206	0.357	1.17
	12/16/2005	Primary	0.17	0.2 U	0.206	0.1 U	0.113	0.1 U	0.1 U	0.317
	2/23/2016	Primary	0.0762 U	0.0762 U	0.0762 U	0.0762 U	0.0762 U	0.152 U	0.0762 U	0.0809
	6/3/2016	Primary	0.266	0.0467	0.309	0.04 U	0.347	0.08 U	0.158	0.528
	9/14/2016	Primary	0.215	0.0381 U	0.261	0.0381 U	0.259	0.0762 U	0.122	0.414
	12/20/2016	Primary	0.0541 J	0.0374 U	0.0691 J	0.0374 U	0.0669 J	0.0748 U	0.106	0.127
	12/3/2019	Primary	1.63 E	0.568 E	1.84 E	0.0499	2.31 E	0.157	0.794 E	2.4 E
	8/11/2020	Primary	0.142	0.0310	0.196	0.0196	0.175	0.0411	0.143	0.267
	2/24/2021	Primary	0.0112	0.00220 J	0.0169	0.0413 J+	0.00873 J	0.00886 J+	0.0637	0.0427
	2/24/2021	Duplicate	0.00896	0.00148 J	0.0138	0.0428 J+	0.00620 J	0.00885 J+	0.0603	0.0396
MW-2	2/7/2002	Primary	0.178	0.2 U	1.91	12.5	0.1 U	633	11	1.32
	5/28/2002	Primary	0.159	0.2 U	1.62	8.24	0.1 U	205	8.5	1.07
	8/30/2005	Primary	0.11	0.2 U	0.994	2.56	0.1 U	27.5	3.99	0.673
	12/16/2005	Primary	0.192	0.2 U	1.65	2.36	0.1 U	9.29	2.55	1.19
	2/23/2016	Primary	0.0762 U	0.0762 U	0.434	0.566	0.0762 U	1.67	1.09	0.357
	6/3/2016	Primary	0.176	0.0385 U	0.796	0.561 U	0.0502	1.26 U	1.47	0.619
	9/14/2016	Primary	0.0538 J	0.05 U	0.737	0.702	0.05 U	1.25	1.85	0.505
	12/20/2016	Primary	0.0831 J	0.0374 U	0.614	0.398	0.0374 U	1.28 J	0.724	0.48
	12/3/2019	Primary	0.121	0.0048 J	1.35 E	0.745 E	0.0111	8.57 E	0.0459	0.798 E
	8/11/2020	Primary	0.100	0.00433 J	0.692	1.33	0.0158	17.2	1.92	0.432
	2/23/2021	Primary	0.215	0.00858	1.39	1.08	0.0332	16.8	1.00	1.05
	MW-3	2/7/2002	Primary	0.1 U	0.2 U	0.555	1.33	0.1 U	1.75	1.7
5/28/2002		Primary	0.292	0.2 U	1.09	1.49	0.152	1.02	2.93	1.22
8/30/2005		Primary	0.958	0.2 U	1.77	0.634	0.443	1.61	2.05	2.2
12/16/2005		Primary	0.31	0.2 U	0.715	0.547	0.138	0.297	1.11	0.877
2/23/2016		Primary	0.0777 U	0.0777 U	0.254	0.311	0.0777 U	0.155 U	0.602	0.264
6/3/2016		Primary	0.0999	0.04 U	0.477	0.292 U	0.0828	0.08 U	0.826	0.547
9/14/2016		Primary	0.194	0.0381 U	0.49	0.209	0.153	0.0762 U	0.586	0.602
12/20/2016		Primary	0.215 J	0.045 J	0.545	0.329	0.214	0.0748 U	0.933	0.67
12/3/2019		Primary	0.434 E	0.072	0.909 E	0.297 E	0.309 E	0.0781	1.09 E	1.1 E
8/12/2020		Primary	0.154	0.0185	0.392	0.194	0.105	0.0503	0.614	0.484
8/12/2020		Duplicate	0.103	0.0115	0.381	0.215	0.0639	0.0530	0.757	0.443
3/1/2021		Primary	0.116	0.0287	0.337	0.202	0.0666	0.0408 J+	0.601	0.430

Please see notes at end of table.

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Portland, Oregon

Sample ID	Date	Sample Type	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph thylene	Anthracene	BaP Eq	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(b+k) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene
			Concentration in µg/L											
PHSS Cleanup Level			--	2.1	23	--	0.73	0.00012	0.0012	0.00012	0.0012	--	0.4	0.0013
JSCS Screening Level Value			--	--	--	0.2	--	--	--	--	--	--	--	--
CENTRAL PARCEL MONITORING WELLS														
MW-4	2/7/2002	Primary	--	--	0.1 U	0.1 U	0.1 U	0.2376 T	0.1 U	0.122	0.1 U	0.1 U	0.117	0.1 U
	5/28/2002	Primary	--	--	0.1 U	0.1 U	0.1 U	0.2316 TA	0.1 U	0.116	0.1 U	0.1 U	0.137	0.1 U
	8/30/2005	Primary	--	--	0.1 U	0.1 U	0.1 U	0.3282 T	0.1 U	0.134	0.1 U	0.1 U	0.1 U	0.1 U
	12/15/2005	Primary	--	--	0.102 UJ	0.102 U	0.102 U	0.2918 T	0.102 U	0.189 J	0.122	0.246	0.31	0.124
	2/23/2016	Primary	0.0381 U	0.0381 U	0.019 U	0.019 U	0.019 U	0.007 UT	0.019 U	0.0286 U	0.0286 U	--	0.019 U	0.0286 U
	6/3/2016	Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	9/15/2016	Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	12/20/2016	Primary	0.0187 U	0.0187 U	0.0094 U	0.0094 U	0.0094 U	0.0143 UT	0.0094 U	0.014 U	0.014 U	--	0.0094 U	0.014 U
	MW-5	2/8/2002	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
5/28/2002		Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
8/29/2005		Primary	--	--	0.1 U	0.1 U	0.1 U	0.2199 TA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
12/15/2005		Primary	--	--	0.102 UJ	0.102 U	0.102 U	0.1 UT	0.102 U	0.102 UJ	0.102 U	0.102 U	0.102 U	0.102 U
2/24/2016		Primary	0.0385 U	0.0385 U	0.0192 U	0.0192 U	0.0192 U	0.007 UT	0.0192 U	0.0288 U	0.0288 U	--	0.0192 U	0.0288 U
6/3/2016		Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.001 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
9/15/2016		Primary	0.0190 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
12/19/2016		Primary	0.0187 U	0.0187 U	0.0094 U	0.0094 U	0.0094 U	0.0144 UT	0.0094 U	0.014 U	0.014 U	--	0.0094 U	0.014 U
MW-6	2/8/2002	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	5/29/2002	Primary	--	--	0.1 U	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8/30/2005	Primary	--	--	0.1 U	0.1 U	0.1 U	0.2156 TA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	12/15/2005	Primary	--	--	0.1 UJ	0.1 U	0.1 U	0.1 UT	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
	2/23/2016	Primary	0.0381 U	0.0381 U	0.019 U	0.019 U	0.019 U	0.007 UT	0.019 U	0.0286 U	0.0286 U	--	0.019 U	0.0286 U
	6/6/2016	Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.001 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	9/15/2016	Primary	0.0190 U	0.0190 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	12/19/2016	Primary	0.0187 U	0.0187 U	0.0094 U	0.0094 U	0.0094 U	0.0143 UT	0.0094 U	0.014 U	0.014 U	--	0.0094 U	0.014 U
	MW-8	2/24/2016	Primary	0.0385 U	0.0385 U	0.0192 U	0.0192 U	0.0192 U	0.007 UT	0.0192 U	0.0288 U	0.0288 U	--	0.0192 U
6/6/2016		Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
9/15/2016		Primary	0.0190 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
12/19/2016		Primary	0.0185 U	0.0185 U	0.0093 U	0.0093 U	0.0093 U	0.0144 UT	0.0093 U	0.0139 U	0.0139 U	--	0.0093 U	0.0139 U

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3- cd)pyrene	Naphthalene	Phenanthrene	Pyrene
			Concentration in µg/L							
PHSS Cleanup Level			0.0013	0.00012	6.2	3.9	0.0012	12	6.3	10
JSCS Screening Level Value			--	--	--	--	--	--	--	--
CENTRAL PARCEL MONITORING WELLS										
MW-4	2/7/2002	Primary	0.122	0.2 U	0.174	0.1 U	0.1 U	0.188	0.109	0.312
	5/28/2002	Primary	0.1 U	0.2 U	0.108	0.1 U	0.1 U	0.218	0.118	0.238
	8/30/2005	Primary	0.121	0.2 U	0.16	0.1 U	0.1 U	0.311	0.163	0.292
	12/15/2005	Primary	0.129	0.204 U	0.125	0.102 U	0.185	0.198	0.132	0.187
	2/23/2016	Primary	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0381 U	0.019 U	0.019 U
	6/3/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0095 U
	9/15/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0095 U
	12/20/2016	Primary	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0187 U	0.0098 J	0.0094 U
MW-5	2/8/2002	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	5/28/2002	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8/29/2005	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	12/15/2005	Primary	0.102 U	0.204 U	0.102 U	0.102 U	0.102 U	0.102 U	0.102 U	0.102 U
	2/24/2016	Primary	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0385 U	0.0192 U	0.0192 U
	6/3/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0095 U
	9/15/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0095 U
	12/19/2016	Primary	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0187 U	0.0094 U	0.0094 U
MW-6	2/8/2002	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	5/29/2002	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8/30/2005	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	12/15/2005	Primary	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	2/23/2016	Primary	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0381 U	0.019 U	0.019 U
	6/6/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0095 U
	9/15/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0213 JX	0.0095 U	0.0095 U
	12/19/2016	Primary	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0187 U	0.0094 U	0.0094 U
MW-8	2/24/2016	Primary	0.0192 U	0.0192 U	0.0325	0.0192 U	0.0192 U	0.0385 U	0.0283	0.0287
	6/6/2016	Primary	0.0095 U	0.0095 U	0.0198	0.0095 U	0.0095 U	0.019 U	0.0096 J	0.0225
	9/15/2016	Primary	0.0095 U	0.0095 U	0.0131 J	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0157 J
	12/19/2016	Primary	0.0093 U	0.0093 U	0.0147 J	0.0093 U	0.0093 U	0.037 U	0.0211	0.0199

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaph thylene	Anthracene	BaP Eq	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(b+k) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene
			Concentration in µg/L											
PHSS Cleanup Level			--	2.1	23	--	0.73	0.00012	0.0012	0.00012	0.0012	--	0.4	0.0013
JSCS Screening Level Value			--	--	--	0.2	--	--	--	--	--	--	--	--
EAST PARCEL MONITORING WELLS														
MW-35s	11/1/1999	Primary	--	--	1 U	1 U	1 U	--	1 U	1 U	1 U	--	6 U	1 U
MW-7	2/24/2016	Primary	0.0385 U	0.0385 U	0.0192 U	0.0192 U	0.0867	0.007 UT	0.0192 U	0.0288 U	0.0288 U	--	0.0192 U	0.0288 U
	6/6/2016	Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0149 J	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	9/15/2016	Primary	0.0190 U	0.019 U	0.0095 U	0.0095 U	0.0296 B	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	12/19/2016	Primary	0.0187 U	0.0187 U	0.0094 U	0.0094 U	0.0363	0.0144 UT	0.0094 U	0.014 U	0.014 U	--	0.0094 U	0.014 U
MW-9	2/24/2016	Primary	0.0381 U	0.0381 U	0.019 U	0.019 U	0.0418	0.0141 TA	0.0418 U	0.0286 U	0.0286 U	--	0.019 U	0.0286 U
	2/24/2016	Duplicate	0.381 U	0.381 U	0.019 U	0.019 U	0.0426	--	0.019 U	0.0286 U	0.0286 U	--	0.019 U	0.0286 U
	6/6/2016	Duplicate	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	--	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	6/6/2016	Primary	0.0206 U	0.0206 U	0.0103 U	0.0103 U	0.0103 U	0.0142 TA	0.0155 U	0.0155 U	0.0155 U	--	0.0103 U	0.0155 U
	9/15/2016	Duplicate	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	--	0.0104 J	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	9/15/2016	Primary	0.019 U	0.019 U	0.0095 U	0.0095 U	0.0095 U	0.0072 UT	0.0095 U	0.0143 U	0.0143 U	--	0.0095 U	0.0143 U
	12/20/2016	Duplicate	0.0187 U	0.0187 U	0.0094 U	0.0094 U	0.0098 J	--	0.0122 J	0.014 U	0.014 U	--	0.0094 U	0.014 U
	12/20/2016	Primary	0.0187 U	0.0187 U	0.0094 U	0.0094 U	0.0103 J	0.0143 UT	0.0146 J	0.014 U	0.014 U	--	0.0094 U	0.014 U

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
			Concentration in µg/L							
PHSS Cleanup Level			0.0013	0.00012	6.2	3.9	0.0012	12	6.3	10
JSCS Screening Level Value			--	--	--	--	--	--	--	--
EAST PARCEL MONITORING WELLS										
MW-35s	11/1/1999	Primary	1 U	6 U	1 U	1 U	6 U	1 U	1 U	1 U
MW-7	2/24/2016	Primary	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0192 U	0.0385 U	0.0192 U	0.0192 U
	6/6/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0095 U
	9/15/2016	Primary	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0113 J
	12/19/2016	Primary	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0094 U	0.0374 U	0.0094 U	0.0127 J
MW-9	2/24/2016	Primary	0.019 U	0.019 U	0.0816	0.019 U	0.019 U	0.0381 U	0.105	0.0991
	2/24/2016	Duplicate	0.019 U	0.019 U	0.0834	0.019 U	0.019 U	0.381 U	0.101	0.101
	6/6/2016	Duplicate	0.0095 U	0.0095 U	0.0283	0.0095 U	0.0095 U	0.019 U	0.0096 J	0.0435
	6/6/2016	Primary	0.0103 U	0.0103 U	0.0182 J	0.0103 U	0.0103 U	0.0206 U	0.0103 U	0.0255
	9/15/2016	Duplicate	0.0095 U	0.0095 U	0.0255	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0523
	9/15/2016	Primary	0.0095 U	0.0095 U	0.032	0.0095 U	0.0095 U	0.019 U	0.0095 U	0.0561
	12/20/2016	Duplicate	0.0094 U	0.0094 U	0.0404	0.0094 U	0.0094 U	0.0187 U	0.013 J	0.0796
	12/20/2016	Primary	0.01 J	0.0094 U	0.0408	0.0094 U	0.0094 U	0.0187 U	0.013	0.0724

Please see notes at end of table.

Table A-2
PAHs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

1. µg/L = micrograms per liter
2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
4. -- = Not sampled or no screening level available for analyte.
5. A = Summed value based on limited number of analytes. Calculated according to Appendix A of the Portland Harbor RI/FS, June 2016.
6. B = Analyte was detected in the associated method blank. Result may be biased high
7. J = Estimated value after QA review.
8. M-02 = the result is estimated due to matrix interference.
9. T = Result derived from >1 reported value. Calculated according to Appendix A of the Portland Harbor RI/FS, June 2016.
10. U = Non-detected value.
11. X = Surrogate recovery is not within method control limits
12. UJ = The not detected result is estimated. The reporting limit may be inaccurate or imprecise.
13. J+ = Result is estimated and may be biased high.
14. E = above the high calibration limit
15. BaP Eq = Benzo(a)pyrene Equivalent
16. HPAH = High Molecular Weight PAHs
17. LPAH = Low Molecular Weight PAHs
18. PAHs = Polycyclic Aromatic Hydrocarbons
19. Shading indicates a concentration equal to or exceeding a screening level

Table A-3
PCB Aroclors in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCB Aroclors
			Concentration in µg/L							
PHSS Cleanup Level			--	--	--	--	--	--	--	0.014
JSCS Screening Level Value			0.96	0.034	0.034	0.034	0.034	0.033	0.034	--
WEST PARCEL GRAB SAMPLES										
B-4	5/8/2001	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT
B-5	5/10/2001	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT
SE/E-11	12/6/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
SE/E-12	12/9/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	2.5	0.7 U	5.3 T
SE/E-13	12/9/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	1.6	0.7 U	4.4 T
SE/E-14	1/26/1989	Primary	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 UT
SE/E-19	1/27/1989	Primary	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3.5 UT
TB-1W	10/20/1995	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
CENTRAL PARCEL GRAB SAMPLES										
B-12	5/14/2001	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT
SE/E-10	12/8/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
SE/E-7	12/7/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
SE/E-8	12/7/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
SE/E-9	12/8/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
TB-2W	10/19/1995	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
WC-4	9/30/2010	Primary	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.035 UT
WC-5	9/30/2010	Primary	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.035 UT
WC-6	9/30/2010	Primary	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.035 UT
WC-7	9/29/2010	Primary	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.035 UT
WC-8	9/29/2010	Primary	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.035 UT

Please see notes at end of table.

Table A-3
PCB Aroclors in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCB Aroclors
			Concentration in µg/L							
PHSS Cleanup Level			--	--	--	--	--	--	--	0.014
JSCS Screening Level Value			0.96	0.034	0.034	0.034	0.034	0.033	0.034	--
EAST PARCEL GRAB SAMPLES										
HA-4	12/12/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
SE/E-1	12/5/1988	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
SE/E-17	1/26/1988	Primary	10 U	10 U	10 U	10 U	10 U	5 U	5 U	30 UT
SE/E-2	12/5/1988	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
SE/E-3	12/6/1988	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
SE/E-4	12/6/1988	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
SE/E-5	12/6/1988	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
SE/E-6	12/7/1988	Primary	1 U	1 U	1 U	1 U	0.9 U	0.8 U	0.7 U	3.2 UT
TB-3W	10/19/1995	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
TB-4W	10/19/1995	Primary	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 UT
TRENCH 2	9/28/2010	Primary	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.035 UT
TRENCH 4	9/29/2010	Primary	0.05 U	0.05 U	0.05 U	0.05 U	0.42 U	1.3	0.14 U	1.68 T
WEST PARCEL MONITORING WELLS										
MW-1	2/7/2002	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT
MW-2	2/7/2002	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT
MW-3	2/7/2002	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT
CENTRAL PARCEL MONITORING WELLS										
MW-6	2/8/2002	Primary	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 UT

Please see notes at end of table.

Table A-3
PCB Aroclors in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

1. µg/L = micrograms per liter
2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
4. T = Result derived from >1 reported value. Calculated according to Appendix A of the Portland Harbor RI/FS, June 2016.
5. U = Non-detected value.
6. Shading indicates a concentration equal to or exceeding a screening level
7. PCBs = Polychlorinated biphenyls.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES									WEST PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	MW-1				
			12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
Total PCB Congeners	0.014	--	0.000403	1.59	0.0206	0.497	1.26	0.361	0.000117	0.0188	0.00242	0.000816	0.00023916
2,3-DiCB-(5)	--	--	0.000048 U	0.000082 U	0.000046 U	0.000044 U	0.000041 U	0.000051 U	0.000098 U	0.000011 U	0.00011 U	0.000047 U	--
2,3'-DiCB-(6)	--	--	0.000046 U	0.00177	0.000034 U	0.00102	0.000906	0.000379	0.000098 U	0.000011 U	0.00011 U	0.000046 U	0.00000807 U
2,4-DiCB-(7)	--	--	0.000052 U	0.000233	0.000038 U	0.0001	0.00016	0.00011 U	0.000098 U	0.000012 U	0.00012 U	0.000051 U	--
2,4'-DiCB-(8)	--	--	0.000049 U	0.00397	0.00008	0.0019	0.00179	0.00108	0.00002 J	0.000012 J	0.00011 U	0.000048 U	--
2,5-DiCB-(9)	--	--	0.000044 U	0.000314	0.000033 U	0.00015 U	0.000161	0.00015 U	0.000098 U	0.000011 U	0.00011 U	0.000044 U	--
2,6-DiCB-(10)	--	--	0.000092 U	0.000107	0.000084 U	0.00012 U	0.00011 U	0.00011 U	0.000098 U	0.00003 U	0.00016 U	0.00094 U	--
22'33'44'55'6'-NonaCB-(206)	--	--	0.000013 U	0.00602	0.0000687	0.00112	0.00399	0.000774	0.000098 U	0.000287	0.000026 U	0.000018 U	0.00000561 U
22'33'44'55'-OctaCB-(194)	--	--	0.00001 U	0.0158	0.0002	0.00404	0.01	0.00197	0.000098 U	0.000167	0.0000204	0.0000098 U	0.00000716 U
22'33'44'566'-NonaCB-(207)	--	--	0.00001 U	0.000707	0.0000114	0.000128	0.000466	0.000093	0.000098 U	0.00002 U	0.0000029 U	0.000015 U	0.00000375 U
22'33'44'56-OctaCB-(195)	--	--	0.000011 U	0.00685	0.000086	0.0018	0.00424	0.00093	0.000098 U	0.000056	0.0000068	0.000011 U	0.00000716 U
22'33'44'56'-OctaCB-(196)	--	--	0.000013 U	0.00943	0.000117	0.00255	0.00613	0.00125	0.000098 U	0.000078	0.000011 U	0.000016 U	--
22'33'44'5-HeptaCB-(170)	--	--	0.0000073 U	0.0305	0.000368	0.00863	0.0198	0.00469	0.000098 U	0.0003	0.0000443	0.000011 U	0.00000369 U
22'33'44'66-OctaCB-(197)	--	--	0.000011 U	0.000907	0.000026	0.000146	0.000534	0.000099	0.000098 U	0.000017 U	0.0000056 U	0.000014 U	0.00000431 U
22'33'455'66'-NonaCB-(208)	--	--	0.000012 U	0.00151	0.0000135	0.000206	0.00113	0.000202	0.000098 U	0.000078	0.0000085 U	0.000018 U	0.00000375 U
22'33'455'-HeptaCB-(172)	--	--	0.0000095 U	0.00539	0.0000819	0.00155	0.00355	0.000805	0.000098 U	0.000052	0.0000089 U	0.000014 U	0.00000369 U
22'33'4566'-OctaCB-(200)	--	--	0.0000092 U	0.0024	0.000028	0.000688	0.00129	0.000361	0.000098 U	0.000015 U	0.0000059 U	0.000011 U	0.00000431 U
22'33'45'66'-OctaCB-(201)	--	--	0.0000095 U	0.00312	0.000042	0.000704	0.00164	0.000435	0.000098 U	0.000018 U	0.0000054 U	0.000012 U	0.00000431 U
22'33'456'-HeptaCB-(174)	--	--	0.0000092 U	0.0387	0.000542	0.0112	0.0209	0.00589	0.000098 U	0.000267	0.0000366	0.000014 U	0.00000369 U
22'33'45'6-HeptaCB-(175)	--	--	0.000013 U	0.00149	0.0000233	0.000463	0.00146	0.000237	0.000098 U	0.000024 U	0.0000061 U	0.000014 U	0.00000567 U
22'33'45'6'-HeptaCB-(177)	--	--	0.0000094 U	0.0317	0.000478	0.00816	0.0157	0.00427	0.000098 U	0.000147	0.0000227	0.000014 U	0.00000369 U
22'33'45'-HexaCB-(130)	--	--	0.000017 U	0.00627	0.0000895	0.00172	0.00516	0.00121	0.000098 U	0.000124	0.0000159	0.000017 U	0.00000519 U
22'33'466'-HeptaCB-(176)	--	--	0.0000098 U	0.00627	0.0000936	0.00169	0.00329	0.000939	0.000098 U	0.000033	0.0000045 U	0.000011 U	0.00000567 U
22'33'46-HexaCB-(131)	--	--	0.000019 U	0.0011 U	0.0000086 U	0.00015 U	0.00058 U	0.00017 U	0.000098 U	0.000026 U	0.0000089 U	0.000019 U	--
22'33'46'-HexaCB-(132)	--	--	0.000019 U	0.0422	0.000566	0.0119	0.0302	0.00913	0.000098 U	0.00074	0.0000814	0.000039	--
22'33'4-PentaCB-(82)	--	--	0.0000077 U	0.00188	0.000012 U	0.000461	0.00331	0.000831	0.000098 U	0.000075 U	0.0000137	0.000012 U	0.00000346 U
22'33'55'66'-OctaCB-(202)	--	--	0.00001 U	0.0042	0.000056	0.00102	0.0023	0.00054	0.000098 U	0.000042 U	0.0000064 U	0.000012 U	0.00000431 U
22'33'55'6-HeptaCB-(178)	--	--	0.000013 U	0.0151	0.000235	0.00329	0.00701	0.00194	0.000098 U	0.000051 U	0.0000064 U	0.000015 U	0.00000567 U
22'33'55'-HexaCB-(133)	--	--	0.000016 U	0.00969	0.000143	0.00181	0.00417	0.00123	0.000098 U	0.000022 U	0.0000077 U	0.000016 U	0.00000519 U
22'33'566'-HeptaCB-(179)	--	--	0.0000097 U	0.0272	0.000368	0.00635	0.0122	0.00379	0.000098 U	0.000101	0.0000144	0.000011 U	0.00000567 U
22'33'66'-HexaCB-(136)	--	--	0.000017 U	0.0253	0.000276	0.00654	0.0152	0.00472	0.000098 U	0.000171	0.0000197	0.0000099 U	0
22'33'6-PentaCB-(84)	--	--	0.0000088 U	0.00571	0.0000399	0.00178	0.00889	0.00277	0.000098 U	0.000259	0.000037	0.000019 U	--
22'344'55'6-OctaCB-(203)	--	--	0.000014 U	0.0122	0.000159	0.00312	0.00704	0.00153	0.000098 U	0.00012 U	0.000016 U	0.000017 U	--
22'344'566'-OctaCB-(204)	--	--	0.0000096 U	0.000029 U	0.000011 U	0.000015 U	0.000019 U	0.000021 U	0.000098 U	0.000015 U	0.0000053 U	0.000012 U	0.00000431 U
22'344'56-HeptaCB-(181)	--	--	0.00001 U	0.00012 U	0.000004 U	0.000025 U	0.000044 U	0.000031 U	0.000098 U	0.000017 U	0.0000091 U	0.000015 U	0.00000369 U
22'344'56'-HeptaCB-(182)	--	--	0.000013 U	0.00064	0.0000118	0.000153	0.00002 U	0.000068 U	0.000098 U	0.000022 U	0.0000061 U	0.000015 U	--
22'344'5'6-HeptaCB-(183)	--	--	0.000008 U	0.0211	0.000269	0.0064	0.0134	0.00316	0.000098 U	0.000136	0.0000205	0.000012 U	0.00000567 U
22'344'5-HexaCB-(137)	--	--	0.000019 U	0.001 U	0.0000107	0.00041	0.00234	0.000567	0.000098 U	0.000102	0.0000125	0.000019 U	0.00000519 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES									WEST PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	MW-1				
			12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'344'66'-HeptaCB-(184)	--	--	0.00001 U	0.000046 U	0.000037 U	0.000097 U	0.000028 U	0.000021 U	0.000098 U	0.000017 U	0.0000047 U	0.000012 U	0.00000567 U
22'3455'6-HeptaCB-(185)	--	--	0.000011 U	0.00013 U	0.0000043 U	0.000324	0.00079	0.000035 U	0.000098 U	0.000028	0.00001 U	0.000017 U	0.00000369 U
22'34'55'6-HeptaCB-(187)	--	--	0.000013 U	0.0769	0.00127	0.0186	0.0365	0.0101	0.000098 U	0.000324 U	0.0000489	0.000015 U	--
22'3455'-HexaCB-(141)	--	--	0.000016 U	0.0193	0.000241	0.0056	0.0132	0.00348	0.000098 U	0.000285	0.0000381	0.000016 U	0.00000519 U
22'34'55'-HexaCB-(146)	--	--	0.000014 U	0.0591	0.000903	0.0128	0.0259	0.00798	0.000098 U	0.000239	0.0000276	0.000014 U	--
22'34566'-HeptaCB-(186)	--	--	0.000011 U	0.00003 U	0.000004 U	0.000011 U	0.000018 U	0.000024 U	0.000098 U	0.000019 U	0.0000052 U	0.000013 U	0.00000567 U
22'34'566'-HeptaCB-(188)	--	--	0.000009 U	0.000288	0.0000039 U	0.000051	0.000326	0.00005 U	0.000098 U	0.000013 U	0.000006 U	0.00001 U	0.00000567 U
22'3456-HexaCB-(142)	--	--	0.000017 U	0.00098 U	0.0000076 U	0.00014 U	0.00054 U	0.00009 U	0.000098 U	0.000024 U	0.0000082 U	0.000017 U	--
22'345'6-HexaCB-(144)	--	--	0.000022 U	0.0047	0.00005 U	0.00148	0.00364	0.000918	0.000098 U	0.000057	0.0000085	0.0000073 U	0.00000486 U
22'34'56'-HexaCB-(148)	--	--	0.000022 U	0.00375	0.000047 U	0.000663	0.00172	0.000531	0.000098 U	0.000042 U	0.0000034 U	0.0000073 U	0.00000486 U
22'3466'-HexaCB-(145)	--	--	0.000019 U	0.000036 U	0.0000063 U	0.000037 U	0.00006	0.00001 U	0.000098 U	0.000034 U	0.0000029 U	0.0000065 U	0.00000486 U
22'34'66'-HexaCB-(150)	--	--	0.00002 U	0.00196	0.0000271	0.000352	0.00177	0.00045	0.000098 U	0.000033 U	0.0000028 U	0.0000066 U	0.00000486 U
22'346'-PentaCB-(89)	--	--	0.0000074 U	0.00016 U	0.0000025 U	0.000077	0.000235	0.000066	0.000098 U	0.000021 U	0.0000047 U	0.000012 U	0.00000346 U
22'34'-TetraCB-(42)	--	--	0.0000086 U	0.00298	0.0000408	0.00171	0.00274	0.00123	0.000098 U	0.000034	0.0000038 U	0.000011 U	--
22'355'-PentaCB-(92)	--	--	0.000007 U	0.0239	0.000235	0.00623	0.0147	0.00448	0.000098 U	0.000174	0.0000254	0.000013	--
22'3566'-HexaCB-(152)	--	--	0.000016 U	0.000031 U	0.000005 U	0.000031 U	0.000506	0.0000927	0.000098 U	0.00003 U	0.0000024 U	0.0000053 U	0.00000486 U
22'356'-PentaCB-(94)	--	--	0.0000084 U	0.00024	0.0000029 U	0.000077 U	0.00167	0.00035	0.000098 U	0.000023 U	0.0000053 U	0.000014 U	0.00000475 U
22'35'6-PentaCB-(95)	--	--	0.000019 U	0.0393	0.000356	0.0106	0.0325	0.0113	0.000098 U	0.000626	0.000105	0.000066	--
22'35-TetraCB-(43)	--	--	0.000011 U	0.000546	0.0000058	0.000285	0.000019 U	0.000111	0.000098 U	0.000019 U	0.0000041 U	0.000014 U	--
22'366'-PentaCB-(96)	--	--	0.000005 U	0.000204	0.0000043 U	0.000144	0.00154	0.000373	0.000098 U	0.000023 U	0.0000022 U	0.000005 U	0.00000475 U
22'36'-TetraCB-(46)	--	--	0.0000085 U	0.000777	0.0000072 U	0.000966	0.000971	0.000506	0.000098 U	0.000018 U	0.0000037 U	0.000011 U	0.00000375 U
22'3-TriCB-(16)	--	--	0.000037 U	0.00458	0.000061	0.00234	0.00203	0.00107	0.000098 U	0.000036	0.000023 U	0.00003 U	--
22'44'56'-HexaCB-(154)	--	--	0.00002 U	0.0147	0.000206	0.00299	0.00643	0.00205	0.000098 U	0.000036 U	0.0000032 U	0.0000067 U	0.00000486 U
22'44'66'-HexaCB-(155)	--	--	0.000011 U	0.000054	0.0000047 U	0.000027 U	0.000129	0.0000231	0.000098 U	0.000014 U	0.0000031 U	0.0000036 U	0.00000486 U
22'45'6-PentaCB-(103)	--	--	0.0000062 U	0.00441	0.0000388	0.00127	0.00356	0.00108	0.000098 U	0.000016 U	0.0000039 U	0.00001 U	0.00000475 U
22'45-TetraCB-(48)	--	--	0.0000076 U	0.00214	0.000025	0.000945	0.00155	0.000501	0.000098 U	0.000019	0.0000034 U	0.0000098 U	--
22'466'-PentaCB-(104)	--	--	0.0000031 U	0.0000076 U	0.0000035 U	0.000036 U	0.000558	0.000123	0.000098 U	0.0000092 U	0.0000026 U	0.0000031 U	0.00000475 U
22'4-TriCB-(17)	--	--	0.000024 U	0.00535	0.000053 U	0.00307	0.00274	0.00171	0.000098 U	0.000025	0.000018 U	0.00002 U	0.00000497 U
22'55'-TetraCB-(52)	--	--	0.0000201	0.0237	0.000216	0.0118	0.0337	0.0112	0.000098 U	0.000375	0.0000701	0.0000428	--
22'66'-TetraCB-(54)	--	--	0.0000073 U	0.00011 U	0.0000041 U	0.000324	0.00257	0.000722	0.000098 U	0.0000079 U	0.0000054 U	0.0000076 U	0.00000375 U
22'6-TriCB-(19)	--	--	0.000018 U	0.0012	0.000026	0.000635	0.000611	0.000473	0.000098 U	0.0000148	0.000018 U	0.000015 U	0.00000497 U
22'-DiCB-(4)	--	--	0.000093 U	0.00379	0.000095 U	0.0013	0.0021	0.00239	0.000098 U	0.000021 U	0.00024 U	0.000095 U	--
233'44'55'6-OctaCB-(205)	--	--	0.000011 U	0.00086 U	0.000016	0.00024	0.000632	0.00015	0.000098 U	0.000012 U	0.0000047 U	0.00011 U	0.00000716 U
233'44'55'-HeptaCB-(189)	--	--	0.0000075 U	0.00105	0.0000127	0.0003	0.000754	0.000176	0.000098 U	0.000013 U	0.0000054 U	0.0000086 U	0.00000369 U
233'44'56-HeptaCB-(190)	--	--	0.0000072 U	0.00565	0.0000769	0.0017	0.00382	0.000832	0.000098 U	0.000048	0.000008	0.000011 U	0.00000369 U
233'44'5'6-HeptaCB-(191)	--	--	0.000007 U	0.00163	0.0000151	0.0003 U	0.000971	0.000197	0.000098 U	0.000012 U	0.0000066 U	0.000011 U	0.00000369 U
233'44'6-HexaCB-(158)	--	--	0.000011 U	0.00578	0.0000822	0.0016	0.0061	0.0012 U	0.000098 U	0.000191	0.0000231	0.000011 U	--
233'44'-PentaCB-(105)	--	--	0.000011 U	0.00446	0.0000382	0.00117	0.0102	0.00225	0.000098 U	0.000327	0.0000486	0.0000247	0.00000487 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES									WEST PARCEL MONITORING WELLS				
Sample ID	PHSS	JSCS	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	MW-1				
Date	Cleanup	Screening	12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
233'455'6-HeptaCB-(192)	--	--	0.0000085 U	0.0001 U	0.0000033 U	0.000021 U	0.000038 U	0.000026 U	0.000098 U	0.000014 U	0.0000077 U	0.000013 U	0.00000369 U
233'455'-HexaCB-(159)	--	--	0.0000054 U	0.000855	0.000019	0.000362	0.00058	0.000155	0.000098 U	0.000015 U	0.0000026 U	0.000004 U	0.00000519 U
233'4'55'-HexaCB-(162)	--	--	0.000006 U	0.000068 U	0.000005 U	0.000035 U	0.00016 U	0.000034	0.000098 U	0.000016 U	0.0000028 U	0.0000044 U	--
233'456-HexaCB-(160)	--	--	0.000014 U	0.00074 U	0.0000059 U	0.0001 U	0.00041 U	0.000068 U	0.000098 U	0.000018 U	0.000007 U	0.000014 U	--
233'45'6-HexaCB-(161)	--	--	0.000012 U	0.0007 U	0.0000053 U	0.000098 U	0.00038 U	0.000064 U	0.000098 U	0.000014 U	0.0000056 U	0.000012 U	--
233'4'5'6-HexaCB-(164)	--	--	0.000011 U	0.00751	0.000116	0.00213	0.00609	0.00149	0.000098 U	0.000145	0.000018	0.000011 U	--
233'45-PentaCB-(106)	--	--	0.0000023 U	0.000031 U	0.0000034 U	0.000028 U	0.0001 U	0.000036 U	0.000098 U	0.000012 U	0.000003 U	0.0000041 U	--
233'4'5-PentaCB-(107)	--	--	0.0000021 U	0.0029	0.000037	0.000795	0.00294	0.000775	0.000098 U	0.000055	0.0000075	0.0000037 U	--
233'4'5'-PentaCB-(122)	--	--	0.0000024 U	0.000264	0.0000035 U	0.000047	0.00045	0.000093	0.000098 U	0.000013 U	0.0000031 U	0.0000043 U	0.00000325 U
233'4'-Tetra CB(56)	--	--	0.000006 U	0.0037	0.0000537	0.00154	0.00339	0.000977	0.000098 U	0.000063	0.0000098	0.0000042 U	--
233'4-TetraCB-(55)	--	--	0.0000062 U	0.000033 U	0.0000025 U	0.00003 U	0.000033 U	0.000013 U	0.000098 U	0.000017 U	0.0000069 U	0.0000044 U	0.00000375 U
233'55'6-HexaCB-(165)	--	--	0.000014 U	0.00081 U	0.0000077 U	0.00012	0.00079	0.000086	0.000098 U	0.000018 U	0.0000067 U	0.000014 U	--
233'55'-PentaCB-(111)	--	--	0.0000055 U	0.000513	0.0000058	0.000068 U	0.000328	0.000093	0.000098 U	0.000014 U	0.0000037 U	0.0000088 U	--
233'56-PentaCB-(112)	--	--	0.000005 U	0.000088 U	0.0000017 U	0.00005 U	0.000024 U	0.000014 U	0.000098 U	0.000014 U	0.0000036 U	0.0000081 U	--
233'5-TetraCB-(57)	--	--	0.0000054 U	0.000097	0.0000021 U	0.000046 U	0.000144	0.000028 U	0.000098 U	0.000015 U	0.0000058 U	0.0000037 U	0.00000375 U
233'5'-TetraCB-(58)	--	--	0.0000059 U	0.000031 U	0.0000026 U	0.000028 U	0.000031 U	0.000012 U	0.000098 U	0.000017 U	0.0000065 U	0.0000041 U	0.00000375 U
23'44'55'-HexaCB-(167)	--	--	0.0000075 U	0.00142	0.000015 U	0.000451	0.00197	0.000435	0.000098 U	0.000063	0.0000097	0.0000055 U	0.00000519 U
2344'5-PentaCB-(114)	--	--	0.0000029 U	0.000493	0.0000031 U	0.000114	0.00069	0.000188	0.000098 U	0.000016 U	0.0000031 U	0.0000051 U	0.00000325 U
23'44'5-PentaCB-(118)	--	--	0.0000301	0.0155	0.000135	0.00462	0.0305	0.00766	0.000098 U	0.000853	0.000128	0.0000597	--
23'44'5'-PentaCB-(123)	--	--	0.0000033 U	0.000043 U	0.0000035 U	0.000038 U	0.00014 U	0.000069	0.000098 U	0.000018 U	0.0000035 U	0.0000058 U	0.00000346 U
2344'-TetraCB -(60)	--	--	0.000006 U	0.000603	0.0000104 J	0.00033	0.000853	0.000201	0.000098 U	0.000028	0.0000069 U	0.0000042 U	--
23'44'-TetraCB-(66)	--	--	0.0000051 U	0.00784	0.0000976	0.00302	0.00853	0.00281	0.000098 U	0.000149 U	0.0000201	0.0000124	--
23'455'-PentaCB-(120)	--	--	0.0000047 U	0.00106	0.0000159	0.000237	0.000498	0.000166	0.000098 U	0.000012 U	0.0000032 U	0.0000076 U	0.00000346 U
23'45'6-PentaCB-(121)	--	--	0.0000056 U	0.000312	0.000004 U	0.000078	0.000319	0.000077	0.000098 U	0.000014 U	0.0000036 U	0.0000091 U	0.00000475 U
234'5-TetraCB-(63)	--	--	0.0000051 U	0.000345	0.000004 U	0.000154	0.000444	0.000149	0.000098 U	0.000015 U	0.0000056 U	0.0000036 U	0.00000375 U
23'45-TetraCB-(67)	--	--	0.000005 U	0.000295	0.0000032 U	0.000137	0.000318	0.0001	0.000098 U	0.000014 U	0.0000055 U	0.0000035 U	0.00000375 U
23'45'-TetraCB-(68)	--	--	0.000016 U	0.00106	0.000024 U	0.000153	0.00136	0.00036	0.000098 U	0.000016 U	0.0000059 U	0.000006 U	0.00000375 U
234'6-TetraCB-(64)	--	--	0.0000057 U	0.0039	0.0000514	0.00222	0.00423	0.00133	0.000098 U	0.000064	0.00001 U	0.0000073 U	--
234'-TriCB-(22)	--	--	0.0000044 U	0.0035	0.0000658	0.00206	0.00185	0.000875	0.000098 U	0.000028	0.0000061 U	0.0000047 U	0.00000586 U
23'4-TriCB-(25)	--	--	0.0000037 U	0.00134	0.0000207	0.00224	0.00155	0.000743	0.000098 U	0.00001 U	0.0000054 U	0.000004 U	0.00000586 U
23'55'-TetraCB-(72)	--	--	0.0000051 U	0.000882	0.0000075	0.00013	0.000676	0.000269	0.000098 U	0.000015 U	0.0000061 U	0.0000035 U	--
23'5'6-TetraCB-(73)	--	--	0.0000055 U	0.000054	0.0000022 U	0.000029	0.0000099 U	0.0000302	0.000098 U	0.000011 U	0.0000024 U	0.000007 U	0.00000375 U
235-TriCB-(23)	--	--	0.0000044 U	0.00004 U	0.000004 U	0.000025 U	0.000035 U	0.0000079 U	0.000098 U	0.000013 U	0.0000065 U	0.0000048 U	0.00000586 U
23'5'-TriCB-(34)	--	--	0.0000039 U	0.000098	0.0000034 U	0.000055	0.000069	0.0000323	0.000098 U	0.000012 U	0.000005 U	0.0000042 U	0.00000586 U
236-TriCB-(24)	--	--	0.000019 U	0.000161	0.000013 U	0.000014 U	0.0000067 U	0.000013 U	0.000098 U	0.000012 U	0.000015 U	0.000015 U	--
23'6-TriCB-(27)	--	--	0.000015 U	0.000561	0.00001 U	0.000396	0.000436	0.000325	0.000098 U	0.00001 U	0.000012 U	0.000012 U	--
24'5-TriCB-(31)	--	--	0.0000072 U	0.00828	0.000125	0.0059	0.00544	0.00224	0.000098 U	0.00006	0.0000149	0.0000084 U	0.00000586 U
24'6-TriCB-(32)	--	--	0.000015 U	0.00257	0.0000332	0.00311	0.00359	0.00172	0.000098 U	0.0000198	0.000011 U	0.000012 U	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES									WEST PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	MW-1				
			12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
2-MonoCB-(1)	--	--	0.0000051 U	0.000396	0.00002 U	0.000136	0.000769	0.000546	0.000098 U	0.000012	0.00001 U	0.0000031 U	0.00000208 U
3,3'-DiCB-(11)	--	--	0.000046 U	0.000165	0.000081 J	0.000038 U	0.000137	0.000317	0.000031 J	0.000078 J	0.00011 U	0.000046 U	0.000235
3,5-DiCB-(14)	--	--	0.000044 U	0.000041 U	0.000034 U	0.000035 U	0.000032 U	0.000036 U	0.000098 U	0.000011 U	0.0001 U	0.000044 U	0.00000831 U
33'44'55'-HexaCB-(169)	--	--	0.0000076 U	0.000233	0.0000045 U	0.000041 U	0.00019 U	0.000032 U	0.000098 U	0.000021 U	0.0000028 U	0.0000055 U	0.0000052 U
33'44'5-PentaCB-(126)	--	--	0.000003 U	0.000039 U	0.0000032 U	0.000035 U	0.00013 U	0.000045 U	0.000098 U	0.000017 U	0.0000032 U	0.0000053 U	0.00000573 U
33'44'-TetraCB-(77)	--	--	0.0000068 U	0.000454	0.0000076	0.000196	0.000437	0.000107	0.000098 U	0.000022 U	0.0000064 U	0.0000048 U	0.00000522 U
33'455'-PentaCB-(127)	--	--	0.0000021 U	0.000031 U	0.0000031 U	0.000028 U	0.0001 U	0.000036 U	0.000098 U	0.000012 U	0.0000028 U	0.0000038 U	0.00000487 U
33'45-TetraCB-(78)	--	--	0.0000051 U	0.000028 U	0.000002 U	0.000026 U	0.000029 U	0.000011 U	0.000098 U	0.000015 U	0.0000058 U	0.0000035 U	0.00000359 U
33'45'-TetraCB(79)	--	--	0.0000044 U	0.000261	0.0000039	0.000067	0.000369	0.000087	0.000098 U	0.000013 U	0.0000051 U	0.0000031 U	0.00000359 U
33'4-TriCB-(35)	--	--	0.0000038 U	0.000106	0.0000034 U	0.000066	0.000058 U	0.0000305	0.000098 U	0.000011 U	0.0000052 U	0.0000041 U	0.00000586 U
33'55'-TetraCB-(80)	--	--	0.0000048 U	0.000025 U	0.0000019 U	0.000023 U	0.000025 U	0.0000097 U	0.000098 U	0.000014 U	0.0000051 U	0.0000033 U	0.00000375 U
33'5-TriCB-(36)	--	--	0.0000034 U	0.000033 U	0.0000029 U	0.000021 U	0.000029 U	0.0000065 U	0.000098 U	0.0000092 U	0.0000044 U	0.0000037 U	0.00000586 U
344'5-TetraCB-(81)	--	--	0.000007 U	0.000038 U	0.0000022 U	0.000035 U	0.000038 U	0.000015 U	0.000098 U	0.000023 U	0.0000065 U	0.0000049 U	0.00000359 U
344'-TriCB-(37)	--	--	0.0000067 U	0.00139	0.0000244	0.000883	0.000997	0.000375	0.000098 U	0.000028	0.0000067 U	0.0000072 U	0.00000586 U
345-TriCB-(38)	--	--	0.0000037 U	0.000036 U	0.0000033 U	0.000023 U	0.000031 U	0.0000071 U	0.000098 U	0.000011 U	0.0000052 U	0.000004 U	0.00000586 U
34'5-TriCB-(39)	--	--	0.000004 U	0.000054 U	0.0000035 U	0.000024 U	0.000134	0.0000393	0.000098 U	0.000011 U	0.0000054 U	0.0000043 U	0.00000586 U
3-MonoCB-(2)	--	--	0.0000038 U	0.000031	0.000021 U	0.000011 U	0.000026 U	0.000018 U	0.000098 U	0.0000062 U	0.0000095 U	0.0000028 U	0.00000349 U
4,4'-DiCB-(15)	--	--	0.000073 U	0.00103	0.000036 U	0.00113	0.000569	0.000389	0.000098 U	0.000021 U	0.00014 U	0.000072 U	0.00000831 U
4-MonoCB-(3)	--	--	0.0000042 U	0.000076	0.00002 U	0.000045	0.000112	0.000086	0.000098 U	0.0000074 U	0.00001 U	0.0000031 U	0.00000349 U
DecaCB-(209)	--	--	0.000012 U	0.00445	0.000024 U	0.000428	0.00294	0.000416	0.000098 U	0.000032	0.0000373	0.00002 U	0.00000414 U
DiCB-(12)+(13)	--	--	0.000049 U	0.0002 U	0.000037 U	0.000328	0.00018 U	0.000096	0.0002 U	0.000012 U	0.00012 U	0.000049 U	0.00000831 U
HeptaCB-(171)+(173)	--	--	0.0000098 U	0.00933	0.00015	0.00286	0.00613	0.00148	0.0002 U	0.00009	0.0000142	0.000015 U	--
HeptaCB-(180)+(193)	--	--	0.000011 U	0.0787	0.000997	0.0229	0.0488	0.0113	0.0002 U	0.00061	0.0000856	0.000015 U	--
HexaCB-(128)+(166)	--	--	0.000014 U	0.00721	0.000112	0.00195	0.00852	0.00212	0.0002 U	0.000325	0.0000396	0.000014 U	--
HexaCB-(129)+(138)+(163)	--	--	0.000045 U	0.0996	0.00153	0.0302	0.0852	0.0207	0.00029 U	0.00198	0.000238	0.000093	--
HexaCB-(134)+(143)	--	--	0.000018 U	0.0047	0.0000556	0.00095	0.00223	0.000938	0.0002 U	0.000107	0.0000084 U	0.000018 U	0.00000519 U
HexaCB-(135)+(151)	--	--	0.000024 U	0.0938	0.00118	0.0242	0.0468	0.0148	0.0002 U	0.000406	0.0000533	0.0000236	--
HexaCB-(139)+(140)	--	--	0.000016 U	0.00461	0.0000794	0.00111	0.00241	0.00071 U	0.0002 U	0.000035	0.0000073 U	0.000016 U	--
HexaCB-(147)+(149)	--	--	0.00002 U	0.133	0.00189	0.0404	0.0898	0.0268	0.0002 U	0.0013	0.000138	0.000052 U	--
HexaCB-(153)+(168)	--	--	0.000026	0.143	0.00211	0.0406	0.0893	0.0237	0.0002 U	0.0012	0.000157	0.000048 U	--
HexaCB-(156)+(157)	--	--	0.0000071 U	0.00409	0.0000408	0.0012	0.00553	0.00127	0.0002 U	0.000184	0.0000268	0.0000073	--
OctaCB-(198)+(199)	--	--	0.000014 U	0.0212	0.000309	0.00527	0.012	0.00281	0.0002 U	0.000212	0.0000307	0.000017 U	--
PentaCB-(108)+(124)	--	--	0.0000024 U	0.000395	0.000005	0.000109	0.00096	0.000197	0.0002 U	0.000034	0.0000031 U	0.0000042 U	--
PentaCB-(110)+(115)	--	--	0.0000405	0.0344	0.000344	0.0103	0.0473	0.0129	0.0002 U	0.00126	0.000202	0.000105	--
PentaCB-(83)+(99)	--	--	0.0000196	0.0449	0.000505	0.0109	0.0329	0.00978	0.0002 U	0.000497	0.0000639	0.000037	--
PentaCB-(85)+(116)+(117)	--	--	0.0000058 U	0.00176	0.0000166	0.000728	0.0055	0.000998	0.00029 U	0.000103	0.0000152	0.0000094 U	--
PentaCB-(86)(87)(97)(109)(119)(125)	--	--	0.0000235	0.0163	0.000164	0.00465	0.0243	0.0061	0.00059 U	0.000564	0.0000871	0.000052	--
PentaCB-(88)+(91)	--	--	0.0000073 U	0.00663	0.0000593	0.00293	0.0164	0.00407	0.0002 U	0.00013	0.000014 U	0.000012 U	0.00000475 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES									WEST PARCEL MONITORING WELLS				
Sample ID	PHSS	JSCS	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	MW-1				
Date	Cleanup	Screening	12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
PentaCB-(90)+(101)+(113)	--	--	0.000029 U	0.0672	0.00069	0.0184	0.0583	0.016	0.00029 U	0.000867	0.000135	0.000074	--
PentaCB-(93)+(98)+(100)+(102)	--	--	0.0000075 U	0.00312	0.0000226	0.00134	0.00941	0.00241	0.00039 U	0.000028	0.0000047 U	0.000012 U	--
TetraCB-(40)+(41)+(71)	--	--	0.0000071 U	0.00517	0.0000672	0.00353	0.0067	0.00271	0.00029 U	0.000061	0.0000109	0.0000092 U	--
TetraCB-(44)+(47)+(65)	--	--	0.000037	0.017	0.000193 J	0.014	0.0464	0.0149	0.000022 J	0.000185	0.0000414	0.00004	--
TetraCB-(45)+(51)	--	--	0.000153	0.00335	0.000104	0.00427	0.0198	0.00662	0.00003 J	0.000026	0.0000095 U	0.0000482	--
TetraCB-(49)+TetraCB-(69)	--	--	0.0000081 U	0.0162	0.000158	0.0126	0.0292	0.0105	0.0002 U	0.00011	0.0000177	0.0000136	--
TetraCB-(50)+(53)	--	--	0.0000071 U	0.0022	0.000016 U	0.0038	0.0113	0.00478	0.0002 U	0.000025	0.0000037 U	0.0000091 U	--
TetraCB-(59)+(62)+(75)	--	--	0.0000054 U	0.000935	0.0000089 U	0.000629	0.00177	0.000611	0.00029 U	0.000011	0.0000024 U	0.0000069 U	--
TetraCB-(61)+(70)+(74)+(76)	--	--	0.000015 U	0.0151	0.000201	0.00587	0.021	0.00583	0.00039 U	0.00039	0.0000646	0.0000444	--
TriCB-(18)+(30)	--	--	0.00002 U	0.00913	0.000108	0.00507	0.00451	0.00209	0.0002 U	0.000055	0.000015 U	0.000016 U	--
TriCB-(20) + (28)	--	--	0.0000081 U	0.0111	0.000178	0.00711	0.00735	0.0034	0.000014 J	0.000085	0.000018 U	0.0000113	--
TriCB-(21)+(33)	--	--	0.000008 U	0.00559	0.000101	0.00265	0.00328	0.00141	0.0002 U	0.000042	0.000011 U	0.000009	--
TriCB-(26)+(29)	--	--	0.0000039 U	0.00236	0.000034 U	0.00256	0.0026	0.00113	0.0002 U	0.000014	0.0000052 U	0.0000042 U	--
DiCB-(4)+(10)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000807 U
DiCB-(7)+(9)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000807 U
DiCB-(5)+(8)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000807 U
246-TriCB-(30)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000497 U
22'5-TriCB-(18)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000497 U
TriCB-(24)+(27)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000497 U
TriCB-(16)+(32)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000497 U
245-TriCB-(29)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000586 U
23'5-TriCB-(26)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000586 U
244'-TriCB-(28)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000586 U
TriCB-(20)+(21)+(33)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000586 U
22'46-TetraCB-(50)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
22'56'-TetraCB-(53)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
22'46'-TetraCB-(51)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
22'36-TetraCB-(45)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(52)+(69)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(43)+(49)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
22'44'-TetraCB-(47)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(48)+(75)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
2356-TetraCB-(65)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
2346-TetraCB-(62)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
22'35'-TetraCB-(44)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(42)+(59)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(41)+(64)+(71)+(72)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
22'33'-TetraCB-(40)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
244'5-TetraCB-(74)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(61)+(70)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(66)+(76)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000375 U
TetraCB-(56)+(60)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000359 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES									WEST PARCEL MONITORING WELLS				
Sample ID	PHSS	JSCS	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	MW-1				
Date	Cleanup	Screening	12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'44'6-PentaCB-(100)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000475 U
PentaCB-(93)+(95)+(98)+(102)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000475 U
PentaCB-(84)+(92)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(90)+(101)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
233'5'6-PentaCB-(113)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
22'44'5-PentaCB-(99)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
22'33'5-PentaCB-(83)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(112)+(119)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
233'46-PentCB-(109)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
22'3'45-PentaCB-(97)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
22'345-PentaCB-(86)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(87)+(117)+(125)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(111)+(115)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(85)+(116)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
233'4'6-PentaCB-(110)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
2'3455'-PentaCB-(124)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(107)+(108)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000346 U
PentaCB-(106)+(118)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000558 U
22'33'66'-HexaCB-(136)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000486 U
22'355'6-HexaCB-(151)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000486 U
22'33'56'-HexaCB-(135)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000486 U
22'34'56-HexaCB-(147)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000486 U
HexaCB-(139)+(149)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000486 U
22'344'6'-HexaCB-(140)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000486 U
HexaCB-(131)+(142)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
HexaCB-(132)+(146)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
HexaCB-(161)+(165)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
22'44'55'-HexaCB-(153)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
23'44'5'6-HexaCB-(168)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
HexaCB-(138)+(163)+(164)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
HexaCB-(158)+(160)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
22'33'45-HexaCB-(129)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
2344'56-HexaCB-(166)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
HexaCB-(138)+(162)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000519 U
233'44'5-HexaCB-(156)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000413 U
233'44'5'-HexaCB-(157)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000607 U
HeptaCB-(182)+(187)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000567 U
22'33'44'6-HeptaCB(171)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000369 U
22'33'456-HeptaCB-(1173)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000369 U
22'344'55'-HeptaCB-(180)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000369 U
233'4'55'6-HeptaCB-(193)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000369 U
22'33'455'6-OctaCB-(198)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000431 U
22'33'455'6'-OctaCB-(199)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000431 U
OctaCB-(196)+(203)	--	--	--	--	--	--	--	--	--	--	--	--	0.00000431 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-1		MW-2							MW-3	
			8/11/2020	2/24/2021	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/23/2021	2/23/2016	6/3/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
Total PCB Congeners	0.014 --		0.00306766	0.00180186	0.00748	0.0195	0.00871	0.0196	0.00621016	0.03202086	0.01779616	0.0208	5.62
2,3-DiCB-(5)	--	--	--	--	0.000096 U	0.000011 U	0.000067 U	0.000039 U	--	--	--	0.000021 J	0.00017 U
2,3'-DiCB-(6)	--	--	0.0000713	0.0000797	0.000034 J	0.0000099 U	0.000063 U	0.000037 U	0.00000807 U	0.0000769	0.000105	0.000625	0.017
2,4-DiCB-(7)	--	--	--	--	0.000096 U	0.000011 U	0.00007 U	0.000042 U	--	--	--	0.000102	0.00354
2,4'-DiCB-(8)	--	--	--	--	0.000127	0.0000948	0.000066 U	0.000107	--	--	--	0.00178	0.0387
2,5-DiCB-(9)	--	--	--	--	0.000096 U	0.0000098 U	0.000063 U	0.000036 U	--	--	--	0.00018	0.00363
2,6-DiCB-(10)	--	--	--	--	0.000096 U	0.000029 U	0.00011 U	0.0001 U	--	--	--	0.000101	0.00035
22'33'44'55'6'-NonaCB-(206)	--	--	0.0000363	0.00000561 U	0.00002 J	0.00016	0.000018 U	0.000069 U	0.00000561 U	0.000327	0.000111	0.000096 U	0.0183
22'33'44'55'-OctaCB-(194)	--	--	0.0000215	0.00000716 U	0.000096 U	0.000113	0.000031 U	0.0000876	0.00000716 U	0.000273	0.0000815	0.000026 J	0.0492
22'33'44'566'-NonaCB-(207)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000013 U	0.0000047 U	0.0000071 U	0.00000375 U	0.0000226	0.00000375 U	0.000096 U	0.00189
22'33'44'56-OctaCB-(195)	--	--	0.00000716 U	0.00000716 U	0.000096 U	0.000045	0.0000072 U	0.000033 U	0.00000716 U	0.000133	0.00000716 U	0.000011 J	0.024
22'33'44'56'-OctaCB-(196)	--	--	--	--	0.000096 U	0.000056	0.000012 U	0.000045 U	--	--	--	0.000096 U	0.0375
22'33'44'5'-HeptaCB-(170)	--	--	0.0000264	0.00000369 U	0.000052 J	0.00022	0.0000671	0.000219	0.00000369 U	0.000569	0.00025	0.000058 J	0.0945
22'33'44'66'OctaCB-(197)	--	--	0.00000431 U	0.00000431 U	0.000096 U	0.000016 U	0.0000062 U	0.000016 U	0.00000431 U	0.00000431 U	0.00000431 U	0.000096 U	0.00195
22'33'455'66'-NonaCB-(208)	--	--	0.0000247	0.00000375 U	0.000096 U	0.000034 U	0.0000088	0.000029 U	0.00000375 U	0.000101	0.0000335	0.000096 U	0.0031
22'33'455'-HeptaCB-(172)	--	--	0.00000369 U	0.00000369 U	0.000096 U	0.00004	0.0000122	0.000034 U	0.00000369 U	0.0000899	0.0000659	0.000096 U	0.0195
22'33'4566'-OctaCB-(200)	--	--	0.00000431 U	0.00000431 U	0.000096 U	0.000014 U	0.0000066 U	0.000013 U	0.00000431 U	0.000046	0.00000431 U	0.000096 U	0.00884
22'33'45'66'-OctaCB-(201)	--	--	0.00000431 U	0.00000431 U	0.000096 U	0.000015 U	0.000006 U	0.000014 U	0.00000431 U	0.0000415	0.00000431 U	0.000096 U	0.0101
22'33'456'-HeptaCB-(174)	--	--	0.0000344	0.00000369 U	0.000051 J	0.000242	0.0000767	0.000245	0.00000369 U	0.000728	0.000374	0.000078 J	0.146
22'33'45'6'-HeptaCB-(175)	--	--	0.00000567 U	0.00000567 U	0.000096 U	0.00003 U	0.0000039 U	0.000014 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.00456
22'33'45'6'-HeptaCB-(177)	--	--	0.00000369 U	0.00000369 U	0.000025 J	0.000148	0.0000454	0.000151	0.00000369 U	0.000384	0.00000369 U	0.000048 J	0.103
22'33'45'-HexaCB-(130)	--	--	0.00000519 U	0.00000519 U	0.000096 U	0.000072	0.0000227	0.000062	0.00000519 U	0.000112	0.0000397	0.000096 U	0.0185
22'33'466'-HeptaCB-(176)	--	--	0.00000567 U	0.00000567 U	0.000096 U	0.000031 U	0.0000105	0.000038	0.00000567 U	0.000137	0.00000567 U	0.000096 U	0.0187
22'33'46-HexaCB-(131)	--	--	--	--	0.000096 U	0.000023 U	0.0000081 U	0.000021 U	--	--	--	0.000096 U	0.00197
22'33'46'-HexaCB-(132)	--	--	--	--	0.00009 J	0.000495	0.000168	0.000515	--	--	--	0.000095 J	0.132
22'33'4'-PentaCB-(82)	--	--	0.00000346 U	0.00000346 U	0.00003 J	0.000091	0.0000455	0.000106	0.00000346 U	0.000189	0.0000572	0.000096 U	0.00583
22'33'55'66'-OctaCB-(202)	--	--	0.00000431 U	0.00000431 U	0.000096 U	0.000026	0.000008	0.000024	0.00000431 U	0.0000469	0.00000431 U	0.000096 U	0.0118
22'33'55'6'-HeptaCB-(178)	--	--	0.00000567 U	0.00000567 U	0.000096 U	0.000045 U	0.0000168	0.000054	0.00000567 U	0.0000965	0.000033	0.000024 J	0.0422
22'33'55'-HexaCB-(133)	--	--	0.00000519 U	0.00000519 U	0.000096 U	0.000018 U	0.000007 U	0.000022	0.00000519 U	0.00000519 U	0.00000519 U	0.000015 J	0.0199
22'33'566'-HeptaCB-(179)	--	--	0.00000567 U	0.00000567 U	0.000024 J	0.0001	0.0000349	0.000135	0.00000567 U	0.000337	0.00015	0.000046 J	0.0785
22'33'66'-HexaCB-(136)	--	--	0	0	0.000042 J	0.000156	0.0000658	0.000202	0	0	0	0.000062 J	0.0698
22'33'6'-PentaCB-(84)	--	--	--	--	0.000117	0.000266	0.000133	0.000316	--	--	--	0.00004 J	0.0176
22'344'55'6-OctaCB-(203)	--	--	--	--	0.000096 U	0.00008	0.0000179	0.000052	--	--	--	0.000096 U	0.051
22'344'566'-OctaCB-(204)	--	--	0.00000431 U	0.00000431 U	0.000096 U	0.000014 U	0.000006 U	0.000014 U	0.00000431 U	0.00000431 U	0.00000431 U	0.000096 U	0.000017 U
22'344'56'-HeptaCB-(181)	--	--	0.0000219	0.00000369 U	0.000096 U	0.000025 U	0.0000053 U	0.000017 U	0.00000369 U	0.0000412	0.00026	0.000096 U	0.0005
22'344'56'-HeptaCB-(182)	--	--	--	--	0.000096 U	0.00003 U	0.0000039 U	0.000015 U	--	--	--	0.000096 U	0.000024 U
22'344'5'6'-HeptaCB-(183)	--	--	0.0000244	0.00000567 U	0.000027 J	0.000137	0.0000412	0.000107	0.00000567 U	0.000276	0.000149	0.000096 U	0.0801
22'344'5'-HexaCB-(137)	--	--	0.00000519 U	0.00000519 U	0.000096 U	0.000031	0.0000111	0.00002 U	0.00000519 U	0.0000799	0.0000331	0.000096 U	0.00331

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-1		MW-2							MW-3	
			8/11/2020	2/24/2021	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/23/2021	2/23/2016	6/3/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'344'66'-HeptaCB-(184)	--	--	0.00000567 U	0.00000567 U	0.000096 U	0.000021 U	0.000003 U	0.000011 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.000128
22'3455'6-HeptaCB-(185)	--	--	0.00000369 U	0.00000369 U	0.000096 U	0.000028 U	0.0000061 U	0.000018 U	0.00000369 U	0.000079	0.00000369 U	0.000096 U	0.00013 U
22'34'55'6-HeptaCB-(187)	--	--	--	--	0.000062 J	0.00031	0.0000955	0.00029 U	--	--	--	0.000135	0.247
22'3455'-HexaCB-(141)	--	--	0.00000519 U	0.00000519 U	0.000045 J	0.000224	0.0000787	0.000211	0.00000519 U	0.000396	0.000187	0.000037 J	0.0608
22'34'55'-HexaCB-(146)	--	--	--	--	0.000035 J	0.00019	0.0000597	0.00018	--	--	--	0.000101	0.158
22'34566'-HeptaCB-(186)	--	--	0.00000567 U	0.00000567 U	0.000096 U	0.000024 U	0.0000033 U	0.000013 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.000019 U
22'34'566'-HeptaCB-(188)	--	--	0.00000567 U	0.00000567 U	0.000096 U	0.000018 U	0.0000038 U	0.00001 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.000636
22'3456-HexaCB-(142)	--	--	--	--	0.000096 U	0.00002 U	0.0000074 U	0.000018 U	--	--	--	0.000096 U	0.000091 U
22'345'6-HexaCB-(144)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.000051 U	0.0000216	0.00006	0.00000486 U	0.0000945	0.0000455	0.000096 U	0.0121
22'34'56'-HexaCB-(148)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.000035 U	0.0000037 U	0.000013 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.00798
22'3466'-HexaCB-(145)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.000028 U	0.0000032 U	0.000011 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.000034 U
22'34'66'-HexaCB-(150)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.000028 U	0.0000031 U	0.000011 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.00441
22'346'-PentaCB-(89)	--	--	0.00000346 U	0.00000346 U	0.000096 U	0.000022 U	0.0000083 U	0.0000135	0.00000346 U	0.00000346 U	0.00000346 U	0.000096 U	0.0007
22'34'-TetraCB-(42)	--	--	--	--	0.000067 J	0.00011	0.0000656	0.000142	--	--	--	0.000081 J	0.0196
22'355'-PentaCB-(92)	--	--	--	--	0.000062 J	0.000184	0.0000749	0.00019	--	--	--	0.000101	0.0716
22'3566'-HexaCB-(152)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.000023 U	0.0000027 U	0.0000091 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.000189
22'356'-PentaCB-(94)	--	--	0.00000475 U	0.00000475 U	0.000096 U	0.000025 U	0.0000093 U	0.0000081 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.00082
22'35'6-PentaCB-(95)	--	--	--	--	0.000357	0.000816	0.000384	0.000877	--	--	--	0.000278	0.0982
22'35-TetraCB-(43)	--	--	--	--	0.000096 U	0.000025 U	0.0000096	0.0000271	--	--	--	0.000096 U	0.002
22'366'-PentaCB-(96)	--	--	0.00000475 U	0.00000475 U	0.000096 U	0.000016 U	0.00000333	0.0000067 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.000914
22'36'-TetraCB-(46)	--	--	0.00000586 U	0.00000375 U	0.000096 U	0.000024 U	0.0000169	0.0000378	0.00000375 U	0.0000335	0.0000244	0.000037 J	0.00424
22'3-TriCB-(16)	--	--	--	--	0.000094 J	0.00011	0.000086	0.000014 U	--	--	--	0.000498	0.0327
22'44'56'-HexaCB-(154)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.00003 U	0.0000035 U	0.000015 U	0.00000486 U	0.0000347	0.0000249	0.000096 U	0.0359
22'44'66'-HexaCB-(155)	--	--	0.00000486 U	0.00000486 U	0.000096 U	0.000015 U	0.0000034 U	0.0000062 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.000122
22'45'6-PentaCB-(103)	--	--	0.00000475 U	0.00000475 U	0.000096 U	0.000018 U	0.0000068 U	0.0000107	0.00000475 U	0.00000475 U	0.00000475 U	0.000021 J	0.0114
22'45-TetraCB-(48)	--	--	--	--	0.000048 J	0.000069	0.0000477	0.000092	--	--	--	0.000051 J	0.0112
22'466'-PentaCB-(104)	--	--	0.00000475 U	0.00000475 U	0.000096 U	0.000008 U	0.000001 U	0.000024 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.000309
22'4-TriCB-(17)	--	--	0.0000618	0.000092	0.000086 J	0.000087	0.0000778	0.0001 U	0.00000497 U	0.000189	0.000189	0.000499	0.0389
22'55'-TetraCB-(52)	--	--	--	--	0.000616	0.00091	0.000591	0.00093	--	--	--	0.000522	0.101
22'66'-TetraCB-(54)	--	--	0.00000586 U	0.00000375 U	0.000096 U	0.000014 U	0.0000067 U	0.0000079 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000045 J	0.00671
22'6-TriCB-(19)	--	--	0.00000497 U	0.0000243	0.000037 J	0.0000342	0.0000293	0.0000514	0.00000497 U	0.00000497 U	0.0000478	0.000321	0.0103
22'-DiCB-(4)	--	--	--	--	0.000146	0.000108	0.00016 U	0.00016 U	--	--	--	0.00286	0.0219
233'44'55'6-OctaCB-(205)	--	--	0.00000716 U	0.00000716 U	0.000096 U	0.000013 U	0.0000025 U	0.0000099 U	0.00000716 U	0.0000211	0.00000716 U	0.000096 U	0.00294
233'44'55'-HeptaCB-(189)	--	--	0.00000369 U	0.00000369 U	0.000096 U	0.000014 U	0.0000035	0.0000085 U	0.00000369 U	0.00000369 U	0.00000369 U	0.000096 U	0.00359
233'44'56-HeptaCB-(190)	--	--	0.00000369 U	0.00000369 U	0.000096 U	0.000039	0.0000115	0.000035	0.00000369 U	0.000173	0.0000677	0.0000112 J	0.02
233'44'5'6-HeptaCB-(191)	--	--	0.00000369 U	0.00000369 U	0.000096 U	0.000017 U	0.0000039 U	0.000012 U	0.00000369 U	0.0000384	0.00000369 U	0.000096 U	0.00381
233'44'6-HexaCB-(158)	--	--	--	--	0.0000169 J	0.000106	0.0000357	0.0001	--	--	--	0.0000125 J	0.0191
233'44'-PentaCB-(105)	--	--	0.000062	0.00000487 U	0.000066 J	0.000319	0.000109	0.00029	0.000156	0.000567	0.000259	0.000016 J	0.0176

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Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-1		MW-2							MW-3	
			8/11/2020	2/24/2021	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/23/2021	2/23/2016	6/3/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
233'455'6-HeptaCB-(192)	--	--	0.00000369 U	0.00000369 U	0.000096 U	0.000021 U	0.0000045 U	0.000014 U	0.00000369 U	0.00000369 U	0.00000369 U	0.000096 U	0.000096 U
233'455'-HexaCB-(159)	--	--	0.00000519 U	0.00000519 U	0.000096 U	0.000017 U	0.0000036 U	0.0000094	0.00000519 U	0.00000519 U	0.00000519 U	0.000096 U	0.00588
233'4'55'-HexaCB-(162)	--	--	--	--	0.000096 U	0.000018 U	0.0000039 U	0.0000047 U	--	--	--	0.000096 U	0.00566
233'456-HexaCB-(160)	--	--	--	--	0.000096 U	0.000015 U	0.0000064 U	0.000015 U	--	--	--	0.000096 U	0.000068 U
233'45'6-HexaCB-(161)	--	--	--	--	0.000096 U	0.000012 U	0.0000051 U	0.000013 U	--	--	--	0.000096 U	0.000055 U
233'4'5'6-HexaCB-(164)	--	--	--	--	0.000015 J	0.000099	0.0000331	0.000093	--	--	--	0.0000166 J	0.025
233'45-PentaCB-(106)	--	--	--	--	0.000096 U	0.000014 U	0.0000031 U	0.0000033 U	--	--	--	0.000096 U	0.000013 U
233'4'5-PentaCB-(107)	--	--	--	--	0.0000122 J	0.000051	0.0000165	0.0000458	--	--	--	0.0000103 J	0.00974
233'4'5'-PentaCB-(122)	--	--	0.00000325 U	0.00000325 U	0.000096 U	0.000015 U	0.0000032 U	0.0000082 U	0.00000325 U	0.00000325 U	0.00000325 U	0.000096 U	0.000386
233'4'-Tetra CB(56)	--	--	--	--	0.000078 J	0.000159	0.0000844	0.000194	--	--	--	0.000052 J	0.0192
233'4-TetraCB-(55)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.00002 U	0.000007 U	0.0000021 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000017 U
233'55'6-HexaCB-(165)	--	--	--	--	0.000096 U	0.000015 U	0.0000061 U	0.000015 U	--	--	--	0.000096 U	0.00136
233'55'-PentaCB-(111)	--	--	--	--	0.000096 U	0.000015 U	0.000603	0.0000052 U	--	--	--	0.000096 U	0.000953
233'56-PentaCB-(112)	--	--	--	--	0.000096 U	0.000014 U	0.0000063 U	0.0000048 U	--	--	--	0.000096 U	0.000014 U
233'5-TetraCB-(57)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000017 U	0.0000059 U	0.0000018 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000014 U
233'5'-TetraCB-(58)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000018 U	0.0000066 U	0.000002 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.00479
23'44'55'-HexaCB-(167)	--	--	0.00000519 U	0.00000519 U	0.000096 U	0.000044	0.000012 U	0.0000358	0.00000519 U	0.0000749	0.0000263	0.000096 U	0.00542
2344'5-PentaCB-(114)	--	--	0.00000325 U	0.00000325 U	0.000096 U	0.000018 U	0.0000031 U	0.0000152	0.00000325 U	0.00000325 U	0.00000325 U	0.000096 U	0.00159
23'44'5-PentaCB-(118)	--	--	--	--	0.000175	0.000802	0.000266	0.000727	--	--	--	0.000055 J	0.0655
23'44'5'-PentaCB-(123)	--	--	0.00000346 U	0.00000346 U	0.000096 U	0.00002 U	0.0000038	0.0000101	0.00000346 U	0.00000346 U	0.00000346 U	0.000096 U	0.000019 U
2344'-TetraCB -(60)	--	--	--	--	0.000032 J	0.000069	0.0000337	0.0000737	--	--	--	0.000096 U	0.00238
23'44'-TetraCB-(66)	--	--	--	0	0.000136	0.000286	0.000152	0.000334	--	--	0	0.0000974	0.0356
23'455'-PentaCB-(120)	--	--	0.00000346 U	0.00000346 U	0.000096 U	0.000013 U	0.0000056 U	0.0000045 U	0.00000346 U	0.00251	0.00000346 U	0.000096 U	0.00282
23'45'6-PentaCB-(121)	--	--	0.00000475 U	0.00000346 U	0.000096 U	0.000015 U	0.0000062 U	0.0000054 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.000743
234'5-TetraCB-(63)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000016 U	0.0000071	0.0000159	0.00000375 U	0.000034	0.00000375 U	0.000096 U	0.00194
23'45-TetraCB-(67)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000016 U	0.0000067	0.0000143	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.00162
23'45'-TetraCB-(68)	--	--	0.00000375 U	0.00000375 U	0.000018 J	0.000017 U	0.0000081	0.0000057	0.00000375 U	0.00000375 U	0.00000375 U	0.0000216 J	0.0017
234'6-TetraCB-(64)	--	--	--	--	0.000109	0.000182	0.000116	0.000223	--	--	--	0.000094 J	0.0237
234'-TriCB-(22)	--	--	0.00000586 U	0.0000372	0.000078 J	0.000077	0.0000643	0.0000994	0.000159	0.000158	0.0000997	0.000222	0.0248
23'4-TriCB-(25)	--	--	0.00000586 U	0.00000586 U	0.0000215	0.0000285	0.0000221	0.0000306	0.00000586 U	0.000067	0.00000586 U	0.000109	0.0134
23'55'-TetraCB-(72)	--	--	--	--	0.000096 U	0.000016 U	0.0000062 U	0.0000067	--	--	--	0.000096 U	0.00185
23'5'6-TetraCB-(73)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000014 U	0.0000038 U	0.0000031 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000017 U
235-TriCB-(23)	--	--	0.00000586 U	0.00000586 U	0.000096 U	0.000013 U	0.0000044 U	0.0000042 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000035 U
23'5'-TriCB-(34)	--	--	0.00000586 U	0.00000586 U	0.000096 U	0.000011 U	0.0000034 U	0.0000037 U	0.00000586 U	0.00000586 U	0.00000586 U	0.0000083 J	0.000955
236-TriCB-(24)	--	--	--	--	0.000096 U	0.000012 U	0.0000079 U	0.0000088 U	--	--	--	0.000028 J	0.00025 U
23'6-TriCB-(27)	--	--	--	--	0.000096 U	0.0000097 U	0.0000115	0.000011 U	--	--	--	0.00008 J	0.00444
24'5-TriCB-(31)	--	--	0.0000685	0.000066	0.000215	0.000224	0.000191	0.000273	0.000284	0.0000559	0.000253	0.000592	0.0674
24'6-TriCB-(32)	--	--	--	--	0.000058 J	0.0000493	0.000048	0.000062 U	--	--	--	0.000321	0.0287

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-1		MW-2							MW-3	
			8/11/2020	2/24/2021	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/23/2021	2/23/2016	6/3/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
2-MonoCB-(1)	--	--	0.00000208 U	0.0000394	0.000138	0.000107	0.0000977	0.0000917	0.00000208 U	0.0000353	0.00000208 U	0.00411	0.0135
3,3'-DiCB-(11)	--	--	0.000249	0.000511	0.000028 J	0.000048	0.000063 U	0.000037 U	0.000132	0.000452	0.000453	0.000023 J	0.00039 U
3,5-DiCB-(14)	--	--	0.00000831 U	0.00000831 U	0.000096 U	0.0000098 U	0.00006 U	0.000036 U	0.00000831 U	0.00000831 U	0.00000831 U	0.000096 U	0.00014 U
33'44'55'-HexaCB-(169)	--	--	0.0000052 U	0.0000052 U	0.000096 U	0.000023 U	0.0000039 U	0.000006 U	0.0000052 U	0.0000052 U	0.0000052 U	0.000096 U	0.000049 U
33'44'5-PentaCB-(126)	--	--	0.00000573 U	0.00000573 U	0.000096 U	0.000019 U	0.0000033 U	0.0000043 U	0.00000573 U	0.00000573 U	0.00000573 U	0.000096 U	0.000018 U
33'44'-TetraCB-(77)	--	--	0.00000522 U	0.00000522 U	0.000096 U	0.000024 U	0.0000075 U	0.0000184	0.00000522 U	0.00000522 U	0.00000522 U	0.000096 U	0.00244
33'455'-PentaCB-(127)	--	--	0.00000487 U	0.00000487 U	0.000096 U	0.000014 U	0.0000029 U	0.0000031 U	0.00000487 U	0.00000487 U	0.00000487 U	0.000096 U	0.000067 U
33'45-TetraCB-(78)	--	--	0.00000359 U	0.00000359 U	0.000096 U	0.000016 U	0.0000058 U	0.0000017 U	0.00000359 U	0.00000359 U	0.00000359 U	0.000096 U	0.000014 U
33'45'-TetraCB-(79)	--	--	0.00000359 U	0.00000359 U	0.000096 U	0.000014 U	0.0000051 U	0.0000037 U	0.00000359 U	0.00000359 U	0.00000359 U	0.000096 U	0.000864
33'4-TriCB-(35)	--	--	0.00000586 U	0.00000586 U	0.000096 U	0.000011 U	0.0000035 U	0.0000036 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000471
33'55'-TetraCB-(80)	--	--	0.00000375 U	0.00000375 U	0.000096 U	0.000015 U	0.0000051 U	0.0000016 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000013 U
33'5-TriCB-(36)	--	--	0.00000586 U	0.00000586 U	0.000096 U	0.000009 U	0.000003 U	0.0000032 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.00229
344'5-TetraCB-(81)	--	--	0.00000359 U	0.00000359 U	0.000096 U	0.000025 U	0.0000065 U	0.0000023 U	0.00000359 U	0.00000359 U	0.00000359 U	0.000096 U	0.000021 U
344'-TriCB-(37)	--	--	0.00000586 U	0.00000586 U	0.000025 J	0.000041	0.000026	0.0000489	0.00000586 U	0.0000652	0.00000586 U	0.000038 J	0.0118
345-TriCB-(38)	--	--	0.00000586 U	0.00000586 U	0.000096 U	0.00001 U	0.0000036 U	0.0000035 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000029 U
34'5-TriCB-(39)	--	--	0.00000586 U	0.00000586 U	0.000096 U	0.000011 U	0.0000037 U	0.0000038 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000611
3-MonoCB-(2)	--	--	0.00000349 U	0.00000349 U	0.000096 U	0.0000062 U	0.0000073	0.000004 U	0.00000349 U	0.00000349 U	0.00000349 U	0.0000141 J	0.000236
4,4'-DiCB-(15)	--	--	0.00000831 U	0.00000831 U	0.00003 J	0.000033 U	0.000081 U	0.000059 U	0.00000831 U	0.00000831 U	0.00000831 U	0.000104	0.01
4-MonoCB-(3)	--	--	0.00000349 U	0.00000349 U	0.000026 J	0.000017 U	0.0000193	0.0000093 U	0.00000349 U	0.00000349 U	0.00000349 U	0.000158	0.00188
DecaCB-(209)	--	--	0.0000345	0.00000414 U	0.000012 J	0.00027	0.0000144	0.000097	0.00000414 U	0.000207	0.0000743	0.000096 U	0.00686
DiCB-(12)+(13)	--	--	0.00000831 U	0.00000831 U	0.00019 U	0.000011 U	0.000069 U	0.00004 U	0.00000831 U	0.00000831 U	0.00000831 U	0.000029 J	0.0019 U
HeptaCB-(171)+(173)	--	--	--	--	0.00019 U	0.000073	0.0000217	0.000076	--	--	--	0.000019 J	0.0344
HeptaCB-(180)+(193)	--	--	--	--	0.000173 J	0.000539	0.000193	0.000494	--	--	--	0.000137 J	0.252
HexaCB-(128)+(166)	--	--	--	--	0.000028 J	0.000157	0.0000626	0.000165	--	--	--	0.00019 U	0.0259
HexaCB-(129)+(138)+(163)	--	--	--	--	0.000209 J	0.00122	0.000403	0.00117	--	--	--	0.000209 J	0.357
HexaCB-(134)+(143)	--	--	0.00000519 U	0.00000519 U	0.00019 U	0.000065 U	0.000017 U	0.00005	0.00000519 U	0.0000932	0.0000504	0.00019 U	0.0163
HexaCB-(135)+(151)	--	--	--	--	0.000098 J	0.000438	0.000149	0.000478	--	--	--	0.000209	0.286
HexaCB-(139)+(140)	--	--	--	--	0.00019 U	0.000017 U	0.0000067 U	0.000019 U	--	--	--	0.00019 U	0.0117
HexaCB-(147)+(149)	--	--	--	--	0.000194	0.00109	0.000285	0.0011	--	--	--	0.000327	0.457
HexaCB-(153)+(168)	--	--	--	--	0.000192	0.000971	0.000322	0.000928	--	--	--	0.000268	0.423
HexaCB-(156)+(157)	--	--	--	--	0.000022 J	0.00012	0.0000344	0.000104	--	--	--	0.0000096 J	0.0149
OctaCB-(198)+(199)	--	--	--	--	0.00019 U	0.000135	0.0000359	0.000114	--	--	--	0.000034 J	0.0847
PentaCB-(108)+(124)	--	--	--	--	0.00019 U	0.000028	0.0000103	0.0000204	--	--	--	0.00019 U	0.00164
PentaCB-(110)+(115)	--	--	--	--	0.000396	0.00118	0.00871	0.0012	--	--	--	0.000182 J	0.133
PentaCB-(83)+(99)	--	--	--	--	0.000145 J	0.000494	0.000188	0.000504	--	--	--	0.000161 J	0.141
PentaCB-(85)+(116)+(117)	--	--	--	0	0.000024 J	0.00011	0.0000424	0.000116	--	--	0	0.00029 U	0.00794
PentaCB-(86)(87)(97)(109)(119)(125)	--	--	--	--	0.000186 J	0.000563	0.000268	0.000619	--	--	--	0.000072 J	0.0556
PentaCB-(88)+(91)	--	--	0.00000475 U	0.00000475 U	0.000046 J	0.000123	0.0000576	0.000158	0.00000475 U	0.000246	0.000143	0.000038 J	0.0215

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-1		MW-2							MW-3	
			8/11/2020	2/24/2021	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/23/2021	2/23/2016	6/3/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
PentaCB-(90)+(101)+(113)	--	--	--	--	0.000312	0.000945	0.000416	0.000986	--	--	--	0.000282 J	0.203
PentaCB-(93)+(98)+(100)+(102)	--	--	--	--	0.00038 U	0.000039	0.0000162	0.0000477	--	--	--	0.00038 U	0.00897
TetraCB-(40)+(41)+(71)	--	--	--	--	0.000129 J	0.000205	0.000133	0.000263	--	--	--	0.000135 J	0.0298
TetraCB-(44)+(47)+(65)	--	--	--	--	0.000355	0.000482	0.000336	0.000634	--	--	--	0.000365	0.0794
TetraCB-(45)+(51)	--	--	--	--	0.00011 J	0.000071	0.0000961	0.000109	--	--	--	0.000212	0.0297
TetraCB-(49)+TetraCB-(69)	--	--	--	--	0.000194	0.0003	0.000192	0.000389	--	--	--	0.00029	0.0768
TetraCB-(50)+(53)	--	--	--	--	0.000058 J	0.000069	0.0000493	0.0000956	--	--	--	0.000156 J	0.0246
TetraCB-(59)+(62)+(75)	--	--	--	--	0.0000167 J	0.000021 U	0.0000171	0.0000346	--	--	--	0.000026 J	0.00457
TetraCB-(61)+(70)+(74)+(76)	--	--	--	0	0.000393	0.000806	0.000432	0.000883	--	--	0	0.000201 J	0.0713
TriCB-(18)+(30)	--	--	--	--	0.000236	0.00019	0.000202	0.000278	--	--	--	0.0011	0.0669
TriCB-(20) + (28)	--	--	--	--	0.000212	0.00024	0.000191	0.000274	--	--	--	0.000639	0.0693
TriCB-(21)+(33)	--	--	--	--	0.000113 J	0.000106	0.0000873	0.000134	--	--	--	0.000362	0.0367
TriCB-(26)+(29)	--	--	--	--	0.000058 J	0.000063	0.0000484	0.0000744	--	--	--	0.000209	0.0219
DiCB-(4)+(10)	--	--	0.000128	0.000217	--	--	--	--	0.00000807 U	0.000146	0.000316	--	--
DiCB-(7)+(9)	--	--	0.00000807 U	0.0000619	--	--	--	--	0.00000807 U	0.0000504	0.00000807 U	--	--
DiCB-(5)+(8)	--	--	0.000321	0.000382	--	--	--	--	0.000183	0.000315	0.000429	--	--
246-TriCB-(30)	--	--	0.00000497 U	0.00000497 U	--	--	--	--	0.00000497 U	0.00000497 U	0.00000497 U	--	--
22'5-TriCB-(18)	--	--	0.000173	0.000182	--	--	--	--	0.000383	0.000518	0.000433	--	--
TriCB-(24)+(27)	--	--	0.00000497 U	0.00000497 U	--	--	--	--	0.00000497 U	0.00000497 U	0.00000497 U	--	--
TriCB-(16)+(32)	--	--	0.0000854	0.0000927	--	--	--	--	0.00000497 U	0.000316	0.000302	--	--
245-TriCB-(29)	--	--	0.00000586 U	0.00000586 U	--	--	--	--	0.00000586 U	0.00000586 U	0.00000586 U	--	--
23'5-TriCB-(26)	--	--	0.00000586 U	0.00000586 U	--	--	--	--	0.000137	0.00013	0.0000723	--	--
244'-TriCB-(28)	--	--	0.0000805	0.000101	--	--	--	--	0.000287	0.000449	0.000385	--	--
TriCB-(20)+(21)+(33)	--	--	0.0000745	0.0000506	--	--	--	--	0.000197	0.000307	0.000147	--	--
22'46-TetraCB-(50)	--	--	0.00000586 U	0.00000375 U	--	--	--	--	0.00000375 U	0.00000375 U	0.00000375 U	--	--
22'56'-TetraCB-(53)	--	--	0.00000586 U	0.00000375 U	--	--	--	--	0.00000375 U	0.000136	0.0000818	--	--
22'46'-TetraCB-(51)	--	--	0.00000586 U	0.00000375 U	--	--	--	--	0.00000375 U	0.0000353	0.0000451	--	--
22'36-TetraCB-(45)	--	--	0.00000586 U	0.00000375 U	--	--	--	--	0.00000375 U	0.0000941	0.000059	--	--
TetraCB-(52)+(69)	--	--	0.0000802	0.000062	--	--	--	--	0.000592	0.00163	0.000906	--	--
TetraCB-(43)+(49)	--	--	0.0000293	0.00000375 U	--	--	--	--	0.000282	0.000785	0.000424	--	--
22'44'-TetraCB-(47)	--	--	0.00000375 U	0.000039	--	--	--	--	0.00000375 U	0.00027	0.000178	--	--
TetraCB-(48)+(75)	--	--	0.00000375 U	0.00000375 U	--	--	--	--	0.00000375 U	0.00021	0.0000931	--	--
2356-TetraCB-(65)	--	--	0.00000375 U	0.00000375 U	--	--	--	--	0.00000375 U	0.00000375 U	0.00000375 U	--	--
2346-TetraCB-(62)	--	--	0.00000375 U	0.00000375 U	--	--	--	--	0.00000375 U	0.00000375 U	0.00000375 U	--	--
22'35'-TetraCB-(44)	--	--	0.0000333	0.0000299	--	--	--	--	0.00000375 U	0.000823	0.000444	--	--
TetraCB-(42)+(59)	--	--	0.00000375 U	0.00000375 U	--	--	--	--	0.00000375 U	0.000264	0.000138	--	--
TetraCB-(41)+(64)+(71)+(72)	--	--	0.0000277	0.0000292	--	--	--	--	0.000348	0.000844	0.000471	--	--
22'33'-TetraCB-(40)	--	--	0.00000375 U	0.00000375 U	--	--	--	--	0.00000375 U	0.0000997	0.0000482	--	--
244'5-TetraCB-(74)	--	--	0.0000219	0.00000375 U	--	--	--	--	0.00000375 U	0.000455	0.000245	--	--
TetraCB-(61)+(70)	--	--	0.0000644	0.00000375 U	--	--	--	--	0.000384	0.00147	0.00077	--	--
TetraCB-(66)+(76)	--	--	0.0000436	0.00000375 U	--	--	--	--	0.000184	0.000964	0.00046	--	--
TetraCB-(56)+(60)	--	--	0.00000359 U	0.00000359 U	--	--	--	--	0.00000359 U	0.000412	0.000242	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-1		MW-2							MW-3	
			8/11/2020	2/24/2021	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/23/2021	2/23/2016	6/3/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'44'6-PentaCB-(100)	--	--	0.00000475 U	0.00000475 U	--	--	--	--	0.00000475 U	0.00000475 U	0.00000475 U	--	--
PentaCB-(93)+(95)+(98)+(102)	--	--	0.000124	0.00000475 U	--	--	--	--	0.00000475 U	0.00145	0.000793	--	--
PentaCB-(84)+(92)	--	--	0.0000671	0.00000346 U	--	--	--	--	0.00000346 U	0.000695	0.000362	--	--
PentaCB-(90)+(101)	--	--	0.000161	0.00000346 U	--	--	--	--	0.000709	0.00187	0.000903	--	--
233'5'6-PentaCB-(113)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.000772	0.00000346 U	--	--
22'44'5-PentaCB-(99)	--	--	0.0000397	0.00000346 U	--	--	--	--	0.000305	0.0000644	0.000383	--	--
22'33'5-PentaCB-(83)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.0000806	0.00000346 U	--	--
PentaCB-(112)+(119)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.00000346 U	0.00000346 U	--	--
233'46-PentCB-(109)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.00000346 U	0.00000346 U	--	--
22'3'45-PentaCB-(97)	--	--	0.0000297	0.00000346 U	--	--	--	--	0.00000346 U	0.000501	0.000221	--	--
22'345-PentaCB-(86)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.000693	0.00000346 U	--	--
PentaCB-(87)+(117)+(125)	--	--	0.0000491	0.00000346 U	--	--	--	--	0.000222	0.0000364	0.000357	--	--
PentaCB-(111)+(115)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.000258	0.00000346 U	--	--
PentaCB-(85)+(116)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.00000346 U	0.000141	--	--
233'4'6-PentaCB-(110)	--	--	0.000221	0.00000346 U	--	--	--	--	0.00000346 U	0.000221	0.00118	--	--
2'3455'-PentaCB-(124)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.000063	0.00000346 U	--	--
PentaCB-(107)+(108)	--	--	0.00000346 U	0.00000346 U	--	--	--	--	0.00000346 U	0.000126	0.0000481	--	--
PentaCB-(106)+(118)	--	--	0.000154	0.00000558 U	--	--	--	--	0.000414	0.00139	0.000627	--	--
22'33'66'-HexaCB-(136)	--	--	0.0000376	0.00000486 U	--	--	--	--	0.00000486 U	0.000288	0.000187	--	--
22'355'6-HexaCB-(151)	--	--	0.0000422	0.00000486 U	--	--	--	--	0.00000486 U	0.00000486 U	0.000196	--	--
22'33'56'-HexaCB-(135)	--	--	0.00000486 U	0.00000486 U	--	--	--	--	0.00000486 U	0.000244	0.0001	--	--
22'34'56-HexaCB-(147)	--	--	0.00000486 U	0.00000486 U	--	--	--	--	0.00000486 U	0.00000486 U	0.00000486 U	--	--
HexaCB-(139)+(149)	--	--	0.000117	0.00000486 U	--	--	--	--	0.000338	0.0017	0.000806	--	--
22'344'6'-HexaCB-(140)	--	--	0.00000486 U	0.00000486 U	--	--	--	--	0.00000486 U	0.00000486 U	0.00000486 U	--	--
HexaCB-(131)+(142)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.0000589	0.00000519 U	--	--
HexaCB-(132)+(146)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.000371	0.000165	--	--
HexaCB-(161)+(165)	--	--	0.0000566	0.00000519 U	--	--	--	--	0.00000519 U	0.00074	0.000332	--	--
22'44'55'-HexaCB-(153)	--	--	0.000165	0.00000519 U	--	--	--	--	0.000576	0.00221	0.000903	--	--
23'44'5'6-HexaCB-(168)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.00000519 U	0.00000519 U	--	--
HexaCB-(138)+(163)+(164)	--	--	0.000187	0.00000519 U	--	--	--	--	0.000533	0.00253	0.00107	--	--
HexaCB-(158)+(160)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.000278	0.00014	--	--
22'33'45-HexaCB-(129)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.0000607	0.0000268	--	--
2344'56-HexaCB-(166)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.00000519 U	0.00000519 U	--	--
HexaCB-(138)+(162)	--	--	0.00000519 U	0.00000519 U	--	--	--	--	0.00000519 U	0.000306	0.00013	--	--
233'44'5-HexaCB-(156)	--	--	0.0000382	0.00000413 U	--	--	--	--	0.00000413 U	0.000222	0.0000972	--	--
233'44'5'-HexaCB-(157)	--	--	0.00000607 U	0.00000607 U	--	--	--	--	0.00000607 U	0.0000692	0.00000607 U	--	--
HeptaCB-(182)+(187)	--	--	0.0000538	0.00000567 U	--	--	--	--	0.00000567 U	0.000644	0.000262	--	--
22'33'44'6-HeptaCB(171)	--	--	0.00000369 U	0.00000369 U	--	--	--	--	0.00000369 U	0.000228	0.0000733	--	--
22'33'456-HeptaCB-(1173)	--	--	0.00000369 U	0.00000369 U	--	--	--	--	0.00000369 U	0.0000226	0.00000369 U	--	--
22'344'55'-HeptaCB-(180)	--	--	0.0000742	0.00000369 U	--	--	--	--	0.00000369 U	0.00144	0.000687	--	--
233'4'55'6-HeptaCB-(193)	--	--	0.00000369 U	0.00000369 U	--	--	--	--	0.00000369 U	0.0000837	0.00000369 U	--	--
22'33'455'6-OctaCB-(198)	--	--	0.00000431 U	0.00000431 U	--	--	--	--	0.00000431 U	0.00000431 U	0.00000431 U	--	--
22'33'455'6'-OctaCB-(199)	--	--	0.00000431 U	0.00000431 U	--	--	--	--	0.00000431 U	0.000248	0.000109	--	--
OctaCB-(196)+(203)	--	--	0.00000431 U	0.00000431 U	--	--	--	--	0.00000431 U	0.00023	0.0000824	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS									CENTRAL PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3						MW-4				MW-5
			9/14/2016	12/20/2016	11/22/2019	11/22/2019	8/12/2020	3/1/2021	2/23/2016	6/3/2016	9/15/2016	12/20/2016	2/24/2016
			Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
Total PCB Congeners	0.014 --		0.111	0.0556	0.08706176 J	0.06199226 J	0.06612806	0.01240696	0.000086	0.00719	0.00000991	0.0000811	0.000124
2,3-DiCB-(5)	--	--	0.000052 U	0.000054 U	--	--	--	--	0.000096 U	0.000074 U	0.000058 U	0.000061 U	0.000097 U
2,3'-DiCB-(6)	--	--	0.000797	0.000627	0.000631	0.000492	0.00141	0.00054	0.000096 U	0.000022 U	0.000052 U	0.000059 U	0.000097 U
2,4-DiCB-(7)	--	--	0.000143	0.000117	--	--	--	--	0.000096 U	0.00002 U	0.000059 U	0.000066 U	0.000097 U
2,4'-DiCB-(8)	--	--	0.00239	0.00182	--	--	--	--	0.000096 U	0.000019 U	0.000056 U	0.000062 U	0.000097 U
2,5-DiCB-(9)	--	--	0.00018	0.00014 U	--	--	--	--	0.000096 U	0.000017 U	0.000054 U	0.000057 U	0.000097 U
2,6-DiCB-(10)	--	--	0.000094 U	0.00014 U	--	--	--	--	0.000096 U	0.000051 U	0.00009 U	0.000097 U	0.000097 U
22'33'44'55'6'-NonaCB-(206)	--	--	0.000298	0.000091 U	0.00000561 U	0.00000561 U	0.000175	0.00000561 U	0.000096 U	0.000051 U	0.0000056 U	0.000012 U	0.000097 U
22'33'44'55'-OctaCB-(194)	--	--	0.000934	0.000307	0.000725	0.000489	0.000618	0.0000358	0.000096 U	0.000075	0.0000027 U	0.0000052 U	0.000097 U
22'33'44'56'6'-NonaCB-(207)	--	--	0.0000341	0.000011 U	0.00000375 U	0.00000375 U	0.0000231	0.00000375 U	0.000096 U	0.000016 U	0.0000044 U	0.00001 U	0.000097 U
22'33'44'56'-OctaCB-(195)	--	--	0.000371	0.00012 U	0.000334	0.0002	0.000313	0.00000716 U	0.000096 U	0.000015 U	0.0000029 U	0.0000058 U	0.000097 U
22'33'44'56'-OctaCB-(196)	--	--	0.000486	0.00018 U	--	--	--	--	0.000096 U	0.000041	0.0000043 U	0.00001 U	0.000097 U
22'33'44'5'-HeptaCB-(170)	--	--	0.0016	0.000659	0.00167	0.00104	0.00107	0.0000487	0.000096 U	0.000133	0.0000048 U	0.0000051 U	0.000097 U
22'33'44'66'-OctaCB-(197)	--	--	0.000032	0.000018 U	0.00000431 U	0.00000431 U	0.0000247	0.00000431 U	0.000096 U	0.000018 U	0.0000033 U	0.0000088 U	0.000097 U
22'33'455'66'-NonaCB-(208)	--	--	0.0000666	0.000029	0.00000375 U	0.00000375 U	0.0000363	0.00000375 U	0.000096 U	0.000018 U	0.0000054 U	0.000012 U	0.000097 U
22'33'455'-HeptaCB-(172)	--	--	0.000289	0.000129	0.00000369 U	0.00000369 U	0.000231	0.0000343	0.000096 U	0.000024	0.0000055 U	0.0000067 U	0.000097 U
22'33'4566'-OctaCB-(200)	--	--	0.000131	0.0000682	0.00000431 U	0.00000431 U	0.0000738	0.00000431 U	0.000096 U	0.000014 U	0.0000031 U	0.0000073 U	0.000097 U
22'33'45'66'-OctaCB-(201)	--	--	0.000136	0.0000694	0.00000431 U	0.00000431 U	0.000104	0.00000431 U	0.000096 U	0.000016	0.000003 U	0.0000075 U	0.000097 U
22'33'456'-HeptaCB-(174)	--	--	0.00195	0.000822	0.00302	0.00167	0.00169	0.000109	0.000096 U	0.000191	0.0000053 U	0.0000065 U	0.000097 U
22'33'45'6'-HeptaCB-(175)	--	--	0.0000742	0.00003 U	0.00000567 U	0.00000567 U	0.0000255	0.00000567 U	0.000096 U	0.00003 U	0.000004 U	0.00001 U	0.000097 U
22'33'45'6'-HeptaCB-(177)	--	--	0.00145	0.000692	0.00205	0.00119	0.00000369 U	0.0000674	0.000096 U	0.000145	0.0000055 U	0.0000067 U	0.000097 U
22'33'45'-HexaCB-(130)	--	--	0.000278	0.000138	0.000251	0.0000849	0.00000519 U	0.00000519 U	0.000096 U	0.000026 U	0.0000084 U	0.0000083 U	0.000097 U
22'33'466'-HeptaCB-(176)	--	--	0.0003	0.000142	0.00000567 U	0.00000567 U	0.000214	0.0000226	0.000096 U	0.000025	0.0000031 U	0.0000081 U	0.000097 U
22'33'46'-HexaCB-(131)	--	--	0.000028	0.000024 U	--	--	--	--	0.000096 U	0.000028 U	0.0000091 U	0.0000092 U	0.000097 U
22'33'46'-HexaCB-(132)	--	--	0.00196	0.00101	--	--	--	--	0.000096 U	0.000189	0.0000092 U	0.000009 U	0.000097 U
22'33'4'-PentaCB-(82)	--	--	0.000093	0.000042 U	0.00000346 U	0.00000346 U	0.0000691	0.00000346 U	0.000096 U	0.000023 U	0.0000057 U	0.0000089 U	0.000097 U
22'33'55'66'-OctaCB-(202)	--	--	0.000217	0.0000922	0.00000431 U	0.00000431 U	0.000203	0.00000431 U	0.000096 U	0.000018 U	0.0000036 U	0.000008 U	0.000097 U
22'33'55'6'-HeptaCB-(178)	--	--	0.000602	0.00029	0.000444	0.000238	0.000338	0.0000259	0.000096 U	0.000056	0.0000043 U	0.000011 U	0.000097 U
22'33'55'-HexaCB-(133)	--	--	0.000328	0.000179	0.00000519 U	0.00000519 U	0.00000519 U	0.00000519 U	0.000096 U	0.000022 U	0.0000078 U	0.0000075 U	0.000097 U
22'33'566'-HeptaCB-(179)	--	--	0.00113	0.000609	0.0012	0.000802	0.000913	0.0000585	0.000096 U	0.000097	0.000003 U	0.000008 U	0.000097 U
22'33'66'-HexaCB-(136)	--	--	0.00104	0.000612	0	0	0	0	0.000096 U	0.000082	0.0000045 U	0.000013 U	0.000097 U
22'33'6'-PentaCB-(84)	--	--	0.000364	0.000216	--	--	--	--	0.000096 U	0.000027 U	0.0000059 U	0.0000095 U	0.000097 U
22'344'55'6'-OctaCB-(203)	--	--	0.000645	0.000274	--	--	--	--	0.000096 U	0.00005	0.0000044 U	0.000011 U	0.000097 U
22'344'566'-OctaCB-(204)	--	--	0.0000053 U	0.0000027 U	0.00000431 U	0.00000431 U	0.00000431 U	0.00000431 U	0.000096 U	0.000015 U	0.000003 U	0.0000076 U	0.000097 U
22'344'56'-HeptaCB-(181)	--	--	0.000007 U	0.000018 U	0.00000369 U	0.00000369 U	0.00114	0.00000369 U	0.000096 U	0.000022 U	0.0000056 U	0.0000071 U	0.000097 U
22'344'56'-HeptaCB-(182)	--	--	0.0000285	0.000013 U	--	--	--	--	0.000096 U	0.000031 U	0.0000043 U	0.000011 U	0.000097 U
22'344'5'6'-HeptaCB-(183)	--	--	0.0011	0.000419	0.000617	0.000383	0.000581	0.0000306	0.000096 U	0.00009	0.0000045 U	0.0000056 U	0.000097 U
22'344'5'-HexaCB-(137)	--	--	0.000054	0.000028 U	0.00000519 U	0.00000519 U	0.000196	0.00000519 U	0.000096 U	0.000028 U	0.000009 U	0.000009 U	0.000097 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS									CENTRAL PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3						MW-4				MW-5
			9/14/2016	12/20/2016	11/22/2019	11/22/2019	8/12/2020	3/1/2021	2/23/2016	6/3/2016	9/15/2016	12/20/2016	2/24/2016
			Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'344'66'-HeptaCB-(184)	--	--	0.0000043 U	0.00001 U	0.00000567 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.000022 U	0.0000032 U	0.0000085 U	0.000097 U
22'3455'6-HeptaCB-(185)	--	--	0.0000076 U	0.000019 U	0.00000369 U	0.00000369 U	0.00013	0.00000369 U	0.000096 U	0.000026 U	0.0000062 U	0.0000079 U	0.000097 U
22'34'55'6-HeptaCB-(187)	--	--	0.00353	0.00172	--	--	--	--	0.000096 U	0.000322	0.0000043 U	0.000011 U	0.000097 U
22'3455'-HexaCB-(141)	--	--	0.00094	0.00046	0.000784	0.000541	0.000545	0.000035	0.000096 U	0.00009	0.0000081 U	0.0000075 U	0.000097 U
22'34'55'-HexaCB-(146)	--	--	0.00238	0.00119	--	--	--	--	0.000096 U	0.000207	0.0000069 U	0.0000067 U	0.000097 U
22'34566'-HeptaCB-(186)	--	--	0.0000047 U	0.000011 U	0.00000567 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.000024 U	0.0000035 U	0.0000094 U	0.000097 U
22'34'566'-HeptaCB-(188)	--	--	0.0000124	0.000009 U	0.00000567 U	0.00000567 U	0.00000567 U	0.00000567 U	0.000096 U	0.000017 U	0.000004 U	0.0000074 U	0.000097 U
22'3456-HexaCB-(142)	--	--	0.000017 U	0.000022 U	--	--	--	--	0.000096 U	0.000025 U	0.0000082 U	0.0000081 U	0.000097 U
22'345'6-HexaCB-(144)	--	--	0.000203	0.000128	0.00000486 U	0.00000486 U	0.000103	0.00000486 U	0.000096 U	0.00004 U	0.0000059 U	0.000017 U	0.000097 U
22'34'56'-HexaCB-(148)	--	--	0.000114	0.000064	0.00000486 U	0.00000486 U	0.0000654	0.00000486 U	0.000096 U	0.000041 U	0.0000059 U	0.000017 U	0.000097 U
22'3466'-HexaCB-(145)	--	--	0.0000025 U	0.000013 U	0.00000486 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.000032 U	0.0000051 U	0.000015 U	0.000097 U
22'34'66'-HexaCB-(150)	--	--	0.000068	0.000035 U	0.00000486 U	0.00000486 U	0.0000452	0.00000486 U	0.000096 U	0.000031 U	0.0000049 U	0.000016 U	0.000097 U
22'346'-PentaCB-(89)	--	--	0.000012 U	0.0000094 U	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	0.000096 U	0.000022 U	0.0000053 U	0.0000085 U	0.000097 U
22'34'-TetraCB-(42)	--	--	0.000513	0.000262	--	--	--	--	0.000096 U	0.000042	0.0000078 U	0.0000085 U	0.000097 U
22'355'-PentaCB-(92)	--	--	0.00132	0.000598	--	--	--	--	0.000096 U	0.000095	0.0000051 U	0.0000081 U	0.000097 U
22'3566'-HexaCB-(152)	--	--	0.0000024 U	0.000011 U	0.00000486 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.000028 U	0.0000044 U	0.000013 U	0.000097 U
22'356'-PentaCB-(94)	--	--	0.0000202	0.000011 U	0.00000475 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.000026 U	0.0000059 U	0.0000097 U	0.000097 U
22'35'6-PentaCB-(95)	--	--	0.00281	0.00142	--	--	--	--	0.000096 U	0.000183	0.0000049 U	0.0000112	0.000097 U
22'35-TetraCB-(43)	--	--	0.000096	0.00005	--	--	--	--	0.000096 U	0.000031 U	0.00001 U	0.000011 U	0.000097 U
22'366'-PentaCB-(96)	--	--	0.0000189	0.0000173	0.00000475 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.000016 U	0.0000012 U	0.0000027 U	0.000097 U
22'36'-TetraCB-(46)	--	--	0.000152	0.000102	0.0000854	0.0000781	0.0000926	0.0000327	0.000096 U	0.000025 U	0.0000078 U	0.0000085 U	0.000097 U
22'3-TriCB-(16)	--	--	0.00133	0.00104	--	--	--	--	0.000096 U	0.000068	0.00001 U	0.000035 U	0.000097 U
22'44'56'-HexaCB-(154)	--	--	0.000531	0.000286	0.000326	0.000238	0.000309	0.0000283	0.000096 U	0.000041	0.0000053 U	0.000016 U	0.000097 U
22'44'66'-HexaCB-(155)	--	--	0.0000027 U	0.0000072 U	0.00000486 U	0.00000486 U	0.00000486 U	0.00000486 U	0.000096 U	0.000015 U	0.0000054 U	0.0000086 U	0.000097 U
22'45'6-PentaCB-(103)	--	--	0.000242	0.00011 U	0.000212	0.000213	0.000159	0.00000475 U	0.000096 U	0.000017 U	0.0000044 U	0.0000072 U	0.000097 U
22'45-TetraCB-(48)	--	--	0.000353	0.000162	--	--	--	--	0.000096 U	0.000021 U	0.0000073 U	0.0000075 U	0.000097 U
22'466'-PentaCB-(104)	--	--	0.0000064	0.000002 U	0.00000475 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.0000077 U	0.0000014 U	0.0000017 U	0.000097 U
22'4-TriCB-(17)	--	--	0.00147	0.000897	0.00133	0.000892	0.0015	0.000638	0.000096 U	0.000065	0.0000069 U	0.000023 U	0.000097 U
22'55'-TetraCB-(52)	--	--	0.00291	0.00144	--	--	--	--	0.000096 U	0.000182	0.0000061 U	0.0000066 U	0.000097 U
22'66'-TetraCB-(54)	--	--	0.000128	0.00011 U	0.000173	0.000122	0.000151	0.0000687	0.000096 U	0.000018 U	0.0000037 U	0.000012 U	0.000097 U
22'6-TriCB-(19)	--	--	0.000422	0.000335	0.000169	0.000143	0.000344	0.000184	0.000096 U	0.000013 U	0.0000072 U	0.000018 U	0.000097 U
22'-DiCB-(4)	--	--	0.002	0.00227	--	--	--	--	0.000096 U	0.000037 U	0.00013 U	0.000097 U	0.000097 U
233'44'55'6-OctaCB-(205)	--	--	0.000046 U	0.00002 U	0.00000716 U	0.00000716 U	0.0000244	0.00000716 U	0.000096 U	0.000014	0.0000025 U	0.0000056 U	0.000097 U
233'44'55'-HeptaCB-(189)	--	--	0.000063	0.0000288	0.00000369 U	0.00000369 U	0.0000424	0.00000369 U	0.000096 U	0.000012 U	0.0000052 U	0.000006 U	0.000097 U
233'44'56-HeptaCB-(190)	--	--	0.000315	0.000139	0.000406	0.000387	0.000298	0.00000369 U	0.000096 U	0.000027	0.0000042 U	0.0000051 U	0.000097 U
233'44'5'6-HeptaCB-(191)	--	--	0.0000577	0.000028 U	0.00000369 U	0.00000369 U	0.0000659	0.00000369 U	0.000096 U	0.000012 U	0.0000041 U	0.0000049 U	0.000097 U
233'44'6-HexaCB-(158)	--	--	0.000293	0.000152	--	--	--	--	0.000096 U	0.000024 U	0.0000056 U	0.0000054 U	0.000097 U
233'44'-PentaCB-(105)	--	--	0.000268	0.000125	0.000278	0.000204	0.000131	0.00000487 U	0.000096 U	0.000025 U	0.0000034 U	0.0000045 U	0.000097 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS									CENTRAL PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3						MW-4				MW-5
			9/14/2016	12/20/2016	11/22/2019	11/22/2019	8/12/2020	3/1/2021	2/23/2016	6/3/2016	9/15/2016	12/20/2016	2/24/2016
			Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
233'455'6-HeptaCB-(192)	--	--	0.000006 U	0.000015 U	0.00000369 U	0.00000369 U	0.00000369 U	0.00000369 U	0.000096 U	0.000015 U	0.0000048 U	0.000006 U	0.000097 U
233'455'-HexaCB-(159)	--	--	0.0000558	0.0000313	0.00000519 U	0.00000519 U	0.0000461	0.00000519 U	0.000096 U	0.000015 U	0.0000017 U	0.0000043 U	0.000097 U
233'4'55'-HexaCB-(162)	--	--	0.0000077 U	0.0000083 U	--	--	--	--	0.000096 U	0.000016 U	0.0000019 U	0.0000048 U	0.000097 U
233'456-HexaCB-(160)	--	--	0.000014 U	0.000018 U	--	--	--	--	0.000096 U	0.00002 U	0.0000067 U	0.0000068 U	0.000097 U
233'45'6-HexaCB-(161)	--	--	0.000012 U	0.000015 U	--	--	--	--	0.000096 U	0.000016 U	0.0000059 U	0.0000056 U	0.000097 U
233'4'5'6-HexaCB-(164)	--	--	0.00036	0.000186	--	--	--	--	0.000096 U	0.000038	0.0000058 U	0.0000055 U	0.000097 U
233'45-PentaCB-(106)	--	--	0.0000059 U	0.0000067 U	--	--	--	--	0.000096 U	0.000013 U	0.0000032 U	0.0000028 U	0.000097 U
233'4'5-PentaCB-(107)	--	--	0.000176	0.0000705	--	--	--	--	0.000096 U	0.000016	0.0000028 U	0.0000025 U	0.000097 U
233'4'5'-PentaCB-(122)	--	--	0.0000059 U	0.000007 U	0.00000325 U	0.00000325 U	0.00000325 U	0.00000325 U	0.000096 U	0.000013 U	0.0000032 U	0.0000029 U	0.000097 U
233'4'-Tetra CB(56)	--	--	0.000481	0.00017 U	--	--	--	--	0.000096 U	0.000027	0.0000024 U	0.0000043 U	0.000097 U
233'4-TetraCB-(55)	--	--	0.000013 U	0.0000056 U	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000019 U	0.0000025 U	0.0000045 U	0.000097 U
233'55'6-HexaCB-(165)	--	--	0.00002 U	0.000018 U	--	--	--	--	0.000096 U	0.000019 U	0.0000069 U	0.0000067 U	0.000097 U
233'55'-PentaCB-(111)	--	--	0.0000187	0.0000109	--	--	--	--	0.000096 U	0.000015 U	0.0000041 U	0.0000063 U	0.000097 U
233'56-PentaCB-(112)	--	--	0.0000054 U	0.0000064 U	--	--	--	--	0.000096 U	0.000014 U	0.000004 U	0.0000058 U	0.000097 U
233'5-TetraCB-(57)	--	--	0.000018	0.0000048 U	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000017 U	0.0000021 U	0.0000039 U	0.000097 U
233'5'-TetraCB-(58)	--	--	0.000013 U	0.0000053 U	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000019 U	0.0000024 U	0.0000043 U	0.000097 U
23'44'55'-HexaCB-(167)	--	--	0.0000929	0.000045	0.00000519 U	0.00000519 U	0.0000523	0.00000519 U	0.000096 U	0.000018 U	0.0000019 U	0.000006 U	0.000097 U
2344'5-PentaCB-(114)	--	--	0.000024 U	0.0000083 U	0.00000325 U	0.00000325 U	0.00000325 U	0.00000325 U	0.000096 U	0.000016 U	0.0000033 U	0.0000035 U	0.000097 U
23'44'5-PentaCB-(118)	--	--	0.00106	0.00043 U	--	--	--	--	0.000096 U	0.000093	0.0000034 U	0.000011 U	0.000097 U
23'44'5'-PentaCB-(123)	--	--	0.0000082	0.0000094 U	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	0.000096 U	0.000018 U	0.0000038 U	0.0000039 U	0.000097 U
2344'-TetraCB -(60)	--	--	0.000062	0.000021 U	--	--	--	--	0.000096 U	0.000019 U	0.0000025 U	0.0000043 U	0.000097 U
23'44'-TetraCB-(66)	--	--	0.000958	0.000369	--	--	--	0	0.0000023 J	0.000061	0.000002 U	0.0000036 U	0.000097 U
23'455'-PentaCB-(120)	--	--	0.0000505	0.000025 U	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	0.000096 U	0.000013 U	0.0000036 U	0.0000055 U	0.000097 U
23'45'6-PentaCB-(121)	--	--	0.000015	0.0000072 U	0.00000475 U	0.00000475 U	0.00000475 U	0.00000475 U	0.000096 U	0.000015 U	0.0000041 U	0.0000065 U	0.000097 U
234'5-TetraCB-(63)	--	--	0.055	0.0000202	0.00000375 U	0.00000375 U	0.0000303	0.00000375 U	0.000096 U	0.000016 U	0.000002 U	0.0000037 U	0.000097 U
23'45-TetraCB-(67)	--	--	0.000043	0.000013 U	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000015 U	0.000002 U	0.0000036 U	0.000097 U
23'45'-TetraCB-(68)	--	--	0.00004	0.000015 U	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	0.0000109 J	0.000017 U	0.0000021 U	0.0000058 U	0.0000135 J
234'6-TetraCB-(64)	--	--	0.000673	0.000317	--	--	--	--	0.000096 U	0.000042	0.0000055 U	0.0000056 U	0.000097 U
234'-TriCB-(22)	--	--	0.000871	0.000375	0.001	0.000852	0.0008	0.000237	0.000096 U	0.000044	0.0000047 U	0.0000039 U	0.0000048 J
23'4-TriCB-(25)	--	--	0.000458	0.000208	0.000519	0.000389	0.00059	0.000134	0.000096 U	0.000025	0.000004 U	0.0000033 U	0.000097 U
23'55'-TetraCB-(72)	--	--	0.000044	0.0000183	--	--	--	--	0.000096 U	0.000016 U	0.000002 U	0.0000036 U	0.000097 U
23'5'6-TetraCB-(73)	--	--	0.0000025 U	0.0000061 U	0.00000375 U	0.00000375 U	0.0000975	0.00000375 U	0.000096 U	0.000014 U	0.0000052 U	0.0000054 U	0.000097 U
235-TriCB-(23)	--	--	0.0000049 U	0.0000063 U	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000015 U	0.0000047 U	0.000004 U	0.000097 U
23'5'-TriCB-(34)	--	--	0.0000291	0.000013	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000013 U	0.0000042 U	0.0000035 U	0.000097 U
236-TriCB-(24)	--	--	0.0000202	0.000019 U	--	--	--	--	0.000096 U	0.0000092 U	0.0000056 U	0.000018 U	0.000097 U
23'6-TriCB-(27)	--	--	0.000187	0.000129	--	--	--	--	0.000096 U	0.0000102	0.0000047 U	0.000014 U	0.000097 U
24'5-TriCB-(31)	--	--	0.00251	0.00105	0.00329	0.00249	0.00189	0.000559	0.0000066 J	0.000114	0.0000046	0.0000032 U	0.000097 U
24'6-TriCB-(32)	--	--	0.000978	0.000661	--	--	--	--	0.000096 U	0.0000526	0.0000046 U	0.000014 U	0.000097 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS									CENTRAL PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3						MW-4				MW-5
			9/14/2016	12/20/2016	11/22/2019	11/22/2019	8/12/2020	3/1/2021	2/23/2016	6/3/2016	9/15/2016	12/20/2016	2/24/2016
			Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
2-MonoCB-(1)	--	--	0.00107	0.00215	0.000103	0.000144	0.000943	0.000411	0.000096 U	0.000021	0.0000061 U	0.0000025 U	0.0000087 J
3,3'-DiCB-(11)	--	--	0.000072	0.000052 U	0.0000742	0.0000681	0.000233	0.000389	0.000096 U	0.000022 U	0.000054 U	0.000059 U	0.000097 U
3,5-DiCB-(14)	--	--	0.000047 U	0.00005 U	0.00000831 U	0.00000831 U	0.00000831 U	0.00000831 U	0.000096 U	0.000017 U	0.000053 U	0.000057 U	0.000097 U
33'44'55'-HexaCB-(169)	--	--	0.0000078 U	0.00001 U	0.0000052 U	0.0000052 U	0.0000052 U	0.0000052 U	0.000096 U	0.000018 U	0.0000019 U	0.000006 U	0.000097 U
33'44'5-PentaCB-(126)	--	--	0.0000063 U	0.0000086 U	0.00000573 U	0.00000573 U	0.00000573 U	0.00000573 U	0.000096 U	0.000017 U	0.0000034 U	0.0000036 U	0.000097 U
33'44'-TetraCB-(77)	--	--	0.000056	0.0000246	0.000165	0.0000529	0.00000359 U	0.00000522 U	0.000096 U	0.000024 U	0.0000024 U	0.0000049 U	0.000097 U
33'455'-PentaCB-(127)	--	--	0.0000054 U	0.0000062 U	0.00000487 U	0.00000487 U	0.00000487 U	0.00000487 U	0.000096 U	0.000012 U	0.000003 U	0.0000026 U	0.000097 U
33'45-TetraCB-(78)	--	--	0.000011 U	0.0000046 U	0.00000359 U	0.00000359 U	0.00000359 U	0.00000359 U	0.000096 U	0.000016 U	0.0000021 U	0.0000036 U	0.000097 U
33'45'-TetraCB-(79)	--	--	0.000016	0.000004 U	0.00000359 U	0.00000359 U	0.00000359 U	0.00000359 U	0.000096 U	0.000014 U	0.0000019 U	0.0000032 U	0.000097 U
33'4-TriCB-(35)	--	--	0.000015 U	0.0000055 U	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000012 U	0.0000042 U	0.0000034 U	0.000097 U
33'55'-TetraCB-(80)	--	--	0.00001 U	0.0000043 U	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	0.000096 U	0.000015 U	0.0000019 U	0.0000034 U	0.000097 U
33'5-TriCB-(36)	--	--	0.0000038 U	0.0000048 U	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000011 U	0.0000036 U	0.000003 U	0.000097 U
344'5-TetraCB-(81)	--	--	0.000013 U	0.0000064 U	0.00000359 U	0.00000359 U	0.00000359 U	0.00000359 U	0.000096 U	0.000025 U	0.0000024 U	0.0000051 U	0.000097 U
344'-TriCB-(37)	--	--	0.000281	0.000137	0.000328	0.000281	0.000227	0.0000681	0.000096 U	0.000024 U	0.0000057 U	0.000006 U	0.000097 U
345-TriCB-(38)	--	--	0.0000044 U	0.0000052 U	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000012 U	0.0000042 U	0.0000033 U	0.000097 U
34'5-TriCB-(39)	--	--	0.0000148	0.0000057 U	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	0.000096 U	0.000013 U	0.0000044 U	0.0000036 U	0.000097 U
3-MonoCB-(2)	--	--	0.0000137	0.0000229	0.00000349 U	0.00000349 U	0.00000349 U	0.00000349 U	0.000096 U	0.0000091 U	0.0000054 U	0.0000023 U	0.000097 U
4,4'-DiCB-(15)	--	--	0.000279	0.000188	0.000179	0.000139	0.000225	0.00000831 U	0.000096 U	0.000033 U	0.000075 U	0.000093 U	0.000097 U
4-MonoCB-(3)	--	--	0.0000718	0.000122	0.000236	0.000192	0.0000708	0.0000423	0.000096 U	0.000011 U	0.000006 U	0.0000025 U	0.000097 U
DecaCB-(209)	--	--	0.000147	0.000033 U	0.00000414 U	0.00000414 U	0.0000637	0.00000414 U	0.000096 U	0.000016 U	0.0000038 U	0.000009 U	0.000097 U
DiCB-(12)+(13)	--	--	0.000052 U	0.000055 U	0.0000424	0.00000831 U	0.00000831 U	0.00000831 U	0.00019 U	0.000019 U	0.000058 U	0.000063 U	0.00019 U
HeptaCB-(171)+(173)	--	--	0.0005	0.000238	--	--	--	--	0.00019 U	0.000062	0.0000054 U	0.0000069 U	0.00019 U
HeptaCB-(180)+(193)	--	--	0.00433	0.00162	--	--	--	--	0.00019 U	0.000339	0.0000043 U	0.0000046 U	0.00019 U
HexaCB-(128)+(166)	--	--	0.000371	0.000221	--	--	--	--	0.00019 U	0.000037 U	0.000007 U	0.0000067 U	0.00019 U
HexaCB-(129)+(138)+(163)	--	--	0.00536	0.00253	--	--	--	--	0.00029 U	0.000474	0.0000076 U	0.000013 U	0.00029 U
HexaCB-(134)+(143)	--	--	0.000213	0.000113	0.000265	0.000127	0.000144	0.00000519 U	0.00019 U	0.000026 U	0.0000086 U	0.0000084 U	0.00019 U
HexaCB-(135)+(151)	--	--	0.00406	0.00221	--	--	--	--	0.00019 U	0.000314	0.0000064 U	0.000019 U	0.00019 U
HexaCB-(139)+(140)	--	--	0.000202	0.000103	--	--	--	--	0.00019 U	0.000022 U	0.0000076 U	0.0000077 U	0.00019 U
HexaCB-(147)+(149)	--	--	0.00686	0.00355	--	--	--	--	0.00019 U	0.00061	0.0000075 U	0.000012 U	0.00019 U
HexaCB-(153)+(168)	--	--	0.00694	0.00346	--	--	--	--	0.00019 U	0.000587	0.0000063 U	0.0000066 U	0.00019 U
HexaCB-(156)+(157)	--	--	0.000243	0.00011	--	--	--	--	0.00019 U	0.000021	0.0000018 U	0.0000056 U	0.00019 U
OctaCB-(198)+(199)	--	--	0.0011	0.000465	--	--	--	--	0.00019 U	0.000084	0.0000045 U	0.000011 U	0.00019 U
PentaCB-(108)+(124)	--	--	0.0000267	0.000011 U	--	--	--	--	0.00019 U	0.000013 U	0.0000032 U	0.0000028 U	0.00019 U
PentaCB-(110)+(115)	--	--	0.00264	0.00112	--	--	--	--	0.00019 U	0.000156	0.0000053 U	0.0000198	0.00019 U
PentaCB-(83)+(99)	--	--	0.00224	0.00114	--	--	--	--	0.00019 U	0.000164	0.0000053 U	0.0000089 U	0.00019 U
PentaCB-(85)+(116)+(117)	--	--	0.00016	0.0000725	--	--	--	0	0.00029 U	0.000016 U	0.0000044 U	0.0000068 U	0.00029 U
PentaCB-(86)(87)(97)(109)(119)(125)	--	--	0.000977	0.00045 U	--	--	--	--	0.00058 U	0.000079	0.0000046 U	0.0000107	0.00058 U
PentaCB-(88)+(91)	--	--	0.000413	0.000198	0.000279	0.000233	0.000274	0.00000475 U	0.00019 U	0.000029	0.0000053 U	0.0000084 U	0.00019 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS									CENTRAL PARCEL MONITORING WELLS					
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3						MW-4				MW-5	
			9/14/2016	12/20/2016	11/22/2019	11/22/2019	8/12/2020	3/1/2021	2/23/2016	6/3/2016	9/15/2016	12/20/2016	2/24/2016	
			Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	
Concentration in µg/L														
PentaCB-(90)+(101)+(113)	--	--	0.00388	0.00176	--	--	--	--	0.00029 U	0.000261	0.0000046 U	0.000011 U	0.00029 U	
PentaCB-(93)+(98)+(100)+(102)	--	--	0.000181	0.000092 U	--	--	--	--	0.00038 U	0.000022 U	0.0000053 U	0.0000086 U	0.00039 U	
TetraCB-(40)+(41)+(71)	--	--	0.000861	0.000434	--	--	--	--	0.00029 U	0.00005 U	0.0000069 U	0.0000071 U	0.00029 U	
TetraCB-(44)+(47)+(65)	--	--	0.00244	0.00115	--	--	--	--	0.0000358 J	0.000167	0.0000064 U	0.000014 U	0.0000383 J	
TetraCB-(45)+(51)	--	--	0.000801	0.000509	--	--	--	--	0.0000203 J	0.000087	0.0000069 U	0.0000394	0.0000584 J	
TetraCB-(49)+TetraCB-(69)	--	--	0.00214	0.001	--	--	--	--	0.00019 U	0.000125	0.0000059 U	0.0000062 U	0.00019 U	
TetraCB-(50)+(53)	--	--	0.000653	0.000473	--	--	--	--	0.00019 U	0.000049	0.0000066 U	0.0000071 U	0.00019 U	
TetraCB-(59)+(62)+(75)	--	--	0.000171	0.0000841	--	--	--	--	0.00029 U	0.000013 U	0.0000052 U	0.0000054 U	0.00029 U	
TetraCB-(61)+(70)+(74)+(76)	--	--	0.00187	0.000723	--	--	--	0	0.0000044 J	0.000123	0.0000023 U	0.0000093 U	0.00039 U	
TriCB-(18)+(30)	--	--	0.00273	0.00169	--	--	--	--	0.00019 U	0.000099	0.0000058 U	0.000019 U	0.00019 U	
TriCB-(20) + (28)	--	--	0.00306	0.00126	--	--	--	--	0.00019 U	0.000138	0.0000053	0.0000038 U	0.00019 U	
TriCB-(21)+(33)	--	--	0.00142	0.000601	--	--	--	--	0.0000057 J	0.000066	0.0000043 U	0.0000035 U	0.00019 U	
TriCB-(26)+(29)	--	--	0.000804	0.000364	--	--	--	--	0.00019 U	0.000039	0.0000042 U	0.0000035 U	0.00019 U	
DiCB-(4)+(10)	--	--	--	--	0.000454	0.000412	0.00159	0.000912	--	--	--	--	--	
DiCB-(7)+(9)	--	--	--	--	0.000239	0.000226	0.000525	0.000241	--	--	--	--	--	
DiCB-(5)+(8)	--	--	--	--	0.00214	0.0019	0.00421	0.00181	--	--	--	--	--	
246-TriCB-(30)	--	--	--	--	0.00000497 U	0.00000497 U	0.00000497 U	0.00000497 U	--	--	--	--	--	
22'5-TriCB-(18)	--	--	--	--	0.00281	0.00224	0.00308	0.00132	--	--	--	--	--	
TriCB-(24)+(27)	--	--	--	--	0.000277	0.000154	0.000333	0.000166	--	--	--	--	--	
TriCB-(16)+(32)	--	--	--	--	0.00228	0.00175	0.00266	0.00115	--	--	--	--	--	
245-TriCB-(29)	--	--	--	--	0.00000586 U	0.00000586 U	0.00000586 U	0.00000586 U	--	--	--	--	--	
23'5-TriCB-(26)	--	--	--	--	0.000995	0.000706	0.000724	0.000223	--	--	--	--	--	
244'-TriCB-(28)	--	--	--	--	0.00398	0.00296	0.0024	0.000784	--	--	--	--	--	
TriCB-(20)+(21)+(33)	--	--	--	--	0.00212	0.00155	0.00149	0.000477	--	--	--	--	--	
22'46-TetraCB-(50)	--	--	--	--	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	--	--	--	--	--	
22'56'-TetraCB-(53)	--	--	--	--	0.000528	0.000397	0.0007	0.000217	--	--	--	--	--	
22'46'-TetraCB-(51)	--	--	--	--	0.000449	0.000328	0.00048	0.000146	--	--	--	--	--	
22'36-TetraCB-(45)	--	--	--	--	0.000136	0.000149	0.000193	0.0000647	--	--	--	--	--	
TetraCB-(52)+(69)	--	--	--	--	0.00241	0.00174	0.00189	0.0000465	--	--	--	--	--	
TetraCB-(43)+(49)	--	--	--	--	0.00186	0.00137	0.00155	0.000342	--	--	--	--	--	
22'44'-TetraCB-(47)	--	--	--	--	0.00082	0.000599	0.000748	0.000163	--	--	--	--	--	
TetraCB-(48)+(75)	--	--	--	--	0.000285	0.000207	0.000226	0.0000792	--	--	--	--	--	
2356-TetraCB-(65)	--	--	--	--	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	--	--	--	--	--	
2346-TetraCB-(62)	--	--	--	--	0.00000375 U	0.00000375 U	0.00000375 U	0.00000375 U	--	--	--	--	--	
22'35'-TetraCB-(44)	--	--	--	--	0.000867	0.000633	0.00073	0.000201	--	--	--	--	--	
TetraCB-(42)+(59)	--	--	--	--	0.000417	0.000296	0.000367	0.0001	--	--	--	--	--	
TetraCB-(41)+(64)+(71)+(72)	--	--	--	--	0.00114	0.00082	0.000963	0.000229	--	--	--	--	--	
22'33'-TetraCB-(40)	--	--	--	--	0.000134	0.0000951	0.00000375 U	0.0000293	--	--	--	--	--	
244'5-TetraCB-(74)	--	--	--	--	0.000334	0.000266	0.000327	0.0000678	--	--	--	--	--	
TetraCB-(61)+(70)	--	--	--	--	0.00102	0.00076	0.000885	0.000166	--	--	--	--	--	
TetraCB-(66)+(76)	--	--	--	--	0.000963	0.000744	0.000761	0.000139	--	--	--	--	--	
TetraCB-(56)+(60)	--	--	--	--	0.000636	0.000363	0.000249	0.00000359 U	--	--	--	--	--	

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS									CENTRAL PARCEL MONITORING WELLS					
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3						MW-4				MW-5	
			9/14/2016	12/20/2016	11/22/2019	11/22/2019	8/12/2020	3/1/2021	2/23/2016	6/3/2016	9/15/2016	12/20/2016	2/24/2016	
			Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	
Concentration in µg/L														
22'44'6'-PentaCB-(100)	--	--	--	--	0.00000475 U	0.00000475 U	0.0000646	0.00000475 U	--	--	--	--	--	
PentaCB-(93)+(95)+(98)+(102)	--	--	--	--	0.000229	0.00179	0.00187	0.000231	--	--	--	--	--	
PentaCB-(84)+(92)	--	--	--	--	0.00205	0.0015	0.00116	0.000105	--	--	--	--	--	
PentaCB-(90)+(101)	--	--	--	--	0.00566	0.0041	0.00282	0.000266	--	--	--	--	--	
233'5'6'-PentaCB-(113)	--	--	--	--	0.00000346 U	0.00000346 U	0.0000439	0.00000346 U	--	--	--	--	--	
22'44'5'-PentaCB-(99)	--	--	--	--	0.00244	0.00187	0.00136	0.000111	--	--	--	--	--	
22'33'5'-PentaCB-(83)	--	--	--	--	0.000382	0.000312	0.000235	0.0000246	--	--	--	--	--	
PentaCB-(112)+(119)	--	--	--	--	0.00000346 U	0.00000346 U	0.0000632	0.00000346 U	--	--	--	--	--	
233'46'-PentCB-(109)	--	--	--	--	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	--	--	--	--	--	
22'3'45'-PentaCB-(97)	--	--	--	--	0.000306	0.000269	0.000179	0.00000346 U	--	--	--	--	--	
22'345'-PentaCB-(86)	--	--	--	--	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	--	--	--	--	--	
PentaCB-(87)+(117)+(125)	--	--	--	--	0.000443	0.000344	0.000257	0.0000293	--	--	--	--	--	
PentaCB-(111)+(115)	--	--	--	--	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	--	--	--	--	--	
PentaCB-(85)+(116)	--	--	--	--	0.000174	0.00000346 U	0.000109	0.00000346 U	--	--	--	--	--	
233'4'6'-PentaCB-(110)	--	--	--	--	0.00299	0.00224	0.00169	0.000176	--	--	--	--	--	
2'3455'-PentaCB-(124)	--	--	--	--	0.00000346 U	0.00000346 U	0.00000346 U	0.00000346 U	--	--	--	--	--	
PentaCB-(107)+(108)	--	--	--	--	0.000236	0.000134	0.000116	0.00000346 U	--	--	--	--	--	
PentaCB-(106)+(118)	--	--	--	--	0.00123	0.000897	0.000708	0.0000581	--	--	--	--	--	
22'33'66'-HexaCB-(136)	--	--	--	--	0.00095	0.000646	0.000792	0.0000504	--	--	--	--	--	
22'355'6'-HexaCB-(151)	--	--	--	--	0.00129	0.000863	0.0012	0.000093	--	--	--	--	--	
22'33'56'-HexaCB-(135)	--	--	--	--	0.000707	0.000634	0.000789	0.0000596	--	--	--	--	--	
22'34'56'-HexaCB-(147)	--	--	--	--	0.00000486 U	0.00000486 U	0.0000677	0.00000486 U	--	--	--	--	--	
HexaCB-(139)+(149)	--	--	--	--	0.00469	0.0033	0.00373	0.000238	--	--	--	--	--	
22'344'6'-HexaCB-(140)	--	--	--	--	0.00000486 U	0.00000486 U	0.000113	0.00000486 U	--	--	--	--	--	
HexaCB-(131)+(142)	--	--	--	--	0.000459	0.000226	0.000217	0.00000519 U	--	--	--	--	--	
HexaCB-(132)+(146)	--	--	--	--	0.0031	0.00187	0.00166	0.0000999	--	--	--	--	--	
HexaCB-(161)+(165)	--	--	--	--	0.00184	0.00112	0.00104	0.0000694	--	--	--	--	--	
22'44'55'-HexaCB-(153)	--	--	--	--	0.0107	0.00682	0.0054	0.000298	--	--	--	--	--	
23'44'5'6'-HexaCB-(168)	--	--	--	--	0.00000519 U	0.00000519 U	0.0000551	0.00000519 U	--	--	--	--	--	
HexaCB-(138)+(163)+(164)	--	--	--	--	0.00691	0.00402	0.00331	0.000191	--	--	--	--	--	
HexaCB-(158)+(160)	--	--	--	--	0.000355	0.000221	0.000263	0.00000519 U	--	--	--	--	--	
22'33'45'-HexaCB-(129)	--	--	--	--	0.00000519 U	0.00000519 U	0.0000499	0.00000519 U	--	--	--	--	--	
2344'56'-HexaCB-(166)	--	--	--	--	0.00000519 U	0.00000519 U	0.00000519 U	0.00000519 U	--	--	--	--	--	
HexaCB-(138)+(162)	--	--	--	--	0.00000519 U	0.00000519 U	0.00000519 U	0.00000519 U	--	--	--	--	--	
233'44'5'-HexaCB-(156)	--	--	--	--	0.00000413 U	0.00000413 U	0.000181	0.00000413 U	--	--	--	--	--	
233'44'5'-HexaCB-(157)	--	--	--	--	0.00000607 U	0.00000607 U	0.00000607 U	0.00000607 U	--	--	--	--	--	
HeptaCB-(182)+(187)	--	--	--	--	0.00223	0.00143	0.00189	0.000125	--	--	--	--	--	
22'33'44'6'-HeptaCB-(171)	--	--	--	--	0.000576	0.000372	0.000328	0.00000369 U	--	--	--	--	--	
22'33'456'-HeptaCB-(1173)	--	--	--	--	0.00000369 U	0.00000369 U	0.00000369 U	0.00000369 U	--	--	--	--	--	
22'344'55'-HeptaCB-(180)	--	--	--	--	0.00632	0.00371	0.00366	0.000169	--	--	--	--	--	
233'4'55'6'-HeptaCB-(193)	--	--	--	--	0.000341	0.000393	0.000325	0.0000246	--	--	--	--	--	
22'33'455'6'-OctaCB-(198)	--	--	--	--	0.00000431 U	0.00000431 U	0.00000431 U	0.00000431 U	--	--	--	--	--	
22'33'455'6'-OctaCB-(199)	--	--	--	--	0.000655	0.000498	0.000497	0.00000431 U	--	--	--	--	--	
OctaCB-(196)+(203)	--	--	--	--	0.000829	0.000507	0.000619	0.00000431 U	--	--	--	--	--	

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5			MW-6				MW-8			
			6/3/2016	9/15/2016	12/19/2016	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
Total PCB Congeners	0.014	--	0.000396	0.0000983	0.0000758	0.000111	0.00000464	0.0000176	0.0000405	0.000253	0.000041 U	0.0000431	0.000036 U
2,3-DiCB-(5)	--	--	0.0001 U	0.000062 U	0.00001 U	0.096 U	0.000074 U	0.000053 U	0.00001 U	0.000097 U	0.000014 U	0.000053 U	0.000021 U
2,3'-DiCB-(6)	--	--	0.00009 U	0.000056 U	0.0000075 U	0.096 U	0.000065 U	0.000047 U	0.0000074 U	0.000097 U	0.000014 U	0.000048 U	0.000015 U
2,4-DiCB-(7)	--	--	0.0001 U	0.000063 U	0.0000086 U	0.096 U	0.000073 U	0.000054 U	0.0000085 U	0.000097 U	0.000015 U	0.000054 U	0.000018 U
2,4'-DiCB-(8)	--	--	0.000088 U	0.000059 U	0.0000065 U	0.096 U	0.000064 U	0.00005 U	0.0000064 U	0.000097 U	0.000014 U	0.000051 U	0.000013 U
2,5-DiCB-(9)	--	--	0.000089 U	0.000058 U	0.0000073 U	0.096 U	0.000064 U	0.000049 U	0.0000072 U	0.000097 U	0.000013 U	0.00005 U	0.000015 U
2,6-DiCB-(10)	--	--	0.000058 U	0.000079 U	0.000017 U	0.096 U	0.000085 U	0.000073 U	0.000012 U	0.000097 U	0.000028 U	0.00012 U	0.000014 U
22'33'44'55'6'-NonaCB-(206)	--	--	0.000043 U	0.0000051 U	0.000016 U	0.096 U	0.000017 U	0.0000093 U	0.000011 U	0.000097 U	0.000015 U	0.000008 U	0.000017 U
22'33'44'55'-OctaCB-(194)	--	--	0.000023	0.0000056 U	0.000013 U	0.096 U	0.00001 U	0.000003 U	0.000013 U	0.000097 U	0.000007 U	0.0000026 U	0.000008 U
22'33'44'56'6'-NonaCB-(207)	--	--	0.00003 U	0.000004 U	0.000013 U	0.096 U	0.000012 U	0.0000073 U	0.0000086 U	0.000097 U	0.000011 U	0.0000063 U	0.000014 U
22'33'44'56'-OctaCB-(195)	--	--	0.00002 U	0.0000059 U	0.000014 U	0.096 U	0.000012 U	0.0000031 U	0.000015 U	0.000097 U	0.000008 U	0.0000027 U	0.0000088 U
22'33'44'56'-OctaCB-(196)	--	--	0.000035 U	0.0000045 U	0.0000067 U	0.096 U	0.000018 U	0.0000035 U	0.0000078 U	0.000097 U	0.000012 U	0.0000063 U	0.00001 U
22'33'44'5'-HeptaCB-(170)	--	--	0.000037	0.0000066 U	0.0000088 U	0.096 U	0.000011 U	0.0000032 U	0.000014 U	0.000097 U	0.0000079 U	0.0000085 U	0.0000058 U
22'33'44'66'-OctaCB-(197)	--	--	0.000024 U	0.0000035 U	0.0000053 U	0.096 U	0.000012 U	0.0000028 U	0.0000062 U	0.000097 U	0.0000089 U	0.000005 U	0.0000082 U
22'33'455'66'-NonaCB-(208)	--	--	0.000036 U	0.0000049 U	0.000016 U	0.096 U	0.000014 U	0.0000089 U	0.000011 U	0.000097 U	0.000012 U	0.0000077 U	0.000017 U
22'33'455'-HeptaCB-(172)	--	--	0.000023 U	0.0000076 U	0.000012 U	0.096 U	0.000015 U	0.0000037 U	0.000018 U	0.000097 U	0.000012 U	0.0000097 U	0.0000076 U
22'33'4566'-OctaCB-(200)	--	--	0.000021 U	0.0000033 U	0.0000053 U	0.096 U	0.000011 U	0.0000026 U	0.0000061 U	0.000097 U	0.000007 U	0.0000047 U	0.000008 U
22'33'45'66'-OctaCB-(201)	--	--	0.000021 U	0.0000032 U	0.0000051 U	0.096 U	0.000011 U	0.0000025 U	0.0000058 U	0.000097 U	0.0000079 U	0.0000045 U	0.0000077 U
22'33'456'-HeptaCB-(174)	--	--	0.000024	0.0000073 U	0.000011 U	0.096 U	0.000014 U	0.0000036 U	0.000018 U	0.000097 U	0.000012 U	0.0000093 U	0.0000074 U
22'33'45'6'-HeptaCB-(175)	--	--	0.000034 U	0.0000066 U	0.000017 U	0.096 U	0.000012 U	0.0000023 U	0.000013 U	0.000097 U	0.000012 U	0.0000024 U	0.000013 U
22'33'45'6'-HeptaCB-(177)	--	--	0.000023 U	0.0000075 U	0.000012 U	0.096 U	0.000015 U	0.0000037 U	0.000019 U	0.000097 U	0.000013 U	0.0000096 U	0.0000078 U
22'33'45'-HexaCB-(130)	--	--	0.000033 U	0.000007 U	0.00002 U	0.096 U	0.000014 U	0.0000093 U	0.0000089 U	0.000097 U	0.000022 U	0.0000058 U	0.000015 U
22'33'466'-HeptaCB-(176)	--	--	0.000023 U	0.000005 U	0.000013 U	0.096 U	0.0000078 U	0.0000017 U	0.00001 U	0.000097 U	0.000008 U	0.0000018 U	0.0000097 U
22'33'46'-HexaCB-(131)	--	--	0.000038 U	0.0000076 U	0.000021 U	0.096 U	0.000017 U	0.00001 U	0.0000096 U	0.000097 U	0.000024 U	0.0000063 U	0.000017 U
22'33'46'-HexaCB-(132)	--	--	0.000038 U	0.0000076 U	0.000022 U	0.096 U	0.000016 U	0.00001 U	0.0000098 U	0.000097 U	0.000024 U	0.0000063 U	0.000017 U
22'33'4'-PentaCB-(82)	--	--	0.000017 U	0.0000044 U	0.000015 U	0.096 U	0.0000061 U	0.0000057 U	0.000022 U	0.000097 U	0.000019 U	0.0000052 U	0.00002 U
22'33'55'66'-OctaCB-(202)	--	--	0.000021 U	0.0000038 U	0.0000051 U	0.096 U	0.000011 U	0.000003 U	0.0000059 U	0.000097 U	0.0000076 U	0.0000054 U	0.0000078 U
22'33'55'6'-HeptaCB-(178)	--	--	0.000036 U	0.000007 U	0.000018 U	0.096 U	0.000012 U	0.0000024 U	0.000014 U	0.000097 U	0.000013 U	0.0000025 U	0.000013 U
22'33'55'-HexaCB-(133)	--	--	0.00003 U	0.0000065 U	0.000018 U	0.096 U	0.000013 U	0.0000086 U	0.0000082 U	0.000097 U	0.00002 U	0.0000054 U	0.000014 U
22'33'566'-HeptaCB-(179)	--	--	0.000023 U	0.0000049 U	0.000013 U	0.096 U	0.000008 U	0.0000017 U	0.00001 U	0.000097 U	0.0000077 U	0.0000018 U	0.0000096 U
22'33'66'-HexaCB-(136)	--	--	0.000053 U	0.0000038 U	0.000011 U	0.096 U	0.0000099 U	0.0000012 U	0.0000075 U	0.000097 U	0.000026 U	0.0000026 U	0.000011 U
22'33'6'-PentaCB-(84)	--	--	0.000018 U	0.0000045 U	0.000016 U	0.096 U	0.0000066 U	0.0000059 U	0.000023 U	0.000097 U	0.00002 U	0.0000054 U	0.000021 U
22'344'55'6'-OctaCB-(203)	--	--	0.000038 U	0.0000047 U	0.0000071 U	0.096 U	0.000019 U	0.0000037 U	0.0000082 U	0.000097 U	0.000012 U	0.0000066 U	0.000011 U
22'344'566'-OctaCB-(204)	--	--	0.000022 U	0.0000032 U	0.0000051 U	0.096 U	0.000011 U	0.0000025 U	0.0000059 U	0.000097 U	0.0000076 U	0.0000045 U	0.0000078 U
22'344'56'-HeptaCB-(181)	--	--	0.000023 U	0.0000078 U	0.000012 U	0.096 U	0.000016 U	0.0000038 U	0.00002 U	0.000097 U	0.000013 U	0.0000099 U	0.0000082 U
22'344'56'-HeptaCB-(182)	--	--	0.000034 U	0.000007 U	0.000018 U	0.096 U	0.000012 U	0.0000024 U	0.000014 U	0.000097 U	0.000012 U	0.0000025 U	0.000013 U
22'344'5'6'-HeptaCB-(183)	--	--	0.000018 U	0.0000062 U	0.000009 U	0.096 U	0.000012 U	0.000003 U	0.000014 U	0.000097 U	0.0000093 U	0.0000079 U	0.000006 U
22'344'5'-HexaCB-(137)	--	--	0.000033 U	0.0000075 U	0.000023 U	0.096 U	0.000014 U	0.00001 U	0.00001 U	0.000097 U	0.000023 U	0.0000062 U	0.000018 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5			MW-6				MW-8			
			6/3/2016	9/15/2016	12/19/2016	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'344'66'-HeptaCB-(184)	--	--	0.000024 U	0.000053 U	0.000014 U	0.096 U	0.000082 U	0.0000018 U	0.000011 U	0.000097 U	0.000085 U	0.0000019 U	0.00001 U
22'3455'6-HeptaCB-(185)	--	--	0.000025 U	0.000085 U	0.000016 U	0.096 U	0.000017 U	0.0000041 U	0.000026 U	0.000097 U	0.000016 U	0.000011 U	0.000011 U
22'34'55'6-HeptaCB-(187)	--	--	0.000035 U	0.000071 U	0.000019 U	0.096 U	0.000012 U	0.0000024 U	0.000014 U	0.000097 U	0.000012 U	0.0000026 U	0.000014 U
22'3455'-HexaCB-(141)	--	--	0.00003 U	0.000068 U	0.000018 U	0.096 U	0.000013 U	0.000009 U	0.000082 U	0.000097 U	0.00002 U	0.0000056 U	0.000014 U
22'34'55'-HexaCB-(146)	--	--	0.000028 U	0.000057 U	0.000016 U	0.096 U	0.000012 U	0.0000076 U	0.0000074 U	0.000097 U	0.000017 U	0.0000048 U	0.000013 U
22'34566'-HeptaCB-(186)	--	--	0.000028 U	0.000058 U	0.000015 U	0.096 U	0.0000094 U	0.000002 U	0.000012 U	0.000097 U	0.0000093 U	0.0000021 U	0.000011 U
22'34'566'-HeptaCB-(188)	--	--	0.000021 U	0.000066 U	0.000011 U	0.096 U	0.0000072 U	0.0000022 U	0.0000088 U	0.000097 U	0.0000066 U	0.0000024 U	0.000083 U
22'3456-HexaCB-(142)	--	--	0.000033 U	0.000068 U	0.00002 U	0.096 U	0.000014 U	0.0000091 U	0.000009 U	0.000097 U	0.000021 U	0.0000057 U	0.000016 U
22'345'6-HexaCB-(144)	--	--	0.000075 U	0.000005 U	0.000015 U	0.096 U	0.000014 U	0.0000015 U	0.00001 U	0.000097 U	0.000038 U	0.0000035 U	0.000015 U
22'34'56'-HexaCB-(148)	--	--	0.000075 U	0.000005 U	0.000015 U	0.096 U	0.000014 U	0.0000015 U	0.00001 U	0.000097 U	0.000039 U	0.0000035 U	0.000015 U
22'3466'-HexaCB-(145)	--	--	0.000062 U	0.000043 U	0.000013 U	0.096 U	0.000012 U	0.0000013 U	0.0000084 U	0.000097 U	0.00003 U	0.000003 U	0.000013 U
22'34'66'-HexaCB-(150)	--	--	0.000061 U	0.000042 U	0.000013 U	0.096 U	0.000011 U	0.0000013 U	0.0000084 U	0.000097 U	0.000029 U	0.0000029 U	0.000013 U
22'346'-PentaCB-(89)	--	--	0.000016 U	0.000004 U	0.000014 U	0.096 U	0.0000058 U	0.0000053 U	0.00002 U	0.000097 U	0.000018 U	0.0000048 U	0.000019 U
22'34'-TetraCB-(42)	--	--	0.000021 U	0.000082 U	0.000018 U	0.096 U	0.000023 U	0.0000048 U	0.000013 U	0.000097 U	0.000027 U	0.000008 U	0.000019 U
22'355'-PentaCB-(92)	--	--	0.000015 U	0.0000039 U	0.000013 U	0.096 U	0.0000053 U	0.0000051 U	0.000019 U	0.000097 U	0.000016 U	0.0000046 U	0.000018 U
22'3566'-HexaCB-(152)	--	--	0.000051 U	0.0000037 U	0.000011 U	0.096 U	0.0000095 U	0.0000011 U	0.0000073 U	0.000097 U	0.000026 U	0.0000026 U	0.000011 U
22'356'-PentaCB-(94)	--	--	0.000018 U	0.000045 U	0.000016 U	0.096 U	0.0000066 U	0.0000059 U	0.000023 U	0.000097 U	0.00002 U	0.0000054 U	0.000021 U
22'35'6-PentaCB-(95)	--	--	0.000014 U	0.000049 U	0.000013 U	0.096 U	0.0000051 U	0.0000049 U	0.000019 U	0.000097 U	0.000015 U	0.0000044 U	0.000017 U
22'35-TetraCB-(43)	--	--	0.000023 U	0.000011 U	0.000021 U	0.096 U	0.000025 U	0.0000064 U	0.000015 U	0.000097 U	0.000034 U	0.000011 U	0.000022 U
22'366'-PentaCB-(96)	--	--	0.000009 U	0.0000029 U	0.00001 U	0.096 U	0.0000068 U	0.0000082 U	0.0000092 U	0.000097 U	0.000012 U	0.0000012 U	0.000011 U
22'36'-TetraCB-(46)	--	--	0.000021 U	0.000083 U	0.000018 U	0.096 U	0.000024 U	0.0000049 U	0.000014 U	0.000097 U	0.000027 U	0.0000081 U	0.000019 U
22'3-TriCB-(16)	--	--	0.0001 U	0.000014 U	0.000023 U	0.096 U	0.000098 U	0.0000094 U	0.000023 U	0.000097 U	0.000037 U	0.000021 U	0.000022 U
22'44'56'-HexaCB-(154)	--	--	0.000066 U	0.000045 U	0.000014 U	0.096 U	0.000012 U	0.0000014 U	0.000009 U	0.000097 U	0.000033 U	0.0000031 U	0.000014 U
22'44'66'-HexaCB-(155)	--	--	0.000032 U	0.000046 U	0.000063 U	0.096 U	0.000006 U	0.0000014 U	0.0000041 U	0.000097 U	0.000014 U	0.0000032 U	0.000063 U
22'45'6-PentaCB-(103)	--	--	0.000013 U	0.0000034 U	0.000012 U	0.096 U	0.0000046 U	0.0000044 U	0.000018 U	0.000097 U	0.000014 U	0.000004 U	0.000016 U
22'45-TetraCB-(48)	--	--	0.000018 U	0.0000077 U	0.000017 U	0.096 U	0.00002 U	0.0000045 U	0.000013 U	0.000097 U	0.000023 U	0.0000075 U	0.000018 U
22'466'-PentaCB-(104)	--	--	0.000046 U	0.0000032 U	0.000059 U	0.096 U	0.0000035 U	0.0000093 U	0.0000053 U	0.000097 U	0.0000058 U	0.0000014 U	0.000065 U
22'4-TriCB-(17)	--	--	0.000069 U	0.000098 U	0.000022 U	0.096 U	0.000068 U	0.0000065 U	0.000022 U	0.000097 U	0.000022 U	0.000015 U	0.000022 U
22'55'-TetraCB-(52)	--	--	0.000016 U	0.0000064 U	0.000015 U	0.096 U	0.000018 U	0.0000038 U	0.000011 U	0.000015 J	0.00002 J	0.0000063 U	0.000015 U
22'66'-TetraCB-(54)	--	--	0.000017 U	0.0000042 U	0.000068 U	0.096 U	0.000016 U	0.0000058 U	0.000013 U	0.000097 U	0.000011 U	0.0000058 U	0.0000091 U
22'6-TriCB-(19)	--	--	0.000039 U	0.00001 U	0.000016 U	0.096 U	0.000038 U	0.0000068 U	0.000016 U	0.000097 U	0.000012 U	0.000016 U	0.000016 U
22'-DiCB-(4)	--	--	0.000044 U	0.00011 U	0.000017 U	0.096 U	0.000065 U	0.0001 U	0.000012 U	0.000097 U	0.00002 U	0.00017 U	0.000013 U
233'44'55'6-OctaCB-(205)	--	--	0.000015 U	0.0000051 U	0.000014 U	0.096 U	0.0000092 U	0.0000027 U	0.000015 U	0.000097 U	0.0000071 U	0.0000023 U	0.000087 U
233'44'55'-HeptaCB-(189)	--	--	0.000084 U	0.0000036 U	0.000011 U	0.096 U	0.0000077 U	0.0000035 U	0.000011 U	0.000097 U	0.0000051 U	0.0000045 U	0.000073 U
233'44'56-HeptaCB-(190)	--	--	0.000016 U	0.0000058 U	0.000087 U	0.096 U	0.000011 U	0.0000029 U	0.000014 U	0.000097 U	0.0000077 U	0.0000075 U	0.000057 U
233'44'5'6-HeptaCB-(191)	--	--	0.000016 U	0.0000057 U	0.000085 U	0.096 U	0.00001 U	0.0000028 U	0.000014 U	0.000097 U	0.0000072 U	0.0000072 U	0.000056 U
233'44'6-HexaCB-(158)	--	--	0.000019 U	0.0000046 U	0.000013 U	0.096 U	0.000082 U	0.0000062 U	0.0000057 U	0.000097 U	0.000013 U	0.0000039 U	0.000099 U
233'44'-PentaCB-(105)	--	--	0.000077 U	0.0000037 U	0.000014 U	0.096 U	0.0000036 U	0.0000028 U	0.000014 U	0.000097 U	0.0000073 U	0.0000025 U	0.000012 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5			MW-6				MW-8			
			6/3/2016	9/15/2016	12/19/2016	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
233'455'6-HeptaCB-(192)	--	--	0.000019 U	0.0000066 U	0.00001 U	0.096 U	0.000013 U	0.0000032 U	0.000017 U	0.000097 U	0.0000092 U	0.0000085 U	0.0000068 U
233'455'-HexaCB-(159)	--	--	0.000014 U	0.0000057 U	0.0000033 U	0.096 U	0.0000047 U	0.0000014 U	0.0000045 U	0.000097 U	0.0000054 U	0.0000021 U	0.0000069 U
233'4'55'-HexaCB-(162)	--	--	0.000015 U	0.0000064 U	0.0000035 U	0.096 U	0.0000005 U	0.0000016 U	0.0000048 U	0.000097 U	0.0000059 U	0.0000023 U	0.0000074 U
233'456-HexaCB-(160)	--	--	0.000025 U	0.0000056 U	0.000015 U	0.096 U	0.000011 U	0.0000074 U	0.000007 U	0.000097 U	0.000017 U	0.0000046 U	0.000012 U
233'45'6-HexaCB-(161)	--	--	0.00002 U	0.0000049 U	0.000013 U	0.096 U	0.0000085 U	0.0000065 U	0.0000059 U	0.000097 U	0.000013 U	0.0000041 U	0.00001 U
233'4'5'6-HexaCB-(164)	--	--	0.000021 U	0.0000048 U	0.000012 U	0.096 U	0.0000091 U	0.0000064 U	0.0000055 U	0.000097 U	0.000013 U	0.000004 U	0.0000096 U
233'45-PentaCB-(106)	--	--	0.0000057 U	0.0000035 U	0.0000099 U	0.096 U	0.0000027 U	0.0000026 U	0.00001 U	0.000097 U	0.0000056 U	0.0000023 U	0.0000082 U
233'4'5-PentaCB-(107)	--	--	0.0000054 U	0.0000031 U	0.0000098 U	0.096 U	0.0000026 U	0.0000023 U	0.0000099 U	0.000097 U	0.0000055 U	0.000002 U	0.0000081 U
233'4'5'-PentaCB-(122)	--	--	0.0000062 U	0.0000035 U	0.000011 U	0.096 U	0.0000029 U	0.0000027 U	0.000011 U	0.000097 U	0.0000059 U	0.0000023 U	0.0000089 U
233'4'-Tetra CB(56)	--	--	0.000013 U	0.0000064 U	0.0000091 U	0.096 U	0.000012 U	0.0000059 U	0.000014 U	0.000097 U	0.0000087 U	0.0000046 U	0.00002 U
233'4-TetraCB-(55)	--	--	0.000014 U	0.0000066 U	0.000009 U	0.096 U	0.000013 U	0.0000062 U	0.000014 U	0.000097 U	0.0000087 U	0.0000048 U	0.00002 U
233'55'6-HexaCB-(165)	--	--	0.000025 U	0.0000057 U	0.000015 U	0.096 U	0.000011 U	0.0000076 U	0.0000069 U	0.000097 U	0.000016 U	0.0000048 U	0.000012 U
233'55'-PentaCB-(111)	--	--	0.000011 U	0.0000032 U	0.000011 U	0.096 U	0.0000039 U	0.0000041 U	0.000015 U	0.000097 U	0.000012 U	0.0000038 U	0.000014 U
233'56-PentaCB-(112)	--	--	0.00001 U	0.0000031 U	0.00001 U	0.096 U	0.0000036 U	0.000004 U	0.000015 U	0.000097 U	0.000011 U	0.0000037 U	0.000014 U
233'5-TetraCB-(57)	--	--	0.000012 U	0.0000057 U	0.0000081 U	0.096 U	0.000011 U	0.0000053 U	0.000013 U	0.000097 U	0.0000076 U	0.0000041 U	0.000018 U
233'5'-TetraCB-(58)	--	--	0.000013 U	0.0000063 U	0.0000092 U	0.096 U	0.000012 U	0.0000059 U	0.000014 U	0.000097 U	0.0000089 U	0.0000045 U	0.00002 U
23'44'55'-HexaCB-(167)	--	--	0.000019 U	0.0000065 U	0.0000046 U	0.096 U	0.0000064 U	0.0000016 U	0.0000063 U	0.000097 U	0.0000069 U	0.0000024 U	0.0000098 U
2344'5-PentaCB-(114)	--	--	0.0000074 U	0.0000036 U	0.000013 U	0.096 U	0.0000035 U	0.0000027 U	0.000014 U	0.000097 U	0.0000071 U	0.0000024 U	0.000011 U
23'44'5-PentaCB-(118)	--	--	0.000014 U	0.0000112	0.000014 U	0.096 U	0.0000046	0.0000028 U	0.000014 U	0.000097 U	0.0000071 U	0.0000025 U	0.000011 U
23'44'5'-PentaCB-(123)	--	--	0.0000084 U	0.0000041 U	0.000015 U	0.096 U	0.000004 U	0.0000031 U	0.000015 U	0.000097 U	0.000008 U	0.0000027 U	0.000013 U
2344'-TetraCB -(60)	--	--	0.000013 U	0.0000066 U	0.000009 U	0.096 U	0.000012 U	0.0000061 U	0.000014 U	0.000097 U	0.0000087 U	0.0000047 U	0.00002 U
23'44'-TetraCB-(66)	--	--	0.000011 U	0.0000053 U	0.0000078 U	0.096 U	0.00001 U	0.0000049 U	0.000012 U	0.000097 U	0.0000072 U	0.0000038 U	0.000018 U
23'455'-PentaCB-(120)	--	--	0.0000092 U	0.0000028 U	0.000009 U	0.096 U	0.0000033 U	0.0000036 U	0.000013 U	0.000097 U	0.00001 U	0.0000033 U	0.000012 U
23'45'6-PentaCB-(121)	--	--	0.000011 U	0.0000031 U	0.000011 U	0.096 U	0.000004 U	0.0000041 U	0.000016 U	0.000097 U	0.000012 U	0.0000037 U	0.000014 U
234'5-TetraCB-(63)	--	--	0.000011 U	0.0000054 U	0.0000076 U	0.096 U	0.00001 U	0.000005 U	0.000012 U	0.000097 U	0.0000072 U	0.0000039 U	0.000017 U
23'45-TetraCB-(67)	--	--	0.000011 U	0.0000053 U	0.0000074 U	0.096 U	0.00001 U	0.0000049 U	0.000012 U	0.000097 U	0.0000069 U	0.0000038 U	0.000017 U
23'45'-TetraCB-(68)	--	--	0.000012 U	0.0000057 U	0.0000082 U	0.096 U	0.000011 U	0.0000053 U	0.000013 U	0.0000192 J	0.0000077 J	0.0000041 U	0.000018 U
234'6-TetraCB-(64)	--	--	0.000013 U	0.0000058 U	0.000012 U	0.096 U	0.000014 U	0.0000034 U	0.0000092 U	0.000097 U	0.000016 U	0.0000056 U	0.000013 U
234'-TriCB-(22)	--	--	0.00001 J	0.0000038 U	0.0000081 U	0.096 U	0.000011 U	0.0000065 U	0.000012 U	0.0000099 J	0.000013 U	0.0000036 U	0.000014 U
23'4-TriCB-(25)	--	--	0.000008 U	0.0000032 U	0.0000071 U	0.096 U	0.0000084 U	0.0000055 U	0.00001 U	0.000097 U	0.00001 U	0.000003 U	0.000012 U
23'55'-TetraCB-(72)	--	--	0.000011 U	0.0000053 U	0.0000076 U	0.096 U	0.00001 U	0.0000049 U	0.000012 U	0.000097 U	0.0000072 U	0.0000038 U	0.000017 U
23'5'6-TetraCB-(73)	--	--	0.000013 U	0.0000054 U	0.000012 U	0.096 U	0.000014 U	0.0000032 U	0.000009 U	0.000097 U	0.000016 U	0.0000053 U	0.000013 U
235-TriCB-(23)	--	--	0.00001 U	0.0000038 U	0.0000079 U	0.096 U	0.000011 U	0.0000065 U	0.000012 U	0.000097 U	0.000013 U	0.0000036 U	0.000014 U
23'5'-TriCB-(34)	--	--	0.0000091 U	0.0000033 U	0.0000074 U	0.096 U	0.0000095 U	0.0000057 U	0.000011 U	0.000097 U	0.000011 U	0.0000031 U	0.000013 U
236-TriCB-(24)	--	--	0.000051 U	0.000008 U	0.000023 U	0.096 U	0.00005 U	0.0000053 U	0.000023 U	0.000097 U	0.000014 U	0.000012 U	0.000023 U
23'6-TriCB-(27)	--	--	0.000042 U	0.0000067 U	0.000014 U	0.096 U	0.000042 U	0.0000044 U	0.000014 U	0.000097 U	0.000015 U	0.00001 U	0.000014 U
24'5-TriCB-(31)	--	--	0.0000091	0.0000048 U	0.0000065 U	0.0084 J	0.0000085 U	0.0000054 U	0.0000096 U	0.0000199 J	0.00001 J	0.0000041	0.000011 U
24'6-TriCB-(32)	--	--	0.000039 U	0.0000065 U	0.000014 U	0.096 U	0.000039 U	0.0000043 U	0.000014 U	0.000097 U	0.000013 U	0.0000098 U	0.000014 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5			MW-6				MW-8			
			6/3/2016	9/15/2016	12/19/2016	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
2-MonoCB-(1)	--	--	0.000005 U	0.000005 U	0.000005 U	0.0079 J	0.0000073 U	0.0000046 U	0.0000067 U	0.000016 J	0.0000069 U	0.0000093 U	0.000012 U
3,3'-DiCB-(11)	--	--	0.00009 U	0.000058 U	0.0000078 U	0.096 U	0.000066 U	0.000049 U	0.0000077 U	0.000097 U	0.000013 U	0.00005 U	0.000016 U
3,5-DiCB-(14)	--	--	0.000089 U	0.000057 U	0.0000074 U	0.096 U	0.000064 U	0.000048 U	0.0000073 U	0.000097 U	0.000013 U	0.000049 U	0.000015 U
33'44'55'-HexaCB-(169)	--	--	0.000019 U	0.0000065 U	0.0000047 U	0.096 U	0.0000063 U	0.0000016 U	0.0000063 U	0.000097 U	0.0000068 U	0.0000023 U	0.0000098 U
33'44'5-PentaCB-(126)	--	--	0.0000078 U	0.0000038 U	0.000014 U	0.096 U	0.0000037 U	0.0000028 U	0.000014 U	0.000097 U	0.0000074 U	0.0000025 U	0.000011 U
33'44'-TetraCB-(77)	--	--	0.000017 U	0.0000063 U	0.000011 U	0.096 U	0.000016 U	0.0000058 U	0.000018 U	0.000097 U	0.000011 U	0.0000045 U	0.000025 U
33'455'-PentaCB-(127)	--	--	0.0000056 U	0.0000032 U	0.0000093 U	0.096 U	0.0000027 U	0.0000024 U	0.0000094 U	0.000097 U	0.0000053 U	0.0000021 U	0.0000078 U
33'45-TetraCB-(78)	--	--	0.000011 U	0.0000056 U	0.0000075 U	0.096 U	0.00001 U	0.0000052 U	0.000012 U	0.000097 U	0.0000075 U	0.000004 U	0.000017 U
33'45'-TetraCB(79)	--	--	0.0000096 U	0.000005 U	0.0000067 U	0.096 U	0.0000089 U	0.0000046 U	0.000011 U	0.000097 U	0.0000064 U	0.0000036 U	0.000015 U
33'4-TriCB-(35)	--	--	0.0000085 U	0.0000034 U	0.0000068 U	0.096 U	0.0000089 U	0.0000058 U	0.00001 U	0.000097 U	0.00001 U	0.0000032 U	0.000012 U
33'55'-TetraCB-(80)	--	--	0.00001 U	0.0000051 U	0.0000071 U	0.096 U	0.0000098 U	0.0000047 U	0.000011 U	0.000097 U	0.0000069 U	0.0000037 U	0.000016 U
33'5-TriCB-(36)	--	--	0.0000072 U	0.0000029 U	0.000006 U	0.096 U	0.0000076 U	0.000005 U	0.0000089 U	0.000097 U	0.0000092 U	0.0000028 U	0.00001 U
344'5-TetraCB-(81)	--	--	0.000018 U	0.0000064 U	0.000012 U	0.096 U	0.000016 U	0.0000059 U	0.000018 U	0.000097 U	0.000011 U	0.0000046 U	0.000026 U
344'-TriCB-(37)	--	--	0.000016 U	0.0000046 U	0.000013 U	0.096 U	0.000017 U	0.0000079 U	0.000019 U	0.000097 U	0.00002 U	0.0000043 U	0.000022 U
345-TriCB-(38)	--	--	0.0000084 U	0.0000034 U	0.0000067 U	0.096 U	0.0000088 U	0.0000058 U	0.0000098 U	0.000097 U	0.000011 U	0.0000032 U	0.000012 U
34'5-TriCB-(39)	--	--	0.000009 U	0.0000035 U	0.0000074 U	0.096 U	0.0000094 U	0.000006 U	0.0000011 U	0.000097 U	0.000011 U	0.0000033 U	0.000013 U
3-MonoCB-(2)	--	--	0.0000041 U	0.0000045 U	0.0000042 U	0.096 U	0.0000061 U	0.0000041 U	0.0000056 U	0.000097 U	0.0000057 U	0.0000083 U	0.00001 U
4,4'-DiCB-(15)	--	--	0.00017 U	0.00008 U	0.000013 U	0.096 U	0.000012 U	0.000068 U	0.000013 U	0.000097 U	0.000025 U	0.000068 U	0.000028 U
4-MonoCB-(3)	--	--	0.000005 U	0.000005 U	0.0000049 U	0.096 U	0.0000073 U	0.0000046 U	0.0000066 U	0.000097 U	0.0000069 U	0.0000093 U	0.000012 U
DecaCB-(209)	--	--	0.00007 U	0.0000037 U	0.000012 U	0.096 U	0.000011 U	0.0000035 U	0.000014 U	0.000097 U	0.000012 U	0.0000061 U	0.000013 U
DiCB-(12)+(13)	--	--	0.000098 U	0.000062 U	0.0000084 U	0.19 U	0.000071 U	0.000053 U	0.0000083 U	0.00019 U	0.000015 U	0.000053 U	0.000017 U
HeptaCB-(171)+(173)	--	--	0.000023 U	0.0000075 U	0.000012 U	0.19 U	0.000015 U	0.0000036 U	0.000019 U	0.00019 U	0.000013 U	0.0000095 U	0.0000078 U
HeptaCB-(180)+(193)	--	--	0.000068	0.000006 U	0.0000079 U	0.19 U	0.0000097 U	0.0000029 U	0.000013 U	0.00019 U	0.000007 U	0.0000076 U	0.0000052 U
HexaCB-(128)+(166)	--	--	0.000025 U	0.0000058 U	0.000016 U	0.19 U	0.000011 U	0.0000077 U	0.0000071 U	0.00019 U	0.000017 U	0.0000048 U	0.000012 U
HexaCB-(129)+(138)+(163)	--	--	0.000082	0.0000205	0.000017 U	0.0098 J	0.000012 J	0.0000084 U	0.0000078 U	0.00029 U	0.000018 U	0.0000053 U	0.000014 U
HexaCB-(134)+(143)	--	--	0.000035 U	0.0000071 U	0.00002 U	0.19 U	0.000015 U	0.0000095 U	0.0000092 U	0.00019 U	0.000022 U	0.0000059 U	0.000016 U
HexaCB-(135)+(151)	--	--	0.000083 U	0.0000054 U	0.000016 U	0.19 U	0.000015 U	0.0000017 U	0.000011 U	0.00019 U	0.000041 U	0.0000038 U	0.000016 U
HexaCB-(139)+(140)	--	--	0.000028 U	0.0000063 U	0.000018 U	0.19 U	0.000012 U	0.0000084 U	0.000008 U	0.00019 U	0.000019 U	0.0000053 U	0.000014 U
HexaCB-(147)+(149)	--	--	0.000052	0.0000109	0.000018 U	0.19 U	0.000012 U	0.0000083 U	0.0000081 U	0.00019 U	0.000018 U	0.0000052 U	0.000014 U
HexaCB-(153)+(168)	--	--	0.000051	0.0000157	0.000014 U	0.19 U	0.0000096 U	0.000007 U	0.0000064 U	0.00019 U	0.000015 U	0.0000044 U	0.000011 U
HexaCB-(156)+(157)	--	--	0.000018 U	0.0000061 U	0.0000043 U	0.19 U	0.000006 U	0.0000015 U	0.0000059 U	0.00019 U	0.0000064 U	0.0000022 U	0.0000092 U
OctaCB-(198)+(199)	--	--	0.000037 U	0.0000048 U	0.0000074 U	0.19 U	0.000019 U	0.0000038 U	0.0000085 U	0.00019 U	0.000012 U	0.0000068 U	0.000011 U
PentaCB-(108)+(124)	--	--	0.000006 U	0.0000035 U	0.000011 U	0.19 U	0.0000028 U	0.0000026 U	0.000011 U	0.00019 U	0.0000058 U	0.0000023 U	0.0000088 U
PentaCB-(110)+(115)	--	--	0.000024	0.000012	0.000011 U	0.19 U	0.0000041 U	0.0000053 U	0.000016 U	0.00019 U	0.000013 U	0.0000048 U	0.000015 U
PentaCB-(83)+(99)	--	--	0.000016 U	0.0000041 U	0.000014 U	0.19 U	0.0000058 U	0.0000053 U	0.00002 U	0.00019 U	0.000017 U	0.0000048 U	0.000018 U
PentaCB-(85)+(116)+(117)	--	--	0.000012 U	0.0000034 U	0.000011 U	0.29 U	0.0000043 U	0.0000044 U	0.000016 U	0.00029 U	0.000012 U	0.000004 U	0.000015 U
PentaCB-(86)(87)(97)(109)(119)(125)	--	--	0.000012 U	0.0000035 U	0.000012 U	0.58 U	0.0000044 U	0.0000046 U	0.000017 U	0.00058 U	0.000013 U	0.0000042 U	0.000016 U
PentaCB-(88)+(91)	--	--	0.000016 U	0.000004 U	0.000014 U	0.19 U	0.0000057 U	0.0000053 U	0.00002 U	0.00019 U	0.000017 U	0.0000048 U	0.000018 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5			MW-6				MW-8			
			6/3/2016	9/15/2016	12/19/2016	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
PentaCB-(90)+(101)+(113)	--	--	0.000016	0.0000117	0.000012 U	0.29 U	0.0000053 U	0.0000046 U	0.000017 U	0.00029 U	0.000014 U	0.0000042 U	0.000016 U
PentaCB-(93)+(98)+(100)+(102)	--	--	0.000016 U	0.0000041 U	0.000014 U	0.38 U	0.0000057 U	0.0000053 U	0.000021 U	0.00039 U	0.000017 U	0.0000048 U	0.000019 U
TetraCB-(40)+(41)+(71)	--	--	0.000017 U	0.0000073 U	0.000021 U	0.29 U	0.000019 U	0.0000043 U	0.000015 U	0.00029 U	0.000021 U	0.0000071 U	0.000021 U
TetraCB-(44)+(47)+(65)	--	--	0.000016 J	0.0000084 U	0.000015	0.0298 J	0.000017 U	0.0000083	0.000011 U	0.000041 J	0.000019 J	0.0000066 U	0.000015 U
TetraCB-(45)+(51)	--	--	0.000018 J	0.000012	0.000061	0.0335 J	0.00002 U	0.0000092	0.00004	0.000059 J	0.000024 J	0.000039 U	0.000036 U
TetraCB-(49)+TetraCB-(69)	--	--	0.000014 U	0.0000062 U	0.000014 U	0.19 U	0.000016 U	0.0000037 U	0.00001 U	0.00019 U	0.000018 U	0.000006 U	0.000014 U
TetraCB-(50)+(53)	--	--	0.000017 U	0.000007 U	0.000016 U	0.19 U	0.000019 U	0.0000041 U	0.000012 U	0.00019 U	0.000022 U	0.0000068 U	0.000016 U
TetraCB-(59)+(62)+(75)	--	--	0.000012 U	0.0000055 U	0.000012 U	0.29 U	0.000013 U	0.0000032 U	0.0000088 U	0.00029 U	0.000015 U	0.0000053 U	0.000012 U
TetraCB-(61)+(70)+(74)+(76)	--	--	0.000017 U	0.000006 U	0.0000086 U	0.0041 J	0.000012 U	0.0000056 U	0.000013 U	0.0000098 J	0.0000081 J	0.0000043 U	0.000019 U
TriCB-(18)+(30)	--	--	0.000053 U	0.0000083 U	0.000018 U	0.19 U	0.000053 U	0.0000055 U	0.000019 U	0.000021 J	0.000018 U	0.000013 U	0.000018 U
TriCB-(20) + (28)	--	--	0.0000108	0.0000043 U	0.0000077 U	0.0107 J	0.0000095 J	0.000006 U	0.000011 U	0.000023 J	0.000011 U	0.0000033 U	0.000013 U
TriCB-(21)+(33)	--	--	0.0000087 U	0.0000042	0.0000071 U	0.0072 J	0.0000091 J	0.000006 U	0.00001 U	0.000019 J	0.000011 U	0.0000033 U	0.000012 U
TriCB-(26)+(29)	--	--	0.0000089 U	0.0000034 U	0.000007 U	0.19 U	0.0000093 U	0.0000057 U	0.00001 U	0.00019 U	0.000011 U	0.0000032 U	0.000012 U
DiCB-(4)+(10)	--	--	--	--	--	--	--	--	--	--	--	--	--
DiCB-(7)+(9)	--	--	--	--	--	--	--	--	--	--	--	--	--
DiCB-(5)+(8)	--	--	--	--	--	--	--	--	--	--	--	--	--
246-TriCB-(30)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'5-TriCB-(18)	--	--	--	--	--	--	--	--	--	--	--	--	--
TriCB-(24)+(27)	--	--	--	--	--	--	--	--	--	--	--	--	--
TriCB-(16)+(32)	--	--	--	--	--	--	--	--	--	--	--	--	--
245-TriCB-(29)	--	--	--	--	--	--	--	--	--	--	--	--	--
23'5-TriCB-(26)	--	--	--	--	--	--	--	--	--	--	--	--	--
244'-TriCB-(28)	--	--	--	--	--	--	--	--	--	--	--	--	--
TriCB-(20)+(21)+(33)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'46-TetraCB-(50)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'56'-TetraCB-(53)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'46'-TetraCB-(51)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'36-TetraCB-(45)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(52)+(69)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(43)+(49)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'44'-TetraCB-(47)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(48)+(75)	--	--	--	--	--	--	--	--	--	--	--	--	--
2356-TetraCB-(65)	--	--	--	--	--	--	--	--	--	--	--	--	--
2346-TetraCB-(62)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'35'-TetraCB-(44)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(42)+(59)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(41)+(64)+(71)+(72)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'-TetraCB-(40)	--	--	--	--	--	--	--	--	--	--	--	--	--
244'5-TetraCB-(74)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(61)+(70)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(66)+(76)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(56)+(60)	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5			MW-6				MW-8			
			6/3/2016	9/15/2016	12/19/2016	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L													
22'44'6-PentaCB-(100)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(93)+(95)+(98)+(102)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(84)+(92)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(90)+(101)	--	--	--	--	--	--	--	--	--	--	--	--	--
233'5'6-PentaCB-(113)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'44'5-PentaCB-(99)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'5-PentaCB-(83)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(112)+(119)	--	--	--	--	--	--	--	--	--	--	--	--	--
233'46-PentCB-(109)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'3'45-PentaCB-(97)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'345-PentaCB-(86)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(87)+(117)+(125)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(111)+(115)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(85)+(116)	--	--	--	--	--	--	--	--	--	--	--	--	--
233'4'6-PentaCB-(110)	--	--	--	--	--	--	--	--	--	--	--	--	--
2'3455'-PentaCB-(124)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(107)+(108)	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(106)+(118)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'66'-HexaCB-(136)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'355'6-HexaCB-(151)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'56'-HexaCB-(135)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'34'56-HexaCB-(147)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(139)+(149)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'344'6'-HexaCB-(140)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(131)+(142)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(132)+(146)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(161)+(165)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'44'55'-HexaCB-(153)	--	--	--	--	--	--	--	--	--	--	--	--	--
23'44'5'6-HexaCB-(168)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(138)+(163)+(164)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(158)+(160)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'45-HexaCB-(129)	--	--	--	--	--	--	--	--	--	--	--	--	--
2344'56-HexaCB-(166)	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(138)+(162)	--	--	--	--	--	--	--	--	--	--	--	--	--
233'44'5-HexaCB-(156)	--	--	--	--	--	--	--	--	--	--	--	--	--
233'44'5'-HexaCB-(157)	--	--	--	--	--	--	--	--	--	--	--	--	--
HeptaCB-(182)+(187)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'44'6-HeptaCB(171)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'456-HeptaCB-(1173)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'344'55'-HeptaCB-(180)	--	--	--	--	--	--	--	--	--	--	--	--	--
233'4'55'6-HeptaCB-(193)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'455'6-OctaCB-(198)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'455'6'-OctaCB-(199)	--	--	--	--	--	--	--	--	--	--	--	--	--
OctaCB-(196)+(203)	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-7				MW-9						
			2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016
			Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate
Concentration in µg/L													
Total PCB Congeners	0.014	--	0.0000823	0.0000671	0.00029 U	0.00009 U	0.0000903	0.00014	0.0000601 U	0.0000601	0.0000324	0.0000215	0.000152
2,3-DiCB-(5)	--	--	0.000097 U	0.000014 U	0.00016 U	0.000012 U	0.000098 U	0.000097 U	0.0000098 U	0.000014 U	0.000032 U	0.000059 U	0.000055 U
2,3'-DiCB-(6)	--	--	0.000097 U	0.000013 U	0.00014 U	0.0000091 U	0.000098 U	0.000097 U	0.0000097 U	0.000014 U	0.000028 U	0.000053 U	0.000053 U
2,4-DiCB-(7)	--	--	0.000097 U	0.000015 U	0.00016 U	0.00001 U	0.000098 U	0.000097 U	0.000011 U	0.000016 U	0.000032 U	0.00006 U	0.00006 U
2,4'-DiCB-(8)	--	--	0.000097 U	0.000014 U	0.00015 U	0.0000078 U	0.000098 U	0.0000167 J	0.00001 U	0.000015 U	0.00003 U	0.000056 U	0.000056 U
2,5-DiCB-(9)	--	--	0.000097 U	0.000013 U	0.00015 U	0.0000088 U	0.000098 U	0.000097 U	0.0000093 U	0.000014 U	0.000029 U	0.000055 U	0.000051 U
2,6-DiCB-(10)	--	--	0.000097 U	0.000025 U	0.0002 U	0.000012 U	0.000098 U	0.000097 U	0.000017 U	0.000023 U	0.00005 U	0.00013 U	0.00011 U
22'33'44'55'6'-NonaCB-(206)	--	--	0.000097 U	0.00002 U	0.0000081 U	0.0000061 U	0.000098 U	0.000097 U	0.000011 U	0.000017 U	0.0000052 U	0.0000057 U	0.000019 U
22'33'44'55'-OctaCB-(194)	--	--	0.000097 U	0.000005 U	0.0000037 U	0.0000094 U	0.000098 U	0.000097 U	0.0000057 U	0.0000076 U	0.0000031 U	0.0000035 U	0.0000051 U
22'33'44'566'-NonaCB-(207)	--	--	0.000097 U	0.000015 U	0.0000064 U	0.000005 U	0.000098 U	0.000097 U	0.000008 U	0.000013 U	0.0000041 U	0.0000045 U	0.000015 U
22'33'44'56'-OctaCB-(195)	--	--	0.000097 U	0.0000056 U	0.0000039 U	0.00001 U	0.000098 U	0.000097 U	0.0000064 U	0.0000086 U	0.0000033 U	0.0000037 U	0.0000057 U
22'33'44'56'-OctaCB-(196)	--	--	0.000097 U	0.0000087 U	0.0000063 U	0.0000082 U	0.000098 U	0.000097 U	0.000012 U	0.0000086 U	0.0000045 U	0.0000039 U	0.000012 U
22'33'44'5'-HeptaCB-(170)	--	--	0.000097 U	0.0000083 U	0.0000034 U	0.000013 U	0.000098 U	0.000097 U	0.0000098 U	0.000013 U	0.0000064 U	0.0000067 U	0.0000074 U
22'33'44'66'-OctaCB-(197)	--	--	0.000097 U	0.0000067 U	0.0000049 U	0.0000065 U	0.000098 U	0.000097 U	0.0000095 U	0.0000067 U	0.0000035 U	0.000003 U	0.00001 U
22'33'455'66'-NonaCB-(208)	--	--	0.000097 U	0.000016 U	0.0000078 U	0.0000061 U	0.000098 U	0.000097 U	0.0000089 U	0.000014 U	0.000005 U	0.0000055 U	0.000018 U
22'33'455'-HeptaCB-(172)	--	--	0.000097 U	0.000012 U	0.0000039 U	0.000017 U	0.000098 U	0.000097 U	0.000014 U	0.000019 U	0.0000074 U	0.0000077 U	0.0000097 U
22'33'4566'-OctaCB-(200)	--	--	0.000097 U	0.0000053 U	0.0000046 U	0.0000064 U	0.000098 U	0.000097 U	0.0000074 U	0.0000052 U	0.0000033 U	0.0000029 U	0.0000085 U
22'33'45'66'-OctaCB-(201)	--	--	0.000097 U	0.0000059 U	0.0000044 U	0.0000061 U	0.000098 U	0.000097 U	0.0000084 U	0.0000059 U	0.0000032 U	0.0000028 U	0.0000089 U
22'33'456'-HeptaCB-(174)	--	--	0.000097 U	0.000012 U	0.0000037 U	0.000016 U	0.000098 U	0.000097 U	0.000014 U	0.00002 U	0.0000071 U	0.0000074 U	0.0000094 U
22'33'45'6'-HeptaCB-(175)	--	--	0.000097 U	0.000012 U	0.0000043 U	0.0000094 U	0.000098 U	0.000097 U	0.0000073 U	0.000027 U	0.0000036 U	0.0000028 U	0.000009 U
22'33'45'6'-HeptaCB-(177)	--	--	0.000097 U	0.000014 U	0.0000039 U	0.000017 U	0.000098 U	0.000097 U	0.0000016 U	0.000022 U	0.0000073 U	0.0000077 U	0.0000096 U
22'33'45'-HexaCB-(130)	--	--	0.000097 U	0.000014 U	0.000014 U	0.000018 U	0.000098 U	0.000097 U	0.000014 U	0.000021 U	0.0000058 U	0.0000049 U	0.000017 U
22'33'466'-HeptaCB-(176)	--	--	0.000097 U	0.0000079 U	0.0000032 U	0.0000073 U	0.000098 U	0.000097 U	0.0000048 U	0.000018 U	0.0000027 U	0.0000021 U	0.000007 U
22'33'46'-HexaCB-(131)	--	--	0.000097 U	0.000016 U	0.000016 U	0.00002 U	0.000098 U	0.000097 U	0.000015 U	0.000023 U	0.0000062 U	0.0000053 U	0.000019 U
22'33'46'-HexaCB-(132)	--	--	0.000097 U	0.000016 U	0.000016 U	0.00002 U	0.000098 U	0.000097 U	0.000015 U	0.000023 U	0.0000062 U	0.0000053 U	0.000019 U
22'33'4'-PentaCB-(82)	--	--	0.000097 U	0.00001 U	0.000011 U	0.000024 U	0.000098 U	0.000097 U	0.000014 U	0.000022 U	0.0000027 U	0.0000038 U	0.0000077 U
22'33'55'66'-OctaCB-(202)	--	--	0.000097 U	0.0000057 U	0.0000053 U	0.0000062 U	0.000098 U	0.000097 U	0.0000081 U	0.0000057 U	0.0000038 U	0.0000033 U	0.0000095 U
22'33'55'6'-HeptaCB-(178)	--	--	0.000097 U	0.000013 U	0.0000045 U	0.00001 U	0.000098 U	0.000097 U	0.0000079 U	0.00003 U	0.0000038 U	0.0000029 U	0.0000096 U
22'33'55'-HexaCB-(133)	--	--	0.000097 U	0.000013 U	0.000013 U	0.000017 U	0.000098 U	0.000097 U	0.000013 U	0.000019 U	0.0000053 U	0.0000045 U	0.000016 U
22'33'566'-HeptaCB-(179)	--	--	0.000097 U	0.0000076 U	0.0000031 U	0.0000072 U	0.000098 U	0.000097 U	0.0000047 U	0.000018 U	0.0000027 U	0.0000021 U	0.0000069 U
22'33'66'-HexaCB-(136)	--	--	0.000097 U	0.0000055 U	0.0000025 U	0.000012 U	0.000098 U	0.000097 U	0.000018 U	0.000022 U	0.0000013 U	0.0000015 U	0.000013 U
22'33'6'-PentaCB-(84)	--	--	0.000097 U	0.000011 U	0.000011 U	0.000024 U	0.000098 U	0.000097 U	0.000015 U	0.000024 U	0.0000028 U	0.0000039 U	0.0000082 U
22'344'55'6'-OctaCB-(203)	--	--	0.000097 U	0.000009 U	0.0000065 U	0.0000086 U	0.000098 U	0.000097 U	0.000013 U	0.0000089 U	0.0000047 U	0.000004 U	0.000013 U
22'344'566'-OctaCB-(204)	--	--	0.000097 U	0.0000057 U	0.0000045 U	0.0000062 U	0.000098 U	0.000097 U	0.0000081 U	0.0000057 U	0.0000032 U	0.0000028 U	0.000009 U
22'344'56'-HeptaCB-(181)	--	--	0.000097 U	0.000014 U	0.000004 U	0.000018 U	0.000098 U	0.000097 U	0.000017 U	0.000022 U	0.0000075 U	0.0000079 U	0.00001 U
22'344'56'-HeptaCB-(182)	--	--	0.000097 U	0.000012 U	0.0000045 U	0.0000097 U	0.000098 U	0.000097 U	0.0000074 U	0.000028 U	0.0000038 U	0.0000029 U	0.0000093 U
22'344'5'6'-HeptaCB-(183)	--	--	0.000097 U	0.0000098 U	0.0000032 U	0.000013 U	0.000098 U	0.000097 U	0.000011 U	0.000016 U	0.000006 U	0.0000063 U	0.0000081 U
22'344'5'-HexaCB-(137)	--	--	0.000097 U	0.000015 U	0.000015 U	0.000021 U	0.000098 U	0.000097 U	0.000015 U	0.000023 U	0.0000061 U	0.0000052 U	0.000019 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-7				MW-9							
			2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	
			Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	
Concentration in µg/L														
22'344'66'-HeptaCB-(184)	--	--	0.000097 U	0.000085 U	0.0000034 U	0.0000077 U	0.000098 U	0.000097 U	0.0000052 U	0.000019 U	0.0000029 U	0.0000022 U	0.0000073 U	
22'3455'6-HeptaCB-(185)	--	--	0.000097 U	0.000017 U	0.0000043 U	0.000023 U	0.000098 U	0.000097 U	0.00002 U	0.000027 U	0.0000082 U	0.0000086 U	0.000011 U	
22'34'55'6-HeptaCB-(187)	--	--	0.000097 U	0.000012 U	0.0000046 U	0.00001 U	0.000098 U	0.000097 U	0.0000075 U	0.000028 U	0.0000039 U	0.000003 U	0.0000096 U	
22'3455'-HexaCB-(141)	--	--	0.000097 U	0.000013 U	0.000014 U	0.000017 U	0.000098 U	0.000097 U	0.000013 U	0.000019 U	0.0000055 U	0.0000047 U	0.000015 U	
22'34'55'-HexaCB-(146)	--	--	0.000097 U	0.000011 U	0.000012 U	0.000015 U	0.000098 U	0.000097 U	0.000011 U	0.000017 U	0.0000047 U	0.000004 U	0.000014 U	
22'34566'-HeptaCB-(186)	--	--	0.000097 U	0.0000092 U	0.0000037 U	0.0000085 U	0.000098 U	0.000097 U	0.0000056 U	0.000021 U	0.0000031 U	0.0000024 U	0.0000081 U	
22'34'566'-HeptaCB-(188)	--	--	0.000097 U	0.0000065 U	0.0000042 U	0.0000063 U	0.000098 U	0.000097 U	0.000004 U	0.000015 U	0.0000036 U	0.0000028 U	0.0000064 U	
22'3456-HexaCB-(142)	--	--	0.000097 U	0.000014 U	0.000014 U	0.000018 U	0.000098 U	0.000097 U	0.000014 U	0.000021 U	0.0000056 U	0.0000047 U	0.000017 U	
22'345'6-HexaCB-(144)	--	--	0.000097 U	0.0000079 U	0.0000033 U	0.000016 U	0.000098 U	0.000097 U	0.000025 U	0.000032 U	0.0000017 U	0.000002 U	0.000017 U	
22'34'56'-HexaCB-(148)	--	--	0.000097 U	0.0000081 U	0.0000033 U	0.000016 U	0.000098 U	0.000097 U	0.000026 U	0.000033 U	0.0000017 U	0.0000019 U	0.000017 U	
22'3466'-HexaCB-(145)	--	--	0.000097 U	0.0000063 U	0.0000029 U	0.000014 U	0.000098 U	0.000097 U	0.00002 U	0.000025 U	0.0000014 U	0.0000017 U	0.000015 U	
22'34'66'-HexaCB-(150)	--	--	0.000097 U	0.0000061 U	0.0000028 U	0.000014 U	0.000098 U	0.000097 U	0.00002 U	0.000025 U	0.0000014 U	0.0000016 U	0.000016 U	
22'346'-PentaCB-(89)	--	--	0.000097 U	0.0000099 U	0.0001 U	0.000022 U	0.000098 U	0.000097 U	0.000013 U	0.000021 U	0.0000025 U	0.0000035 U	0.0000074 U	
22'34'-TetraCB-(42)	--	--	0.000097 U	0.00002 U	0.000014 U	0.000018 U	0.000098 U	0.000097 U	0.000021 U	0.000021 U	0.000009 U	0.0000094 U	0.0000097 U	
22'355'-PentaCB-(92)	--	--	0.000097 U	0.0000092 U	0.0000096 U	0.000021 U	0.000098 U	0.000097 U	0.000012 U	0.00002 U	0.0000024 U	0.0000034 U	0.000007 U	
22'3566'-HexaCB-(152)	--	--	0.000097 U	0.0000054 U	0.0000024 U	0.000012 U	0.000098 U	0.000097 U	0.000017 U	0.000022 U	0.0000012 U	0.0000014 U	0.000012 U	
22'356'-PentaCB-(94)	--	--	0.000097 U	0.000011 U	0.000011 U	0.000025 U	0.000098 U	0.000097 U	0.000015 U	0.000024 U	0.0000028 U	0.000004 U	0.0000084 U	
22'35'6-PentaCB-(95)	--	--	0.000097 U	0.0000085 U	0.0000092 U	0.00002 U	0.000098 U	0.000097 U	0.000011 U	0.000018 U	0.0000023 U	0.0000033 U	0.0000155	
22'35-TetraCB-(43)	--	--	0.000097 U	0.000025 U	0.000018 U	0.000021 U	0.000098 U	0.000097 U	0.000026 U	0.000026 U	0.000012 U	0.000012 U	0.000012 U	
22'366'-PentaCB-(96)	--	--	0.000097 U	0.000012 U	0.0000014 U	0.000012 U	0.000098 U	0.000097 U	0.0000051 U	0.0000044 U	0.000001 U	0.00000064 U	0.00001 U	
22'36'-TetraCB-(46)	--	--	0.000097 U	0.00002 U	0.000014 U	0.000019 U	0.000098 U	0.000097 U	0.000021 U	0.000021 U	0.0000091 U	0.0000095 U	0.0000096 U	
22'3-TriCB-(16)	--	--	0.000097 U	0.000024 U	0.000025 U	0.000025 U	0.000098 U	0.000097 U	0.000025 U	0.00003 U	0.000013 U	0.000019 U	0.000035 U	
22'44'56'-HexaCB-(154)	--	--	0.000097 U	0.000007 U	0.000003 U	0.000015 U	0.000098 U	0.000097 U	0.000022 U	0.000028 U	0.0000015 U	0.0000018 U	0.000016 U	
22'44'66'-HexaCB-(155)	--	--	0.000097 U	0.000003 U	0.000003 U	0.000068 U	0.000098 U	0.000097 U	0.0000096 U	0.000012 U	0.0000015 U	0.0000018 U	0.0000085 U	
22'45'6-PentaCB-(103)	--	--	0.000097 U	0.0000077 U	0.0000083 U	0.000019 U	0.000098 U	0.000097 U	0.00001 U	0.000016 U	0.0000021 U	0.0000029 U	0.0000062 U	
22'45-TetraCB-(48)	--	--	0.000097 U	0.000017 U	0.000013 U	0.000017 U	0.000098 U	0.000097 U	0.000018 U	0.000017 U	0.0000085 U	0.0000088 U	0.0000085 U	
22'466'-PentaCB-(104)	--	--	0.000097 U	0.0000059 U	0.0000016 U	0.000067 U	0.000098 U	0.000097 U	0.0000025 U	0.0000021 U	0.0000012 U	0.00000072 U	0.0000063 U	
22'4-TriCB-(17)	--	--	0.000097 U	0.000014 U	0.000017 U	0.000024 U	0.000098 U	0.000097 U	0.000015 U	0.000017 U	0.0000087 U	0.000013 U	0.000023 U	
22'55'-TetraCB-(52)	--	--	0.000097 U	0.000015 U	0.000011 U	0.000015 U	0.000098 U	0.000097 U	0.000015 U	0.000015 U	0.0000071 U	0.0000074 U	0.00001 U	
22'66'-TetraCB-(54)	--	--	0.000097 U	0.000015 U	0.0000072 U	0.000013 U	0.000098 U	0.000097 U	0.0000095 U	0.0000094 U	0.0000032 U	0.0000069 U	0.00001 U	
22'6-TriCB-(19)	--	--	0.000097 U	0.000008 U	0.000018 U	0.000018 U	0.000098 U	0.000097 U	0.0000081 U	0.0000097 U	0.0000092 U	0.000014 U	0.000017 U	
22'-DiCB-(4)	--	--	0.000097 U	0.000018 U	0.00029 U	0.000012 U	0.000098 U	0.000097 U	0.000013 U	0.000017 U	0.00007 U	0.00018 U	0.00011 U	
233'44'55'6-OctaCB-(205)	--	--	0.000097 U	0.000005 U	0.0000034 U	0.00001 U	0.000098 U	0.000097 U	0.0000057 U	0.0000077 U	0.0000028 U	0.0000032 U	0.0000055 U	
233'44'55'-HeptaCB-(189)	--	--	0.000097 U	0.0000072 U	0.0000042 U	0.0000073 U	0.000098 U	0.000097 U	0.0000068 U	0.000007 U	0.0000033 U	0.0000041 U	0.0000049 U	
233'44'56-HeptaCB-(190)	--	--	0.000097 U	0.0000081 U	0.000003 U	0.000012 U	0.000098 U	0.000097 U	0.0000095 U	0.000013 U	0.0000057 U	0.0000059 U	0.0000073 U	
233'44'5'6-HeptaCB-(191)	--	--	0.000097 U	0.0000076 U	0.0000029 U	0.000012 U	0.000098 U	0.000097 U	0.0000089 U	0.000012 U	0.0000055 U	0.0000057 U	0.0000071 U	
233'44'6-HexaCB-(158)	--	--	0.000097 U	0.0000084 U	0.0000094 U	0.000012 U	0.000098 U	0.000097 U	0.0000083 U	0.000012 U	0.0000038 U	0.0000032 U	0.000011 U	
233'44'-PentaCB-(105)	--	--	0.000097 U	0.0000049 U	0.0000042 U	0.000014 U	0.000098 U	0.000097 U	0.0000078 U	0.0000071 U	0.0000028 U	0.0000056 U	0.00001 U	

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-7				MW-9							
			2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	
			Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	
Concentration in µg/L														
233'455'6-HeptaCB-(192)	--	--	0.000097 U	0.000096 U	0.000034 U	0.000015 U	0.000098 U	0.000097 U	0.000011 U	0.000015 U	0.000064 U	0.000067 U	0.000087 U	
233'455'-HexaCB-(159)	--	--	0.000097 U	0.000004 U	0.000036 U	0.000042 U	0.000098 U	0.000097 U	0.000041 U	0.000037 U	0.000016 U	0.000016 U	0.000066 U	
233'4'55'-HexaCB-(162)	--	--	0.000097 U	0.000043 U	0.000004 U	0.000045 U	0.000098 U	0.000097 U	0.000044 U	0.000004 U	0.000017 U	0.000018 U	0.000073 U	
233'456-HexaCB-(160)	--	--	0.000097 U	0.000011 U	0.000011 U	0.000014 U	0.000098 U	0.000097 U	0.000011 U	0.000016 U	0.000046 U	0.000039 U	0.000014 U	
233'45'6-HexaCB-(161)	--	--	0.000097 U	0.000088 U	0.00001 U	0.000012 U	0.000098 U	0.000097 U	0.000087 U	0.000013 U	0.000004 U	0.000034 U	0.000012 U	
233'4'5'6-HexaCB-(164)	--	--	0.000097 U	0.000086 U	0.000099 U	0.000011 U	0.000098 U	0.000097 U	0.000085 U	0.000013 U	0.000004 U	0.000034 U	0.000011 U	
233'45-PentaCB-(106)	--	--	0.000097 U	0.000037 U	0.000039 U	0.00001 U	0.000098 U	0.000097 U	0.000006 U	0.000055 U	0.000026 U	0.000052 U	0.000034 U	
233'4'5-PentaCB-(107)	--	--	0.000097 U	0.000037 U	0.000035 U	0.00001 U	0.000098 U	0.000097 U	0.000059 U	0.000054 U	0.000023 U	0.000046 U	0.000003 U	
233'4'5'-PentaCB-(122)	--	--	0.000097 U	0.000004 U	0.000004 U	0.000011 U	0.000098 U	0.000097 U	0.000064 U	0.000058 U	0.000026 U	0.000052 U	0.000035 U	
233'4'-Tetra CB(56)	--	--	0.000097 U	0.000078 U	0.000087 U	0.000099 U	0.000098 U	0.000097 U	0.00001 U	0.000013 U	0.000006 U	0.000058 U	0.000064 U	
233'4-TetraCB-(55)	--	--	0.000097 U	0.000078 U	0.000009 U	0.000098 U	0.000098 U	0.000097 U	0.00001 U	0.000013 U	0.000062 U	0.000006 U	0.000067 U	
233'55'6-HexaCB-(165)	--	--	0.000097 U	0.00001 U	0.000012 U	0.000014 U	0.000098 U	0.000097 U	0.00001 U	0.000015 U	0.000047 U	0.000004 U	0.000014 U	
233'55'-PentaCB-(111)	--	--	0.000097 U	0.000068 U	0.000078 U	0.000016 U	0.000098 U	0.000097 U	0.000009 U	0.000015 U	0.000002 U	0.000028 U	0.000055 U	
233'56-PentaCB-(112)	--	--	0.000097 U	0.000064 U	0.000076 U	0.000016 U	0.000098 U	0.000097 U	0.000084 U	0.000014 U	0.000019 U	0.000027 U	0.000005 U	
233'5-TetraCB-(57)	--	--	0.000097 U	0.000068 U	0.000077 U	0.000087 U	0.000098 U	0.000097 U	0.000087 U	0.000012 U	0.000053 U	0.000051 U	0.000058 U	
233'5'-TetraCB-(58)	--	--	0.000097 U	0.000008 U	0.000086 U	0.000099 U	0.000098 U	0.000097 U	0.00001 U	0.000013 U	0.000059 U	0.000057 U	0.000064 U	
23'44'55'-HexaCB-(167)	--	--	0.000097 U	0.000005 U	0.000041 U	0.000059 U	0.000098 U	0.000097 U	0.000052 U	0.000047 U	0.000018 U	0.000019 U	0.000091 U	
2344'5-PentaCB-(114)	--	--	0.000097 U	0.000047 U	0.000004 U	0.000014 U	0.000098 U	0.000097 U	0.000076 U	0.000069 U	0.000026 U	0.000053 U	0.000042 U	
23'44'5-PentaCB-(118)	--	--	0.000097 U	0.000048 U	0.000042 U	0.000014 U	0.000098 U	0.000097 U	0.000077 U	0.000007 U	0.000027 U	0.000055 U	0.0000224	
23'44'5'-PentaCB-(123)	--	--	0.000097 U	0.000054 U	0.000046 U	0.000016 U	0.000098 U	0.000097 U	0.000086 U	0.000078 U	0.000003 U	0.000061 U	0.000047 U	
2344'-TetraCB -(60)	--	--	0.000097 U	0.000078 U	0.000089 U	0.000097 U	0.000098 U	0.000097 U	0.00001 U	0.000013 U	0.000062 U	0.000059 U	0.000065 U	
23'44'-TetraCB-(66)	--	--	0.000097 U	0.000065 U	0.000072 U	0.000085 U	0.000098 U	0.000097 U	0.000083 U	0.000011 U	0.000005 U	0.000048 U	0.000054 U	
23'455'-PentaCB-(120)	--	--	0.000097 U	0.000056 U	0.000068 U	0.000014 U	0.000098 U	0.000097 U	0.000075 U	0.000012 U	0.000017 U	0.000024 U	0.000047 U	
23'45'6-PentaCB-(121)	--	--	0.000097 U	0.000068 U	0.000077 U	0.000017 U	0.000098 U	0.000097 U	0.000009 U	0.000014 U	0.000019 U	0.000027 U	0.000057 U	
234'5-TetraCB-(63)	--	--	0.000097 U	0.000065 U	0.000073 U	0.000083 U	0.000098 U	0.000097 U	0.000083 U	0.000011 U	0.000051 U	0.000049 U	0.000055 U	
23'45-TetraCB-(67)	--	--	0.000097 U	0.000062 U	0.000071 U	0.000081 U	0.000098 U	0.000097 U	0.000079 U	0.00001 U	0.000049 U	0.000048 U	0.000054 U	
23'45'-TetraCB-(68)	--	--	0.000064 J	0.000069 J	0.000078 U	0.000089 U	0.000076 J	0.0000102 J	0.000088 J	0.000012 U	0.000054 U	0.000052 U	0.000058 U	
234'6-TetraCB-(64)	--	--	0.000097 U	0.000012 U	0.000097 U	0.000013 U	0.000098 U	0.000097 U	0.000012 U	0.000012 U	0.000064 U	0.000066 U	0.000064 U	
234'-TriCB-(22)	--	--	0.000097 U	0.000011 U	0.000006 U	0.000011 U	0.000098 U	0.000097 U	0.000089 U	0.000014 U	0.000049 U	0.000054 U	0.000011 U	
23'4-TriCB-(25)	--	--	0.000097 U	0.000093 U	0.000051 U	0.000097 U	0.000098 U	0.000097 U	0.000074 U	0.000012 U	0.000042 U	0.000045 U	0.000093 U	
23'55'-TetraCB-(72)	--	--	0.000097 U	0.000064 U	0.000072 U	0.000082 U	0.000098 U	0.000097 U	0.000082 U	0.000011 U	0.000005 U	0.000048 U	0.000054 U	
23'5'6-TetraCB-(73)	--	--	0.000097 U	0.000012 U	0.000092 U	0.000012 U	0.000098 U	0.000097 U	0.000012 U	0.000012 U	0.000006 U	0.000063 U	0.000061 U	
235-TriCB-(23)	--	--	0.000097 U	0.000012 U	0.000006 U	0.000011 U	0.000098 U	0.000097 U	0.000092 U	0.000015 U	0.000049 U	0.000053 U	0.000011 U	
23'5'-TriCB-(34)	--	--	0.000097 U	0.000099 U	0.000053 U	0.00001 U	0.000098 U	0.000097 U	0.000079 U	0.000013 U	0.000043 U	0.000047 U	0.000099 U	
236-TriCB-(24)	--	--	0.000097 U	0.000093 U	0.000014 U	0.000026 U	0.000098 U	0.000097 U	0.000095 U	0.000011 U	0.000071 U	0.000011 U	0.000018 U	
23'6-TriCB-(27)	--	--	0.000097 U	0.000095 U	0.000012 U	0.000016 U	0.000098 U	0.000097 U	0.000097 U	0.000012 U	0.000006 U	0.000089 U	0.000014 U	
24'5-TriCB-(31)	--	--	0.000078 J	0.000091 J	0.000005 U	0.00009 U	0.000074 J	0.000075 J	0.000072 U	0.000012 U	0.000041 U	0.000044 U	0.00009 U	
24'6-TriCB-(32)	--	--	0.000097 U	0.000087 U	0.000011 U	0.000015 U	0.000098 U	0.000097 U	0.000088 U	0.000011 U	0.000058 U	0.000086 U	0.000014 U	

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-7				MW-9							
			2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	
			Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	
Concentration in µg/L														
2-MonoCB-(1)	--	--	0.0000115 J	0.0000063 U	0.0000074 U	0.000005 U	0.0000147 J	0.000018 J	0.000005 U	0.0000073 U	0.0000042	0.0000069 U	0.0000043 U	
3,3'-DiCB-(11)	--	--	0.000035 J	0.000013 J	0.00015 U	0.0000095 U	0.000098 U	0.0000306 J	0.0000093 U	0.000014 U	0.000029 U	0.000055 U	0.000053 U	
3,5-DiCB-(14)	--	--	0.000097 U	0.000013 U	0.00015 U	0.000009 U	0.000098 U	0.000097 U	0.0000092 U	0.000013 U	0.000029 U	0.000054 U	0.000051 U	
33'44'55'-HexaCB-(169)	--	--	0.000097 U	0.000005 U	0.000004 U	0.000006 U	0.000098 U	0.000097 U	0.0000051 U	0.0000046 U	0.0000018 U	0.0000019 U	0.0000091 U	
33'44'5-PentaCB-(126)	--	--	0.000097 U	0.000005 U	0.0000042 U	0.000014 U	0.000098 U	0.000097 U	0.000008 U	0.0000072 U	0.0000028 U	0.0000056 U	0.0000043 U	
33'44'-TetraCB-(77)	--	--	0.000097 U	0.00001 U	0.0000085 U	0.000012 U	0.000098 U	0.000097 U	0.000013 U	0.000017 U	0.0000059 U	0.0000057 U	0.0000073 U	
33'455'-PentaCB-(127)	--	--	0.000097 U	0.0000036 U	0.0000036 U	0.0000097 U	0.000098 U	0.000097 U	0.0000057 U	0.0000052 U	0.0000024 U	0.0000048 U	0.0000031 U	
33'45-TetraCB-(78)	--	--	0.000097 U	0.0000068 U	0.0000076 U	0.0000082 U	0.000098 U	0.000097 U	0.0000086 U	0.000011 U	0.0000052 U	0.000005 U	0.0000054 U	
33'45'-TetraCB-(79)	--	--	0.000097 U	0.0000058 U	0.0000067 U	0.0000073 U	0.000098 U	0.000097 U	0.0000074 U	0.0000098 U	0.0000047 U	0.0000045 U	0.0000047 U	
33'4-TriCB-(35)	--	--	0.000097 U	0.0000093 U	0.0000053 U	0.0000094 U	0.000098 U	0.000097 U	0.0000074 U	0.000012 U	0.0000043 U	0.0000048 U	0.000096 U	
33'55'-TetraCB-(80)	--	--	0.000097 U	0.0000062 U	0.0000069 U	0.0000077 U	0.000098 U	0.000097 U	0.0000079 U	0.00001 U	0.0000048 U	0.0000046 U	0.0000051 U	
33'5-TriCB-(36)	--	--	0.000097 U	0.0000082 U	0.0000046 U	0.0000083 U	0.000098 U	0.000097 U	0.0000065 U	0.00001 U	0.0000038 U	0.0000041 U	0.0000085 U	
344'5-TetraCB-(81)	--	--	0.000097 U	0.00001 U	0.0000087 U	0.000013 U	0.000098 U	0.000097 U	0.000013 U	0.000017 U	0.000006 U	0.0000058 U	0.0000076 U	
344'-TriCB-(37)	--	--	0.000097 U	0.000018 U	0.0000073 U	0.000018 U	0.000098 U	0.000097 U	0.000014 U	0.000023 U	0.0000059 U	0.0000065 U	0.000017 U	
345-TriCB-(38)	--	--	0.000097 U	0.0000094 U	0.0000053 U	0.0000092 U	0.000098 U	0.000097 U	0.0000074 U	0.000012 U	0.0000044 U	0.0000048 U	0.0000093 U	
34'5-TriCB-(39)	--	--	0.000097 U	0.00001 U	0.0000055 U	0.00001 U	0.000098 U	0.000097 U	0.000008 U	0.000013 U	0.0000045 U	0.0000049 U	0.00001 U	
3-MonoCB-(2)	--	--	0.000097 U	0.0000052 U	0.0000066 U	0.0000042 U	0.000098 U	0.000097 U	0.0000042 U	0.000006 U	0.0000023 U	0.0000061 U	0.0000038 U	
4,4'-DiCB-(15)	--	--	0.000097 U	0.000025 U	0.0002 U	0.000016 U	0.000098 U	0.000097 U	0.000018 U	0.000026 U	0.00004 U	0.000075 U	0.000084 U	
4-MonoCB-(3)	--	--	0.000097 U	0.0000063 U	0.0000074 U	0.000005 U	0.000098 U	0.000097 U	0.000005 U	0.0000073 U	0.0000025 U	0.0000068 U	0.0000042 U	
DecaCB-(209)	--	--	0.000097 U	0.0000057 U	0.0000065 U	0.0000073 U	0.000098 U	0.000097 U	0.0000089 U	0.0000081 U	0.0000041 U	0.0000071 U	0.0000056 U	
DiCB-(12)+(13)	--	--	0.00019 U	0.000014 U	0.00016 U	0.00001 U	0.0002 U	0.00019 U	0.00001 U	0.000015 U	0.000031 U	0.000059 U	0.000057 U	
HeptaCB-(171)+(173)	--	--	0.00019 U	0.000013 U	0.0000038 U	0.000017 U	0.0002 U	0.00019 U	0.000016 U	0.000021 U	0.0000072 U	0.0000067 U	0.00001 U	
HeptaCB-(180)+(193)	--	--	0.00019 U	0.0000074 U	0.000003 U	0.000011 U	0.0002 U	0.00019 U	0.0000086 U	0.000012 U	0.0000058 U	0.0000061 U	0.0000066 U	
HexaCB-(128)+(166)	--	--	0.00019 U	0.000011 U	0.000012 U	0.000014 U	0.0002 U	0.00019 U	0.000011 U	0.000016 U	0.0000048 U	0.000004 U	0.000014 U	
HexaCB-(129)+(138)+(163)	--	--	0.00029 U	0.000012 U	0.000013 U	0.000016 U	0.00029 U	0.00029 U	0.000011 U	0.000018	0.0000052 U	0.0000044 U	0.000028	
HexaCB-(134)+(143)	--	--	0.00019 U	0.000014 U	0.000015 U	0.000019 U	0.0002 U	0.00019 U	0.000014 U	0.000021 U	0.0000058 U	0.0000049 U	0.000017 U	
HexaCB-(135)+(151)	--	--	0.00019 U	0.0000086 U	0.0000036 U	0.000017 U	0.0002 U	0.00019 U	0.000028 U	0.000035 U	0.0000018 U	0.0000021 U	0.000019 U	
HexaCB-(139)+(140)	--	--	0.00019 U	0.000012 U	0.000013 U	0.000016 U	0.0002 U	0.00019 U	0.000012 U	0.000018 U	0.0000052 U	0.0000044 U	0.000016 U	
HexaCB-(147)+(149)	--	--	0.00019 U	0.000012 U	0.000013 U	0.000016 U	0.0002 U	0.00019 U	0.000012 U	0.000021	0.0000051 U	0.0000043 U	0.000016 U	
HexaCB-(153)+(168)	--	--	0.00019 U	0.0000096 U	0.000011 U	0.000013 U	0.0002 U	0.00019 U	0.0000095 U	0.000021	0.0000043 U	0.0000036 U	0.000014	
HexaCB-(156)+(157)	--	--	0.00019 U	0.0000047 U	0.0000038 U	0.0000056 U	0.0002 U	0.00019 U	0.0000048 U	0.0000044 U	0.0000017 U	0.0000017 U	0.0000085 U	
OctaCB-(198)+(199)	--	--	0.00019 U	0.0000093 U	0.0000067 U	0.0000089 U	0.0002 U	0.00019 U	0.000013 U	0.0000092 U	0.0000048 U	0.0000041 U	0.000013 U	
PentaCB-(108)+(124)	--	--	0.00019 U	0.0000039 U	0.0000039 U	0.000011 U	0.0002 U	0.00019 U	0.0000062 U	0.0000056 U	0.0000026 U	0.0000051 U	0.0000034 U	
PentaCB-(110)+(115)	--	--	0.00019 U	0.0000071 U	0.00001 U	0.000017 U	0.0002 U	0.00019 U	0.0000094 U	0.000015 U	0.0000025 U	0.0000036 U	0.0000259	
PentaCB-(83)+(99)	--	--	0.00019 U	0.0000094 U	0.00001 U	0.000021 U	0.0002 U	0.00019 U	0.000012 U	0.00002 U	0.0000025 U	0.0000036 U	0.0000077 U	
PentaCB-(85)+(116)+(117)	--	--	0.00029 U	0.000007 U	0.0000083 U	0.000018 U	0.00029 U	0.00029 U	0.0000092 U	0.000015 U	0.0000021 U	0.000003 U	0.0000059 U	
PentaCB-(86)(87)(97)(109)(119)(125)	--	--	0.00058 U	0.0000074 U	0.0000087 U	0.000018 U	0.00059 U	0.00058 U	0.0000099 U	0.000016 U	0.0000022 U	0.0000031 U	0.0000152 U	
PentaCB-(88)+(91)	--	--	0.00019 U	0.0000094 U	0.0000099 U	0.000022 U	0.0002 U	0.00019 U	0.000012 U	0.00002 U	0.0000025 U	0.0000035 U	0.0000073 U	

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS													
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-7				MW-9						
			2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016
			Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate
Concentration in µg/L													
PentaCB-(90)+(101)+(113)	--	--	0.00029 U	0.0000076 U	0.0000087 U	0.000019 U	0.00029 U	0.00029 U	0.00001 U	0.000016 U	0.0000022 U	0.0000031 U	0.000018 U
PentaCB-(93)+(98)+(100)+(102)	--	--	0.00039 U	0.0000096 U	0.00001 U	0.000022 U	0.00039 U	0.00039 U	0.000013 U	0.00002 U	0.0000025 U	0.0000036 U	0.0000075 U
TetraCB-(40)+(41)+(71)	--	--	0.00029 U	0.000016 U	0.000012 U	0.000021 U	0.00029 U	0.00029 U	0.000016 U	0.000016 U	0.0000081 U	0.0000084 U	0.000008 U
TetraCB-(44)+(47)+(65)	--	--	0.00029 U	0.000019	0.000011 U	0.000015 U	0.000025 J	0.000027 J	0.000015 U	0.00002 U	0.0000075 U	0.0000078 U	0.0000161
TetraCB-(45)+(51)	--	--	0.00019 U	0.000048	0.000021 U	0.000029 U	0.000028 J	0.00003 J	0.000017 U	0.000026 U	0.0000231	0.0000215	0.000022 U
TetraCB-(49)+TetraCB-(69)	--	--	0.00019 U	0.000013 U	0.00001 U	0.000014 U	0.0002 U	0.00019 U	0.000013 U	0.000013 U	0.0000068 U	0.0000071 U	0.000007 U
TetraCB-(50)+(53)	--	--	0.00019 U	0.000016 U	0.000012 U	0.000016 U	0.0002 U	0.00019 U	0.000017 U	0.000016 U	0.0000077 U	0.000008 U	0.000008 U
TetraCB-(59)+(62)+(75)	--	--	0.00029 U	0.000011 U	0.0000092 U	0.000012 U	0.00029 U	0.00029 U	0.000011 U	0.000011 U	0.000006 U	0.0000063 U	0.0000061 U
TetraCB-(61)+(70)+(74)+(76)	--	--	0.0000047 J	0.0000072 J	0.0000082 U	0.0000093 U	0.00039 U	0.00039 U	0.0000093 U	0.000012 U	0.0000057 U	0.0000055 U	0.0000147
TriCB-(18)+(30)	--	--	0.00019 U	0.000011 U	0.000015 U	0.00002 U	0.0002 U	0.00019 U	0.000012 U	0.000014 U	0.0000074 U	0.000011 U	0.000019 U
TriCB-(20) + (28)	--	--	0.0000097 J	0.0000099 J	0.0000055 U	0.000011 U	0.0002 U	0.00019 U	0.0000078 U	0.000013 U	0.0000051 U	0.0000049 U	0.00001 U
TriCB-(21)+(33)	--	--	0.0000077 J	0.00001 J	0.0000055 U	0.0000097 U	0.0000074 J	0.00019 U	0.000008 U	0.000013 U	0.0000045 U	0.0000049 U	0.0000098 U
TriCB-(26)+(29)	--	--	0.00019 U	0.0000096 U	0.0000053 U	0.0000096 U	0.0002 U	0.00019 U	0.0000076 U	0.000012 U	0.0000043 U	0.0000047 U	0.0000099 U
DiCB-(4)+(10)	--	--	--	--	--	--	--	--	--	--	--	--	--
DiCB-(7)+(9)	--	--	--	--	--	--	--	--	--	--	--	--	--
DiCB-(5)+(8)	--	--	--	--	--	--	--	--	--	--	--	--	--
246-TriCB-(30)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'5-TriCB-(18)	--	--	--	--	--	--	--	--	--	--	--	--	--
TriCB-(24)+(27)	--	--	--	--	--	--	--	--	--	--	--	--	--
TriCB-(16)+(32)	--	--	--	--	--	--	--	--	--	--	--	--	--
245-TriCB-(29)	--	--	--	--	--	--	--	--	--	--	--	--	--
23'5-TriCB-(26)	--	--	--	--	--	--	--	--	--	--	--	--	--
244'-TriCB-(28)	--	--	--	--	--	--	--	--	--	--	--	--	--
TriCB-(20)+(21)+(33)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'46-TetraCB-(50)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'56'-TetraCB-(53)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'46'-TetraCB-(51)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'36-TetraCB-(45)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(52)+(69)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(43)+(49)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'44'-TetraCB-(47)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(48)+(75)	--	--	--	--	--	--	--	--	--	--	--	--	--
2356-TetraCB-(65)	--	--	--	--	--	--	--	--	--	--	--	--	--
2346-TetraCB-(62)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'35'-TetraCB-(44)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(42)+(59)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(41)+(64)+(71)+(72)	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'-TetraCB-(40)	--	--	--	--	--	--	--	--	--	--	--	--	--
244'5-TetraCB-(74)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(61)+(70)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(66)+(76)	--	--	--	--	--	--	--	--	--	--	--	--	--
TetraCB-(56)+(60)	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-7				MW-9							
			2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	
			Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	
Concentration in µg/L														
22'44'6-PentaCB-(100)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(93)+(95)+(98)+(102)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(84)+(92)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(90)+(101)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
233'5'6-PentaCB-(113)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'44'5-PentaCB-(99)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'5-PentaCB-(83)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(112)+(119)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
233'46-PentCB-(109)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'3'45-PentaCB-(97)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'345-PentaCB-(86)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(87)+(117)+(125)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(111)+(115)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(85)+(116)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
233'4'6-PentaCB-(110)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2'3455'-PentaCB-(124)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(107)+(108)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PentaCB-(106)+(118)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'66'-HexaCB-(136)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'355'6-HexaCB-(151)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'56'-HexaCB-(135)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'34'56-HexaCB-(147)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(139)+(149)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'344'6'-HexaCB-(140)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(131)+(142)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(132)+(146)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(161)+(165)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'44'55'-HexaCB-(153)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23'44'5'6-HexaCB-(168)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(138)+(163)+(164)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(158)+(160)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'45-HexaCB-(129)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2344'56-HexaCB-(166)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HexaCB-(138)+(162)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
233'44'5-HexaCB-(156)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
233'44'5'-HexaCB-(157)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HeptaCB-(182)+(187)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'44'6-HeptaCB(171)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'456-HeptaCB-(1173)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'344'55'-HeptaCB-(180)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
233'4'55'6-HeptaCB-(193)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'455'6-OctaCB-(198)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22'33'455'6'-OctaCB-(199)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OctaCB-(196)+(203)	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS			
Sample ID Date Sample Type	PHSS	JSCS	
	Cleanup	Screening	12/20/2016
	Level	Level Value	Primary
Concentration in µg/L			
Total PCB Congeners	0.014	--	0.000166
2,3-DiCB-(5)	--	--	0.000062 U
2,3'-DiCB-(6)	--	--	0.00006 U
2,4-DiCB-(7)	--	--	0.000067 U
2,4'-DiCB-(8)	--	--	0.000063 U
2,5-DiCB-(9)	--	--	0.000058 U
2,6-DiCB-(10)	--	--	0.00011 U
22'33'44'55'6-NonaCB-(206)	--	--	0.000015 U
22'33'44'55'-OctaCB-(194)	--	--	0.0000041 U
22'33'44'566'-NonaCB-(207)	--	--	0.000012 U
22'33'44'56-OctaCB-(195)	--	--	0.0000046 U
22'33'44'56'-OctaCB-(196)	--	--	0.0000076 U
22'33'44'5-HeptaCB-(170)	--	--	0.000011 U
22'33'44'66'OctaCB-(197)	--	--	0.0000066 U
22'33'455'66'-NonaCB-(208)	--	--	0.000015 U
22'33'455'-HeptaCB-(172)	--	--	0.000014 U
22'33'4566'-OctaCB-(200)	--	--	0.0000054 U
22'33'45'66'-OctaCB-(201)	--	--	0.0000056 U
22'33'456'-HeptaCB-(174)	--	--	0.000014 U
22'33'45'6-HeptaCB-(175)	--	--	0.000009 U
22'33'45'6'-HeptaCB-(177)	--	--	0.000014 U
22'33'45'-HexaCB-(130)	--	--	0.000015 U
22'33'466'-HeptaCB-(176)	--	--	0.000007 U
22'33'46-HexaCB-(131)	--	--	0.000017 U
22'33'46'-HexaCB-(132)	--	--	0.000016 U
22'33'4-PentaCB-(82)	--	--	0.000013 U
22'33'55'66'-OctaCB-(202)	--	--	0.000006 U
22'33'55'6-HeptaCB-(178)	--	--	0.0000097 U
22'33'55'-HexaCB-(133)	--	--	0.000013 U
22'33'566'-HeptaCB-(179)	--	--	0.000007 U
22'33'66'-HexaCB-(136)	--	--	0.000012 U
22'33'6-PentaCB-(84)	--	--	0.000013 U
22'344'55'6-OctaCB-(203)	--	--	0.0000081 U
22'344'566'-OctaCB-(204)	--	--	0.0000057 U
22'344'56-HeptaCB-(181)	--	--	0.000015 U
22'344'56'-HeptaCB-(182)	--	--	0.0000094 U
22'344'5'6-HeptaCB-(183)	--	--	0.000012 U
22'344'5-HexaCB-(137)	--	--	0.000016 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS			
Sample ID Date Sample Type	PHSS	JSCS	
	Cleanup	Screening	12/20/2016
	Level	Level Value	Primary
Concentration in µg/L			
22'344'66'-HeptaCB-(184)	--	--	0.0000074 U
22'3455'6-HeptaCB-(185)	--	--	0.000016 U
22'34'55'6-HeptaCB-(187)	--	--	0.0000097 U
22'3455'-HexaCB-(141)	--	--	0.000013 U
22'34'55'-HexaCB-(146)	--	--	0.000012 U
22'34566'-HeptaCB-(186)	--	--	0.0000082 U
22'34'566'-HeptaCB-(188)	--	--	0.0000065 U
22'3456-HexaCB-(142)	--	--	0.000015 U
22'345'6-HexaCB-(144)	--	--	0.000016 U
22'34'56'-HexaCB-(148)	--	--	0.000016 U
22'3466'-HexaCB-(145)	--	--	0.000014 U
22'34'66'-HexaCB-(150)	--	--	0.000015 U
22'346'-PentaCB-(89)	--	--	0.000012 U
22'34'-TetraCB-(42)	--	--	0.0000095 U
22'355'-PentaCB-(92)	--	--	0.000011 U
22'3566'-HexaCB-(152)	--	--	0.000012 U
22'356'-PentaCB-(94)	--	--	0.000014 U
22'35'6-PentaCB-(95)	--	--	0.000017
22'35-TetraCB-(43)	--	--	0.000012 U
22'366'-PentaCB-(96)	--	--	0.0000051 U
22'36'-TetraCB-(46)	--	--	0.0000094 U
22'3-TriCB-(16)	--	--	0.000047 U
22'44'56'-HexaCB-(154)	--	--	0.000015 U
22'44'66'-HexaCB-(155)	--	--	0.0000079 U
22'45'6-PentaCB-(103)	--	--	0.00001 U
22'45-TetraCB-(48)	--	--	0.0000084 U
22'466'-PentaCB-(104)	--	--	0.0000032 U
22'4-TriCB-(17)	--	--	0.000031 U
22'55'-TetraCB-(52)	--	--	0.0000146
22'66'-TetraCB-(54)	--	--	0.0000089 U
22'6-TriCB-(19)	--	--	0.000024 U
22'-DiCB-(4)	--	--	0.00011 U
233'44'55'6-OctaCB-(205)	--	--	0.0000044 U
233'44'55'-HeptaCB-(189)	--	--	0.0000057 U
233'44'56-HeptaCB-(190)	--	--	0.000011 U
233'44'5'6-HeptaCB-(191)	--	--	0.00001 U
233'44'6-HexaCB-(158)	--	--	0.0000096 U
233'44'-PentaCB-(105)	--	--	0.0000088

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS			
Sample ID Date Sample Type	PHSS	JSCS	
	Cleanup	Screening	12/20/2016
	Level	Level Value	Primary
Concentration in µg/L			
233'455'6-HeptaCB-(192)	--	--	0.000013 U
233'455'-HexaCB-(159)	--	--	0.0000047 U
233'4'55'-HexaCB-(162)	--	--	0.0000052 U
233'456-HexaCB-(160)	--	--	0.000012 U
233'45'6-HexaCB-(161)	--	--	0.00001 U
233'4'5'6-HexaCB-(164)	--	--	0.0000098 U
233'45-PentaCB-(106)	--	--	0.0000019 U
233'4'5-PentaCB-(107)	--	--	0.0000017 U
233'4'5'-PentaCB-(122)	--	--	0.000002 U
233'4'-Tetra CB(56)	--	--	0.0000047 U
233'4-TetraCB-(55)	--	--	0.0000049 U
233'55'6-HexaCB-(165)	--	--	0.000012 U
233'55'-PentaCB-(111)	--	--	0.000009 U
233'56-PentaCB-(112)	--	--	0.0000082 U
233'5-TetraCB-(57)	--	--	0.0000042 U
233'5'-TetraCB-(58)	--	--	0.0000046 U
23'44'55'-HexaCB-(167)	--	--	0.0000065 U
2344'5-PentaCB-(114)	--	--	0.0000024 U
23'44'5-PentaCB-(118)	--	--	0.0000213
23'44'5'-PentaCB-(123)	--	--	0.0000027 U
2344'-TetraCB -(60)	--	--	0.0000047 U
23'44'-TetraCB-(66)	--	--	0.000004 U
23'455'-PentaCB-(120)	--	--	0.0000078 U
23'45'6-PentaCB-(121)	--	--	0.0000093 U
234'5-TetraCB-(63)	--	--	0.000004 U
23'45-TetraCB-(67)	--	--	0.0000039 U
23'45'-TetraCB-(68)	--	--	0.0000051 U
234'6-TetraCB-(64)	--	--	0.0000062 U
234'-TriCB-(22)	--	--	0.0000085 U
23'4-TriCB-(25)	--	--	0.0000072 U
23'55'-TetraCB-(72)	--	--	0.000004 U
23'5'6-TetraCB-(73)	--	--	0.000006 U
235-TriCB-(23)	--	--	0.0000086 U
23'5'-TriCB-(34)	--	--	0.0000076 U
236-TriCB-(24)	--	--	0.000024 U
23'6-TriCB-(27)	--	--	0.000019 U
24'5-TriCB-(31)	--	--	0.000007 U
24'6-TriCB-(32)	--	--	0.000019 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS			
Sample ID Date Sample Type	PHSS	JSCS	
	Cleanup	Screening	12/20/2016
	Level	Level Value	Primary
Concentration in µg/L			
2-MonoCB-(1)	--	--	0.0000025 U
3,3'-DiCB-(11)	--	--	0.00006 U
3,5-DiCB-(14)	--	--	0.000058 U
33'44'55'-HexaCB-(169)	--	--	0.0000065 U
33'44'5-PentaCB-(126)	--	--	0.0000025 U
33'44'-TetraCB-(77)	--	--	0.0000053 U
33'455'-PentaCB-(127)	--	--	0.0000018 U
33'45-TetraCB-(78)	--	--	0.000004 U
33'45'-TetraCB(79)	--	--	0.0000035 U
33'4-TriCB-(35)	--	--	0.0000074 U
33'55'-TetraCB-(80)	--	--	0.0000037 U
33'5-TriCB-(36)	--	--	0.0000066 U
344'5-TetraCB-(81)	--	--	0.0000055 U
344'-TriCB-(37)	--	--	0.000013 U
345-TriCB-(38)	--	--	0.0000072 U
34'5-TriCB-(39)	--	--	0.0000078 U
3-MonoCB-(2)	--	--	0.0000022 U
4,4'-DiCB-(15)	--	--	0.000094 U
4-MonoCB-(3)	--	--	0.0000024 U
DecaCB-(209)	--	--	0.0000086 U
DiCB-(12)+(13)	--	--	0.000064 U
HeptaCB-(171)+(173)	--	--	0.000014 U
HeptaCB-(180)+(193)	--	--	0.0000096 U
HexaCB-(128)+(166)	--	--	0.000012 U
HexaCB-(129)+(138)+(163)	--	--	0.000016 U
HexaCB-(134)+(143)	--	--	0.000015 U
HexaCB-(135)+(151)	--	--	0.000018 U
HexaCB-(139)+(140)	--	--	0.000014 U
HexaCB-(147)+(149)	--	--	0.000017 U
HexaCB-(153)+(168)	--	--	0.000011 U
HexaCB-(156)+(157)	--	--	0.0000061 U
OctaCB-(198)+(199)	--	--	0.0000082 U
PentaCB-(108)+(124)	--	--	0.000002 U
PentaCB-(110)+(115)	--	--	0.0000343
PentaCB-(83)+(99)	--	--	0.000013 U
PentaCB-(85)+(116)+(117)	--	--	0.0000096 U
PentaCB-(86)(87)(97)(109)(119)(125)	--	--	0.000014
PentaCB-(88)+(91)	--	--	0.000012 U

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS			
Sample ID Date Sample Type	PHSS	JSCS	
	Cleanup	Screening	12/20/2016
	Level	Level Value	Primary
Concentration in µg/L			
PentaCB-(90)+(101)+(113)	--	--	0.000018 U
PentaCB-(93)+(98)+(100)+(102)	--	--	0.000012 U
TetraCB-(40)+(41)+(71)	--	--	0.0000078 U
TetraCB-(44)+(47)+(65)	--	--	0.000012 U
TetraCB-(45)+(51)	--	--	0.0000387
TetraCB-(49)+TetraCB-(69)	--	--	0.0000069 U
TetraCB-(50)+(53)	--	--	0.0000078 U
TetraCB-(59)+(62)+(75)	--	--	0.0000059 U
TetraCB-(61)+(70)+(74)+(76)	--	--	0.00001 U
TriCB-(18)+(30)	--	--	0.000026 U
TriCB-(20) + (28)	--	--	0.0000079 U
TriCB-(21)+(33)	--	--	0.0000076 U
TriCB-(26)+(29)	--	--	0.0000076 U
DiCB-(4)+(10)	--	--	--
DiCB-(7)+(9)	--	--	--
DiCB-(5)+(8)	--	--	--
246-TriCB-(30)	--	--	--
22'5-TriCB-(18)	--	--	--
TriCB-(24)+(27)	--	--	--
TriCB-(16)+(32)	--	--	--
245-TriCB-(29)	--	--	--
23'5-TriCB-(26)	--	--	--
244'-TriCB-(28)	--	--	--
TriCB-(20)+(21)+(33)	--	--	--
22'46-TetraCB-(50)	--	--	--
22'56'-TetraCB-(53)	--	--	--
22'46'-TetraCB-(51)	--	--	--
22'36-TetraCB-(45)	--	--	--
TetraCB-(52)+(69)	--	--	--
TetraCB-(43)+(49)	--	--	--
22'44'-TetraCB-(47)	--	--	--
TetraCB-(48)+(75)	--	--	--
2356-TetraCB-(65)	--	--	--
2346-TetraCB-(62)	--	--	--
22'35'-TetraCB-(44)	--	--	--
TetraCB-(42)+(59)	--	--	--
TetraCB-(41)+(64)+(71)+(72)	--	--	--
22'33'-TetraCB-(40)	--	--	--
244'5-TetraCB-(74)	--	--	--
TetraCB-(61)+(70)	--	--	--
TetraCB-(66)+(76)	--	--	--
TetraCB-(56)+(60)	--	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS			
Sample ID Date Sample Type	PHSS	JSCS	
	Cleanup	Screening	12/20/2016
	Level	Level Value	Primary
Concentration in µg/L			
22'44'6-PentaCB-(100)	--	--	--
PentaCB-(93)+(95)+(98)+(102)	--	--	--
PentaCB-(84)+(92)	--	--	--
PentaCB-(90)+(101)	--	--	--
233'5'6-PentaCB-(113)	--	--	--
22'44'5-PentaCB-(99)	--	--	--
22'33'5-PentaCB-(83)	--	--	--
PentaCB-(112)+(119)	--	--	--
233'46-PentCB-(109)	--	--	--
22'3'45-PentaCB-(97)	--	--	--
22'345-PentaCB-(86)	--	--	--
PentaCB-(87)+(117)+(125)	--	--	--
PentaCB-(111)+(115)	--	--	--
PentaCB-(85)+(116)	--	--	--
233'4'6-PentaCB-(110)	--	--	--
2'3455'-PentaCB-(124)	--	--	--
PentaCB-(107)+(108)	--	--	--
PentaCB-(106)+(118)	--	--	--
22'33'66'-HexaCB-(136)	--	--	--
22'355'6-HexaCB-(151)	--	--	--
22'33'56'-HexaCB-(135)	--	--	--
22'34'56-HexaCB-(147)	--	--	--
HexaCB-(139)+(149)	--	--	--
22'344'6'-HexaCB-(140)	--	--	--
HexaCB-(131)+(142)	--	--	--
HexaCB-(132)+(146)	--	--	--
HexaCB-(161)+(165)	--	--	--
22'44'55'-HexaCB-(153)	--	--	--
23'44'5'6-HexaCB-(168)	--	--	--
HexaCB-(138)+(163)+(164)	--	--	--
HexaCB-(158)+(160)	--	--	--
22'33'45-HexaCB-(129)	--	--	--
2344'56-HexaCB-(166)	--	--	--
HexaCB-(138)+(162)	--	--	--
233'44'5-HexaCB-(156)	--	--	--
233'44'5'-HexaCB-(157)	--	--	--
HeptaCB-(182)+(187)	--	--	--
22'33'44'6-HeptaCB(171)	--	--	--
22'33'456-HeptaCB-(1173)	--	--	--
22'344'55'-HeptaCB-(180)	--	--	--
233'4'55'6-HeptaCB-(193)	--	--	--
22'33'455'6-OctaCB-(198)	--	--	--
22'33'455'6'-OctaCB-(199)	--	--	--
OctaCB-(196)+(203)	--	--	--

Please see notes at end of table.

Table A-4
PCB Congeners in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

- 1. µg/L = micrograms per liter
- 2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
- 3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
- 4. J = Estimated value after QA review.
- 5. U = Non-detected value.
- 6. Shading indicates a concentration equal to or exceeding a screening level
- 7. PCBs = Polychlorinated biphenyls.

Table A-5
Pesticides in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	2,4'-DDD	2,4'-DDE	2,4'-DDT	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	beta-BHC	cis-Chlordane
			Concentration in µg/L									
PHSS Cleanup Level			0.000031	0.000018	0.000022	0.000031	0.000018	0.000022	--	--	--	--
JSCS Screening Level Value			--	--	--	--	--	--	0.00005	0.0049	0.017	--
WEST PARCEL GRAB SAMPLES												
DP-1 (35-40)	12/14/2016	Primary	--	--	--	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U
DP-2 (40-45)	12/29/2016	Primary	--	--	--	0.0192 U	0.00962 U	0.0202 UR	0.00962 U	0.00962 U	--	0.00962 U
DP-3 (35-40)	12/21/2016	Primary	--	--	--	0.00463 U	0.00463 U	0.00463 U	0.00463 U	0.00463 U	--	0.00463 U
DP-4 (40-45)	1/5/2017	Primary	--	--	--	0.014 U	0.00935 U	0.0159 U	0.00467 U	0.00467 U	--	0.00467 U
DP-5 (40-45)	1/5/2017	Primary	--	--	--	0.018 U	0.0117 U	0.016 U	0.0126 U	0.0112 U	--	0.0102 U
DP-5 (55-60)	1/5/2017	Primary	--	--	--	0.00467 U	0.00467 U	0.00935 U	0.00467 U	0.00467 U	--	0.00467 U
EAST PARCEL GRAB SAMPLES												
SE/E-17	1/26/1988	Primary	--	--	--	2 U	2 U	4 U	2 U	2 U	2 U	--
TRENCH 2	9/28/2010	Primary	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U
TRENCH 4	9/29/2010	Primary	0.0094 U	0.034 U	0.0028 U	0.00042 U	0.02 U	0.00042 U	0.00083 U	0.00083 U	0.00083 U	0.00083 U
WEST PARCEL MONITORING WELLS												
MW-1	9/14/2016	Primary	--	--	--	0.00476 U	0.00476 U	0.0114 U	0.00476 U	0.00476 U	--	0.00476 U
	12/20/2016	Primary	--	--	--	0.00935 U	0.00467 U	0.015 UR	0.00467 U	0.00467 U	--	0.00467 U
	12/3/2019	Primary	0.000313	2.46E-05 J	0.000376	0.00103	0.000493	0.000777	1.02E-05 U	5.88E-06 U	9.01E-06 U	3.62E-05 J
	8/11/2020	Primary	4.24E-05	9.47E-06 U	1.81E-05 U	0.00012	5.49E-05	4.75E-05	1.27E-05 U	1.29E-05 U	1.45E-05 U	1.98E-05 U
	2/24/2021	Primary	9.16E-06 U	9.79E-06 UJ	1.06E-05 U	2.56E-05 J	1.06E-05 J+	1.42E-05 U	1.17E-05 U	9.37E-06 U	8.94E-06 U	9.96E-06 UJ
MW-2	9/14/2016	Primary	--	--	--	0.028	0.00476 U	0.00476 U	0.00476 U	0.00476 U	--	0.00476 U
	12/20/2016	Primary	--	--	--	0.0514	0.00467 U	0.00467 U	0.00467 U	0.00467 U	--	0.00467 U
	12/3/2019	Primary	0.047	0.000727	2.38E-05 J	0.0593	0.00231	4.17E-05	5.28E-06 U	4.73E-06 U	5.96E-06 U	1.42E-05 U
	8/11/2020	Primary	0.0518	0.000938	6.01E-05	0.0657	0.00299	7.68E-05	1.33E-05 U	1.35E-05 U	1.51E-05 U	2.07E-05 U
	2/23/2021	Primary	0.0463	0.00196 J+	1.58E-05 J	0.0588	0.0025	3.63E-05 J	1.23E-05 U	9.86E-06 U	9.4E-06 U	0.00001 UJ
MW-3	9/14/2016	Primary	--	--	--	0.00476 U	0.00476 U	0.00952 U	0.00476 U	0.00476 U	--	0.00476 U
	12/20/2016	Primary	--	--	--	0.0103 UR	0.00935 U	0.0131 UR	0.00467 U	0.00467 U	--	0.00467 U
	12/3/2019	Primary	0.00174	0.000128	3.51E-05 J	0.00455	0.00149	0.000125	1.34E-05 J	1.03E-05 J	1.49E-05 U	0.000214
	8/12/2020	Primary	0.000965	7.54E-05	1.91E-05 U	0.00245	0.000856	4.15E-05 J	1.34E-05 U	1.36E-05 U	1.53E-05 U	0.000134
	3/1/2021	Primary	0.000404	0.000037 J+	1.12E-05 U	0.00107	0.000318	1.49E-05 U	1.23E-05 U	9.87E-06 U	9.42E-06 U	7.63E-05 J
EAST PARCEL MONITORING WELLS												
MW-35s	11/1/1999	Primary	--	--	--	6 U	6 U	6 U	6 U	6 U	6 U	--
MW-7	2/8/2002	Primary	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

Please see notes at end of table.

Table A-5
Pesticides in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin Aldehyde	Endrin ketone	gamma-BHC (Lindane)	Heptachlor
			Concentration in µg/L									
PHSS Cleanup Level			--	--	--	--	--	--	--	--	--	--
JSCS Screening Level Value			0.037	0.000054	0.051	0.051	89	0.036	0.3	--	0.052	0.000079
WEST PARCEL GRAB SAMPLES												
DP-1 (35-40)	12/14/2016	Primary	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U	0.0189 U
DP-2 (40-45)	12/29/2016	Primary	--	0.00962 U	--	--	--	--	--	--	--	0.0192 U
DP-3 (35-40)	12/21/2016	Primary	--	0.00463 U	--	--	--	--	--	--	--	0.00463 U
DP-4 (40-45)	1/5/2017	Primary	--	0.00935 U	--	--	--	--	--	--	--	0.0107 U
DP-5 (40-45)	1/5/2017	Primary	--	0.0123 U	--	--	--	--	--	--	--	0.0961 U
DP-5 (55-60)	1/5/2017	Primary	--	0.00467 U	--	--	--	--	--	--	--	0.00467 U
EAST PARCEL GRAB SAMPLES												
SE/E-17	1/26/1988	Primary	2 U	--	2 U	2 U	10 U	4 U	10 U	--	2 U	2 U
TRENCH 2	9/28/2010	Primary	0.00083 U	0.0017 U	0.00083 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.00083 U	0.00083 U
TRENCH 4	9/29/2010	Primary	0.00083 U	0.015 U	0.00083 U	0.019 U	0.0017 U	0.0017 U	0.0026 U	0.0017 U	0.00083 U	0.00083 U
WEST PARCEL MONITORING WELLS												
MW-1	9/14/2016	Primary	--	0.00476 U	--	--	--	--	--	--	--	0.00476 U
	12/20/2016	Primary	--	0.00467 U	--	--	--	--	--	--	--	0.00467 U
	12/3/2019	Primary	8.2E-06 U	2.49E-05 U	0.000023 U	0.000125 U	8.13E-05 U	3.29E-05 U	0.00019 U	5.34E-05 U	8.69E-06 U	4.8E-06 U
	8/11/2020	Primary	1.31E-05 U	1.03E-05 U	0.000195 U	0.000181 U	0.000163 U	1.46E-05 U		0.000153 U	1.21E-05 U	8.42E-06 U
	2/24/2021	Primary	9.42E-06 U	7.51E-06 U	4.42E-05 U	0.000057 U	3.95E-05 U	1.24E-05 U		3.26E-05 U	1.09E-05 U	1.06E-05 U
MW-2	9/14/2016	Primary	--	0.00476 U	--	--	--	--	--	--	--	0.00476 U
	12/20/2016	Primary	--	0.00467 U	--	--	--	--	--	--	--	0.00467 U
	12/3/2019	Primary	5.13E-06 U	2.85E-05 J	3.65E-05 U	0.000175 U	3.72E-05 U	1.72E-05 U	3.83E-05 U	3.34E-05 U	6.25E-06 U	2.44E-06 U
	8/11/2020	Primary	1.37E-05 U	0.000025 J	0.000204 U	0.00019 U	0.00017 U	1.53E-05 U		0.00016 U	1.26E-05 U	8.81E-06 U
	2/23/2021	Primary	9.91E-06 U	2.42E-05 J	4.64E-05 U	0.00006 U	4.16E-05 U	0.000013 U		3.42E-05 U	1.15E-05 U	1.12E-05 U
MW-3	9/14/2016	Primary	--	0.00952 U	--	--	--	--	--	--	--	0.00476 U
	12/20/2016	Primary	--	0.00935 U	--	--	--	--	--	--	--	0.00467 U
	12/3/2019	Primary	0.000012 U	3.64E-05 J	4.36E-05 U	0.000123 U	7.63E-05 U	4.67E-05 U	0.000172 U	7.52E-05 U	1.55E-05 U	7.49E-06 U
	8/12/2020	Primary	1.38E-05 U	2.86E-05 J	0.000205 U	0.000191 U	0.000171 U	1.54E-05 U		0.000162 U	1.27E-05 U	8.88E-06 U
	3/1/2021	Primary	9.93E-06 U	7.92E-06 U	4.65E-05 U	6.01E-05 U	4.17E-05 U	1.31E-05 U		3.43E-05 U	1.15E-05 U	1.12E-05 U
EAST PARCEL MONITORING WELLS												
MW-35s	11/1/1999	Primary	6 U	6 U	6 U	6 U	6 U	6 U	--	--	6 U	6 U
MW-7	2/8/2002	Primary	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

Please see notes at end of table.

Table A-5
Pesticides in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Heptachlor epoxide	Methoxychlor	Total Chlordane	Total DDD	Total DDE	Total DDT	Total DDx	Toxaphene	trans-Chlordane	trans-Nonachlor
			Concentration in µg/L									
PHSS Cleanup Level			--	--	--	--	--	--	--	--	--	--
JSCS Screening Level Value			0.000039	0.03	0.00081	--	--	--	--	0.0002	--	0.19
WEST PARCEL GRAB SAMPLES												
DP-1 (35-40)	12/14/2016	Primary	0.0189 U	0.0566 U	0.708 U	0.0189 UTA	0.0189 UTA	0.0189 UTA	0.0189 UTA	0.708 U	0.0189 U	--
DP-2 (40-45)	12/29/2016	Primary	0.00962 U	--	0.362 U	0.0192 UTA	0.00962 UTA	0.0202 UTA	0.0202 UTA	0.362 U	0.00962 U	--
DP-3 (35-40)	12/21/2016	Primary	0.00463 U	--	0.174 U	0.00463 UTA	0.00463 UTA	0.00463 UTA	0.00463 UTA	0.174 U	0.00463 U	--
DP-4 (40-45)	1/5/2017	Primary	0.00467 U	--	0.176 U	0.014 UTA	0.00935 UTA	0.0159 UTA	0.0159 UTA	0.176 U	0.00467 U	--
DP-5 (40-45)	1/5/2017	Primary	0.0136 U	--	0.183 U	0.018 UTA	0.0117 UTA	0.016 UTA	0.018 UTA	0.183 U	0.0117 U	--
DP-5 (55-60)	1/5/2017	Primary	0.00467 U	--	0.176 U	0.00467 UTA	0.00467 UTA	0.00935 UTA	0.00935 UTA	0.176 U	0.00467 U	--
EAST PARCEL GRAB SAMPLES												
SE/E-17	1/26/1988	Primary	2 U	20 U	20 U	2 UTA	2 UTA	4 UTA	4 UTA	30 U	--	--
TRENCH 2	9/28/2010	Primary	0.00083 U	0.0083 U	--	0.00042 UT	0.00042 UT	0.00042 UT	0.00042 UT	0.083 U	0.00083 U	--
TRENCH 4	9/29/2010	Primary	0.026 U	0.0083 U	--	0.0094 UT	0.034 UT	0.0028 UT	0.034 UT	0.083 U	0.00083 U	--
WEST PARCEL MONITORING WELLS												
MW-1	9/14/2016	Primary	0.00476 U	--	0.179 U	0.00476 UTA	0.00476 UTA	0.0114 UTA	0.0114 UTA	0.179 U	0.00476 U	--
	12/20/2016	Primary	0.00467 U	--	0.176 U	0.00935 UTA	0.00467 UTA	0.015 UTA	0.015 UTA	0.176 U	0.00467 U	--
	12/3/2019	Primary	0.000118 U	--	0.006865	0.001343	0.000518	0.001153	0.003014	--	5.34E-05	3.79E-05 U
	8/11/2020	Primary	2.06E-05 U	--	2.04E-05 U	0.000162	5.96E-05	5.66E-05	0.000274	--	1.25E-05 U	2.04E-05 U
	2/24/2021	Primary	3.04E-05 J	--	1.36E-05 U	3.02E-05 J	1.55E-05 J	1.24E-05 U	4.33E-05 J	--	0.000012 U	1.36E-05 UJ
MW-2	9/14/2016	Primary	0.00952 U	--	0.179 U	0.028 TA	0.00476 UTA	0.00476 UTA	0.03276 TA	0.179 U	0.00476 U	--
	12/20/2016	Primary	0.00467 U	--	0.176 U	0.0514 TA	0.00467 UTA	0.00467 UTA	0.05607 TA	0.176 U	0.00467 U	--
	12/3/2019	Primary	4.76E-05 U	--	0.109403 U	0.1063	0.003037	6.55E-05	0.109403	--	1.59E-05 U	1.41E-05 U
	8/11/2020	Primary	2.16E-05 U	--	2.83E-05	0.1175	0.003928	0.000137	0.121565	--	1.76E-05 J	2.14E-05 U
	2/23/2021	Primary	2.35E-05 U	--	1.43E-05 U	0.1051	0.00446	5.21E-05	0.109612	--	1.26E-05 U	1.37E-05 UJ
MW-3	9/14/2016	Primary	0.00476 U	--	0.179 U	--	--	--	--	0.179 U	0.00476 U	--
	12/20/2016	Primary	0.00467 U	--	0.176 U	0.0103 UTA	0.00935 UTA	0.0131 UTA	0.0131 UTA	0.176 U	0.00467 U	--
	12/3/2019	Primary	0.000106 U	--	0.017467	0.00629	0.001618	0.00016	0.008068	--	0.000303	0.00008
	8/12/2020	Primary	2.18E-05 U	--	0.000345	0.003415	0.000931	5.11E-05	0.004397	--	0.000159	0.000045
	3/1/2021	Primary	0.00023	--	0.000196	0.001474	0.000355	1.31E-05 U	0.001842	--	6.69E-05	3.16E-05 J
EAST PARCEL MONITORING WELLS												
MW-35s	11/1/1999	Primary	6 U	--	--	6 UTA	6 UTA	6 UTA	6 UTA	--	--	6 U
MW-7	2/8/2002	Primary	0.1 U	0.1 U	1 U	0.1 UTA	0.1 UTA	0.1 UTA	0.1 UTA	2.5 U	0.1 U	--

Please see notes at end of table.

Table A-5
Pesticides in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Oxychlordan e	cis-Nonachlor	4,4'-Methoxychlor	cis-Heptachlor Epoxide	trans-Heptachlor Epoxide	Hexachloro-benzene	Mirex
PHSS Cleanup Level			--	--	--	--	--	--	--
JSCS Screening Level Value			--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES									
DP-1 (35-40)	12/14/2016	Primary	--	--	--	--	--	--	--
DP-2 (40-45)	12/29/2016	Primary	--	--	--	--	--	--	--
DP-3 (35-40)	12/21/2016	Primary	--	--	--	--	--	--	--
DP-4 (40-45)	1/5/2017	Primary	--	--	--	--	--	--	--
DP-5 (40-45)	1/5/2017	Primary	--	--	--	--	--	--	--
DP-5 (55-60)	1/5/2017	Primary	--	--	--	--	--	--	--
EAST PARCEL GRAB SAMPLES									
SE/E-17	1/26/1988	Primary	--	--	--	--	--	--	--
TRENCH 2	9/28/2010	Primary	--	--	--	--	--	--	--
TRENCH 4	9/29/2010	Primary	--	--	--	--	--	--	--
WEST PARCEL MONITORING WELLS									
MW-1	9/14/2016	Primary	--	--	--	--	--	--	--
	12/20/2016	Primary	--	--	--	--	--	--	--
	12/3/2019	Primary	3.75E-05 U	4.39E-05 U	0.000045 U	2.87E-05 U	0.000118 U	0.000016 J+	1.53E-05 U
	8/11/2020	Primary	1.27E-05 U	1.21E-05 U	0.000178 U	9.36E-06 U	2.06E-05 U	3.45E-05 U	--
	2/24/2021	Primary	1.36E-05 U	9.83E-06 U	3.48E-05 U	1.08E-05 U	0.000025 J	1.73E-05 UJ	--
MW-2	9/14/2016	Primary	--	--	--	--	--	--	--
	12/20/2016	Primary	--	--	--	--	--	--	--
	12/3/2019	Primary	1.69E-05 U	1.72E-05 U	1.07E-05 U	1.15E-05 U	4.76E-05 U	0.000154	4.13E-06 U
	8/11/2020	Primary	1.33E-05 U	1.26E-05 U	0.000186 U	9.79E-06 U	2.16E-05 U	0.000115	--
	2/23/2021	Primary	1.43E-05 U	1.03E-05 U	3.66E-05 U	1.14E-05 U	2.35E-05 U	0.000205 J	--
MW-3	9/14/2016	Primary	--	--	--	--	--	--	--
	12/20/2016	Primary	--	--	--	--	--	--	--
	12/3/2019	Primary	2.93E-05 U	4.03E-05 U	3.43E-05 U	2.57E-05 U	0.000106 U	0.00002 J+	1.85E-05 U
	8/12/2020	Primary	1.34E-05 U	1.27E-05 U	0.000188 U	9.87E-06 U	2.18E-05 U	3.64E-05 U	--
	3/1/2021	Primary	1.43E-05 U	1.45E-05 J	3.67E-05 U	1.14E-05 U	0.000224	1.84E-05 J	--
EAST PARCEL MONITORING WELLS									
MW-35s	11/1/1999	Primary							
MW-7	2/8/2002	Primary							

Please see notes at end of table.

Table A-5
Pesticides in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

- 1. µg/L = micrograms per liter
- 2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
- 3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
- 4. A = Summed value based on limited number of analytes. Calculated according to Appendix A of the Portland Harbor RI/FS, June 2016.
- 5. T = Result derived from >1 reported value. Calculated according to Appendix A of the Portland Harbor RI/FS, June 2016.
- 6. U = Non-detected value.
- 7. J = Estimated value after QA review.
- 8. J+ = Result is estimated and may be biased high.
- 9. UJ = The not detected result is estimated. The reporting limit may be inaccurate or imprecise.
- 10. Shading indicates a concentration equal to or exceeding a screening level

Table A-6
Dioxin/Furans in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDF	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDF	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF
			1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDF	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDF	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF
			Concentration in µg/L												
PHSS Cleanup Level			--	--	--	--	--	--	--	--	--	--	--	--	--
JSCS Screening Level Value			--	--	--	--	--	--	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES															
Total Dioxin/Furans															
DP-1 (35-40)	12/14/2016	Primary	0.00000351 U	0.00000264 U	0.00000482 U	0.000003 U	0.00000296 U	0.0000042 U	0.00000401 U	0.0000057 U	0.00000238 U	0.00000394 U	0.00000343 U	0.00000261 U	0.00000221 U
DP-2 (40-45)	12/29/2016	Primary	0.000826	0.000118	0.0000213 J	0.000003 U	0.0000654	0.0000242 J	0.0000204 J	0.000014 J	0.00000883 J	0.00000394 U	0.00002 J	0.0000103 J	0.0000145 J
DP-3 (35-40)	12/21/2016	Primary	0.0000643	0.0000148 J	0.00000482 U	0.000003 U	0.00000354 E	0.0000042 U	0.00000401 U	0.0000057 U	0.00000238 U	0.00000394 U	0.00000343 U	0.00000261 U	0.00000221 U
DP-4 (40-45)	1/5/2017	Primary	0.00229	0.000733	0.0000583	0.0000127 J	0.0000432	0.000069	0.0000528	0.0000286	0.0000107 J	0.00000658 J	0.00000916 J	0.0000285	0.0000155 J
DP-5 (40-45)	1/5/2017	Primary	0.00187	0.00054	0.0000308	0.0000107 J	0.0000654	0.0000592	0.0000388	0.0000212 J	0.0000123 J	0.00000394 U	0.0000469	0.0000216 J	0.0000313
DP-5 (55-60)	1/5/2017	Primary	0.00000816 J	0.00000264 U	0.00000482 U	0.000003 U	0.00000296 U	0.0000042 U	0.00000401 U	0.0000057 U	0.00000238 U	0.00000394 U	0.00000343 U	0.00000261 U	0.00000221 U
WEST PARCEL MONITORING WELLS															
Total Dioxin/Furans															
MW-1	11/22/2019	Primary	0.000392	0.000221	0.0000103 U	0.00000919 U	0.00000711 U	0.0000112 U	0.00000661 U	0.00000995 U	0.00000986 U	0.00000805 U	0.00000566 U	0.0000073 U	0.00000494 U
	8/11/2020	Primary	0.000073	0.0000531	0.00000638 U	0.00000793 U	0.00000525 U	0.00000716 U	0.00000505 U	0.00000707 U	0.00000672 U	0.00000419 U	0.00000472 U	0.00000473 U	0.00000432 U
	2/24/2021	Primary	0.00001 U	0.0000108 U	0.000013 U	0.00000823 U	0.00000681 U	0.00000846 U	0.00000673 U	0.00000781 U	0.00000872 U	0.0000118 U	0.00000651 U	0.00000693 U	0.00000631 U
MW-2	11/22/2019	Primary	0.000016 U	0.00000561 U	0.00000921 U	0.0000102 U	0.00000626 U	0.0000102 U	0.00000655 U	0.00001 U	0.00000992 U	0.00000875 U	0.00000555 U	0.00000698 U	0.00000469 U
	8/11/2020	Primary	0.000114	0.0000359	0.0000134 U	0.00000972 U	0.0000304	0.00000899 U	0.0000121 U	0.00000876 U	0.000016 U	0.00000641 U	0.0000154 J	0.0000136 U	0.00000883 U
	2/23/2021	Primary	0.000148	0.000057	0.0000105 U	0.00000931 U	0.0000539	0.00000924 U	0.0000184	0.00000865 U	0.00000805 U	0.0000112 U	0.0000113 U	0.00000541 U	0.0000105 U
MW-3	9/14/2016	Primary	0.000151	0.000075	0.00000263 U	0.00000402 U	0.00000515 J	0.00000752 J	0.00000549 J	0.00000471 U	0.00000244 U	0.00000165 U	0.00000273 U	0.00000184 U	0.00000261 U
	12/20/2016	Primary	0.000334	0.00015	0.00000501 J	0.00000213 U	0.00000744 J	0.0000132 J	0.00000764 J	0.0000057 U	0.0000021 U	0.000000952 U	0.00000343 U	0.00000352 U	0.00000312 J
	11/22/2019	Primary	0.000319	0.000115	0.0000148 U	0.0000114 U	0.00000842 U	0.0000127 U	0.00000737 U	0.0000118 U	0.0000124 U	0.00000828 U	0.00000733 U	0.00000814 U	0.00000586 U
	11/22/2019	Duplicate	0.00012	0.0000448	0.0000139 U	0.0000105 U	0.00000646 U	0.0000102 U	0.00000649 U	0.0000101 U	0.0000102 U	0.00000831 U	0.00000518 U	0.00000662 U	0.00000437 U
	8/12/2020	Primary	0.0000509	0.0000218 J	0.00000738 U	0.00000881 U	0.00000548 U	0.00000949 U	0.00000506 U	0.00000855 U	0.00000636 U	0.00000507 U	0.00000543 U	0.00000524 U	0.00000459 U
	3/1/2021	Primary	0.0000372	0.000016 J	0.00000189 U	0.00000411 U	0.00000176 U	0.00000494 U	0.00000155 U	0.00000422 U	0.00000217 U	0.00000351 U	0.0000026 U	0.00000149 U	0.00000228 U
Dissolved Dioxin/Furans															
MW-1	8/11/2020	Primary	0.0000075 U	0.00000674 U	0.00000831 U	0.00000474 U	0.00000337 U	0.00000582 U	0.00000357 U	0.00000493 U	0.00000483 U	0.00000472 U	0.00000447 U	0.00000372 U	0.0000037 U
	2/24/2021	Primary	0.0000133 U	0.0000131 U	0.0000148 U	0.00000591 U	0.00000744 U	0.00000549 U	0.00000785 U	0.00000533 U	0.0000114 U	0.0000127 U	0.00000679 U	0.00000752 U	0.00000728 U
MW-2	8/11/2020	Primary	0.0000414	0.0000123 J	0.000006 U	0.00000646 U	0.00000835 U	0.00000709 U	0.00000745 U	0.00000633 U	0.0000112 U	0.00000607 U	0.00000048 U	0.00000831 U	0.00000443 U
	2/23/2021	Primary	0.0000139 U	0.0000133 U	0.0000167 U	0.00000785 U	0.00000506 U	0.00000824 U	0.0000053 U	0.00000752 U	0.00000734 U	0.0000102 U	0.00000706 U	0.00000518 U	0.00000719 U
MW-3	8/12/2020	Primary	0.00000942 U	0.00000568 U	0.00000672 U	0.00000482 U	0.00000287 U	0.00000567 U	0.00000273 U	0.00000049 U	0.00000388 U	0.000004 U	0.00000422 U	0.00000301 U	0.00000385 U
	3/1/2021	Primary	0.0000037 U	0.00000214 U	0.0000023 U	0.00000272 U	0.00000142 U	0.00000332 U	0.00000152 U	0.00000282 U	0.00000183 U	0.00000292 U	0.00000278 U	0.00000154 U	0.00000235 U
CENTRAL PARCEL MONITORING WELLS															
Total Dioxin/Furans															
MW-5	2/24/2016	Primary	0.00000351 U	0.00000264 U	0.00000482 U	0.000003 U	0.00000296 U	0.0000042 U	0.00000401 U	0.0000057 U	0.00000238 U	0.00000394 U	0.00000343 U	0.00000261 U	0.00000221 U
	6/3/2016	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/15/2016	Primary	0.00000148 U	0.00000101 U	0.00000102 U	0.00000172 U	0.000000487 U	0.00000173 U	0.000000489 U	0.00000179 U	0.000000681 U	0.00000137 U	0.00000127 U	0.000000515 U	0.00000108 U
	12/19/2016	Primary	0.000127	0.0000459	0.0000013 U	0.00000495 J	0.00000128 U	0.0000881	0.00000129 U	0.0000503	0.00000182 U	0.0000105 J	0.0000009 U	0.00000149 U	0.000000763 U
	8/12/2020	Primary	0.00000946 U	0.00000708 U	0.00000734 U	0.00000848 U	0.00000551 U	0.00000944 U	0.00000479 U	0.00000838 U	0.00000639 U	0.0000072 U	0.00000663 U	0.00000491 U	0.00000636 U
	3/1/2021	Primary	0.0000361	0.00000453 U	0.00000545 U	0.00000284 U	0.00000225 U	0.00000325 U	0.00000201 U	0.00000284 U	0.00000305 U	0.00000634 U	0.00000257 U	0.00000201 U	0.00000232 U
MW-6	2/23/2016	Primary	0.00000351 U	0.00000264 U	0.00000482 U	0.000003 U	0.00000296 U	0.0000042 U	0.00000401 U	0.0000057 U	0.00000238 U	0.00000394 U	0.00000343 U	0.00000261 U	0.00000221 U
	9/15/2016	Primary	0.00000128 U	0.000000855 U	0.000000784 U	0.00000182 U	0.000000638 U	0.00000179 U	0.000000673 U	0.00000189 U	0.000001 U	0.00000132 U	0.00000137 U	0.000000699 U	0.00000125 U
	12/19/2016	Primary	0.00000351 U	0.00000061 U	0.000000698 U	0.00000147 U	0.000000657 U	0.00000157 U	0.000000702 U	0.00000161 U	0.000000962 U	0.000000845 U	0.000000947 U	0.000000727 U	0.000000813 U
Dissolved Dioxin/Furans															
MW-5	8/12/2020	Primary	0.00000681 U	0.00000571 U	0.00000655 U	0.00000507 U	0.00000377 U	0.00000559 U	0.00000415 U	0.00000498 U	0.00000597 U	0.00000483 U	0.00000413 U	0.00000378 U	0.00000337 U
	3/1/2021	Primary	0.00000649 U	0.00000281 U	0.00000324 U	0.00000306 U	0.00000156 U	0.00000318 U	0.00000145 U	0.00000292 U	0.00000214 U	0.00000266 U	0.00000212 U	0.00000144 U	0.00000185 U
EAST PARCEL MONITORING WELLS															
Total Dioxin/Furans															
MW-9	8/12/2020	Primary	0.00000799 U	0.00000833 U	0.0000101 U	0.00000522 U	0.00000401 U	0.00000534 U	0.00000411 U	0.00000494 U	0.00000577 U	0.00000467 U	0.00000509 U	0.00000402 U	0.00000441 U
	3/1/2021	Primary	0.00000302 U	0.00000253 U	0.00000298 U	0.00000341 U	0.00000176 U	0.00000387 U	0.00000188 U	0.00000034 U	0.00000229 U	0.00000327 U	0.00000247 U	0.00000194 U	0.00000198 U
Dissolved Dioxin/Furans															
MW-9	8/12/2020	Primary	0.0000052 U	0.00000445 U	0.0000052 U	0.00000488 U	0.00000582 U	0.00000602 U	0.00000549 U	0.00000509 U	0.00000766 U	0.00000729 U	0.00000458 U	0.00000506 U	0.0000042 U
	3/1/2021	Primary	0.00000351 U	0.00000167 U	0.00000227 U	0.00000406 U	0.0000013 U	0.00000506 U	0.00000135 U	0.00000424 U	0.00000172 U	0.00000311 U	0.00000208 U	0.00000143 U	0.00000188 U

Please see notes at end of table.

Table A-6
Dioxin/Furans in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	2,3,7,8-TCDD	2,3,7,8-TCDF	Dioxin/Furan TEQ	OCDD	OCDF	Total HpCDD	Total HpCDF	Total HxCDD	Total HxCDF	Total PeCDD	Total PeCDF	Total TCDD	Total TCDF
			2,3,7,8-TCDD	2,3,7,8-TCDF	Dioxin/Furan TEQ	OCDD	OCDF	Total HpCDD	Total HpCDF	Total HxCDD	Total HxCDF	Total PeCDD	Total PeCDF	Total TCDD	Total TCDF
			Concentration in µg/L												
PHSS Cleanup Level			--	--	--	--	--	--	--	--	--	--	--	--	--
JSCS Screening Level Value			5.1E-09	--	5.1E-09	--	--	--	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES															
Total Dioxin/Furans															
DP-1 (35-40)	12/14/2016	Primary	0.00000108 U	0.000000902 U	0.000000902 UT	0.00000694 U	0.00000705 U	--	--	--	--	--	--	--	--
DP-2 (40-45)	12/29/2016	Primary	0.00000108 U	0.0000135	0.0000335 T	0.0103	0.000372	--	--	--	--	--	--	--	--
DP-3 (35-40)	12/21/2016	Primary	0.00000108 U	0.000000902 U	0.00000105 T	0.000831	0.000044 J	--	--	--	--	--	--	--	--
DP-4 (40-45)	1/5/2017	Primary	0.00000228 E	0.000000902 U	0.0000746 T	0.0224	0.00332	--	--	--	--	--	--	--	--
DP-5 (40-45)	1/5/2017	Primary	0.0000016 E	0.000013	0.0000653 T	0.0179	0.00163	--	--	--	--	--	--	--	--
DP-5 (55-60)	1/5/2017	Primary	0.00000108 U	0.000000902 U	0.000000257 T	0.000094	0.00000749 J	--	--	--	--	--	--	--	--
WEST PARCEL MONITORING WELLS															
Total Dioxin/Furans															
MW-1	11/22/2019	Primary	0.00000412 U	0.00000352 U	0.000003512	0.00382	0.00102	--	--	--	--	--	--	--	--
	8/11/2020	Primary	0.00000213 U	0.00000423 U	0.000001293	0.000628	0.000132	--	--	--	--	--	--	--	--
	2/24/2021	Primary	0.00000268 U	0.00000346 U	0.00000268 U	0.0000393 U	0.0000402 U	--	--	--	--	--	--	--	--
MW-2	11/22/2019	Primary	0.00000462 U	0.00000384 U	2.5302E-06	0.000734	0.0000301 U	--	--	--	--	--	--	--	--
	8/11/2020	Primary	0.00000396 U	0.00000786	3.10494E-06	0.00108	0.0000498 J	--	--	--	--	--	--	--	--
	2/23/2021	Primary	0.00000246 U	0.00000454 U	0.000001611	0.00127	0.0000407 U	--	--	--	--	--	--	--	--
MW-3	9/14/2016	Primary	0.00000108 U	0.00000151 U	0.00000454 T	0.00141	0.000135	--	--	--	--	--	--	--	--
	12/20/2016	Primary	0.000000562 U	0.00000113 U	0.0000101 T	0.00321	0.00029	--	--	--	--	--	--	--	--
	11/22/2019	Primary	0.00000458 U	0.00000378 U	0.000003235 J	0.00315	0.0000459 U	--	--	--	--	--	--	--	--
	11/22/2019	Duplicate	0.00000431 U	0.00000387 U	0.000002614 J	0.00153	0.0000398 U	--	--	--	--	--	--	--	--
	8/12/2020	Primary	0.00000414 U	0.00000453 U	2.2293E-06	0.000486	0.000045	--	--	--	--	--	--	--	--
	3/1/2021	Primary	0.00000157 U	0.00000205 U	9.0479E-07	0.000361	0.0000383 J	--	--	--	--	--	--	--	--
Dissolved Dioxin/Furans															
MW-1	8/11/2020	Primary	0.00000271 U	0.00000355 U	0.00000271 U	0.000017 U	0.0000121 U	--	--	--	--	--	--	--	--
	2/24/2021	Primary	0.00000347 U	0.00000381 U	0.00000347 U	0.000027 U	0.0000286 U	--	--	--	--	--	--	--	--
MW-2	8/11/2020	Primary	0.00000165 U	0.00000379 U	9.396E-07	0.000382	0.0000122 U	--	--	--	--	--	--	--	--
	2/23/2021	Primary	0.00000336 U	0.00000468 U	0.00000336 U	0.0000248 U	0.0000336 U	--	--	--	--	--	--	--	--
MW-3	8/12/2020	Primary	0.00000287 U	0.00000319 U	0.00000287 U	0.0000101 U	0.00000817 U	--	--	--	--	--	--	--	--
	3/1/2021	Primary	0.00000117 U	0.00000243 U	0.00000117 U	0.00001 U	0.0000115 U	--	--	--	--	--	--	--	--
CENTRAL PARCEL MONITORING WELLS															
Total Dioxin/Furans															
MW-5	2/24/2016	Primary	0.00000108 U	0.000000902 U	0.000000902 UT	0.00000694 U	0.00000705 U	0.00000129 U	0.000000822 U	0.000000867 U	0.00000091 U	0.000000827 U	0.000000558 U	0.000000487 U	0.00000033 U
	6/3/2016	Primary	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/15/2016	Primary	0.000000862 U	0.00000137 U	0.000000487 UT	0.00000165 U	0.00000218 U	--	--	--	--	--	--	--	--
	12/19/2016	Primary	0.000000893 U	0.000000744 U	0.0000266 T	0.000107	0.0000212 J	--	--	--	--	--	--	--	--
	8/12/2020	Primary	0.00000305 U	0.00000365 U	0.00000305 U	0.0000128 U	0.0000104 U	--	--	--	--	--	--	--	--
	3/1/2021	Primary	0.00000231 U	0.00000244 U	1.2888E-06	0.000446	0.0000234 U	--	--	--	--	--	--	--	--
MW-6	2/23/2016	Primary	0.00000108 U	0.000000902 U	0.000000902 UT	0.00000694 U	0.00000705 U	0.000000808 U	0.000000774 U	0.000000647 U	0.000000706 U	0.000000701 U	0.000000436 U	0.000000509 U	0.000000341 U
	9/15/2016	Primary	0.000000929 U	0.00000133 U	0.000000638 UT	0.00000215 U	0.00000266 U	--	--	--	--	--	--	--	--
	12/19/2016	Primary	0.000000616 U	0.000000815 U	0.00000694 UT	0.00000694 U	0.00000162 U	--	--	--	--	--	--	--	--
Dissolved Dioxin/Furans															
MW-5	8/12/2020	Primary	0.00000299 U	0.0000035 U	0.00000299 U	0.0000158 U	0.0000171 U	--	--	--	--	--	--	--	--
	3/1/2021	Primary	0.00000152 U	0.00000224 U	0.00000152 U	0.00000765 U	0.0000107 U	--	--	--	--	--	--	--	--
EAST PARCEL MONITORING WELLS															
Total Dioxin/Furans															
MW-9	8/12/2020	Primary	0.00000354 U	0.00000461 U	0.00000354 U	0.0000138 U	0.0000173 U	--	--	--	--	--	--	--	--
	3/1/2021	Primary	0.00000155 U	0.00000301 U	0.00000155 U	0.0000127 U	0.0000107 U	--	--	--	--	--	--	--	--
Dissolved Dioxin/Furans															
MW-9	8/12/2020	Primary	0.00000372 U	0.00000315 U	0.00000372 U	0.0000113 U	0.0000136 U	--	--	--	--	--	--	--	--
	3/1/2021	Primary	0.00000171 U	0.00000197 U	0.00000171 U	0.0000114 U	0.0000104 U	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-6
Dioxin/Furans in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

- 1. µg/L = micrograms per liter
- 2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
- 3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
- 4. E = above the high calibration limit
- 5. J = Estimated value after QA review.
- 6. T = Result derived from >1 reported value. Calculated according to Appendix A of the Portland Harbor RI/FS, June 2016.
- 7. U = Non-detected value.
- 8. Shading indicates a concentration equal to or exceeding a screening level

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES																				
Sample ID	PHSS	JSCS	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	SE/E-11	SE/E-12	SE/E-13	TB-1W
Date	Cleanup	Screening	5/8/2001	5/11/2001	5/10/2001	5/8/2001	5/10/2001	5/11/2001	5/10/2001	5/11/2001	12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	12/6/1988	12/9/1988	12/9/1988	10/20/1995
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,1,1,2-Tetrachloroethane	--	2.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,1,1-Trichloroethane	--	11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,1,2,2-Tetrachloroethane	--	0.33	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,1,2-Trichloroethane	--	1.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,1-Dichloroethane	--	47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,1-Dichloroethene	7	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,1-Dichloropropene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,2,3-Trichlorobenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
1,2,3-Trichloropropane	--	0.0095	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,2,4-Trichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,2,4-Trimethylbenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
1,2-Dibromo-3-chloropropane	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	2 U
1,2-Dibromoethane	--	0.033	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
1,2-Dichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,2-Dichloroethane	--	0.73	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,2-Dichloropropane	--	0.97	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,3,5-Trimethylbenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
1,3-Dichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,3-Dichloropropane	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
1,4-Dichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
2,2-Dichloropropane	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
2-Butanone	--	7100	10 U	10 U	10 U	10 U	10 U	19.7	10 U	10 U	--	--	--	--	--	--	--	--	--	20 U
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
2-Hexanone	--	99	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	--	--	20 U
2-Propanol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
4-Methyl-2-pentanone	--	170	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	20 U
Acetone	--	1500	10 U	10 U	10 U	10 U	10 U	134	10 U	10 U	--	--	--	--	--	--	--	--	--	20 U
Benzene	0.44	--	1 U	1 U	1 U	1 U	1 U	1.25	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Bromobenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Bromochloromethane	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Bromodichloromethane	--	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Bromoform	--	8.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Bromomethane	--	8.7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	0.5 U
Carbon disulfide	--	0.92	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	--	--	0.5 U
Carbon tetrachloride	--	0.51	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Chlorobenzene	64	--	1 U	1 U	1 U	1 U	1 U	17.3	2.32	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Chloroethane	--	23	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Chloroform	--	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Chloromethane	--	2.1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	0.5 U
cis-1,2-Dichloroethene	70	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
cis-1,3-Dichloropropene	--	0.055	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Dibromochloromethane	--	0.79	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Dibromomethane	--	61	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Dichlorodifluoromethane	--	390	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	0.5 U
Ethylbenzene	7.3	--	1 U	1 U	1 U	1 U	1 U	1 U	1.06	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Hexachlorobutadiene	--	--	2 U	2 U	2 U	10 U	10 UJ	2 U	2 U	2 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
Isopropylbenzene	--	660	2 U	2 U	2 U	2 U	2 U	2 U	2.03	2 U	--	--	--	--	--	--	--	--	--	2 U
m,p-Xylene	--	1.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	0.5 U
Methylene chloride	--	8.9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	1 U
Methyl-tert-butyl-ether	--	37	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--
Naphthalene	12	--	0.283	0.1 U	0.216	0.563	0.1 U	2 U	4.53	0.1 U	0.0762 U	1.13 J	0.0384 J	0.0816 U	0.737	0.109 B	10 U	10 U	10 U	1 U
n-Butylbenzene	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	2 U
n-Propylbenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
o-Xylene	--	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
p-Isopropyltoluene	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	2 U
sec-Butylbenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
Styrene	--	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
tert-Butylbenzene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
Tetrachloroethene	0.24	--	1 U	9.66	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	1
Toluene	9.8	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Total Xylenes	13	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	0.5 U
trans-1,2-Dichloroethene	--	110	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
trans-1,3-Dichloropropene	--	0.055	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Trichloroethene	0.6	--	1 U	2.36	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	25
Trichlorofluoromethane	--	1300	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U
Vinyl acetate	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.022	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	0.5 U

Please see notes at end of table.

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL GRAB SAMPLES																				
Sample ID	PHSS	JSCS	B-10	B-11	B-12	B-13	B-14	B-15	B-16	B-17	B-18	B-20	B-9	SE/E-10	SE/E-7	SE/E-8	SE/E-9	TB-2W	WC-4	WC-5
Date	Cleanup	Screening	5/15/2001	5/15/2001	5/14/2001	5/14/2001	5/14/2001	5/14/2001	5/7/2001	5/8/2001	5/7/2001	5/7/2001	5/15/2001	12/8/1988	12/7/1988	12/7/1988	12/8/1988	10/19/1995	9/30/2010	9/30/2010
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,1,1,2-Tetrachloroethane	--	2.5	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.15 U	0.15 U
1,1,1-Trichloroethane	--	11	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	--	0.33	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.22 U	0.22 U
1,1,2-Trichloroethane	--	1.2	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.19 U	0.19 U
1,1-Dichloroethane	--	47	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.23 U	0.28 J
1,1-Dichloroethene	7	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.12 U	0.12 U
1,1-Dichloropropene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.094 U	0.094 U
1,2,3-Trichlorobenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.11 U	0.11 U
1,2,3-Trichloropropane	--	0.0095	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.37 U	0.37 U
1,2,4-Trichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.15 U	0.15 U
1,2,4-Trimethylbenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.086 U	0.086 U
1,2-Dibromo-3-chloropropane	--	--	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	2 U	0.79 U	0.79 U
1,2-Dibromoethane	--	0.033	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	--	--
1,2-Dichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.25 U	0.25 U
1,2-Dichloroethane	--	0.73	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.074 U	0.074 U
1,2-Dichloropropane	--	0.97	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.16 U	0.16 U
1,3,5-Trimethylbenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.16 U	0.16 U
1,3-Dichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.16 U	0.16 U
1,3-Dichloropropane	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.22 U	0.22 U
1,4-Dichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.2 U	0.2 U
2,2-Dichloropropane	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.27 U	0.27 U
2-Butanone	--	7100	10 U	--	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	--	--	--	--	20 U	1.6 U	1.6 U
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.098 U	0.098 U
2-Hexanone	--	99	10 U	--	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	--	--	--	--	20 U	0.57 U	0.57 U
2-Propanol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.13 U	0.13 U
4-Methyl-2-pentanone	--	170	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	20 U	0.32 U	0.32 U
Acetone	--	1500	10 U	--	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	--	--	--	--	20 U	0.75 U	0.75 U
Benzene	0.44	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.12 U	0.12 U
Bromobenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.16 U	0.16 U
Bromochloromethane	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.34 U	0.34 U
Bromodichloromethane	--	1.1	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.11 U	0.11 U
Bromoform	--	8.5	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.23 U	0.23 U
Bromomethane	--	8.7	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	0.5 U	0.072 U	0.072 U
Carbon disulfide	--	0.92	10 U	--	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	--	--	--	--	0.5 U	0.16 U	0.16 U
Carbon tetrachloride	--	0.51	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.25 U	0.25 U
Chlorobenzene	64	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.12 U	0.12 U
Chloroethane	--	23	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.27 U	0.27 U
Chloroform	--	0.17	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.15 U	0.15 U
Chloromethane	--	2.1	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	0.5 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	70	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.32 U	0.32 U
cis-1,3-Dichloropropene	--	0.055	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.086 U	0.086 U
Dibromochloromethane	--	0.79	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.12 U	0.12 U
Dibromomethane	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.18 U	0.18 U
Dichlorodifluoromethane	--	390	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	0.5 U	0.19 U	0.19 U
Ethylbenzene	7.3	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.2 U	0.2 U
Hexachlorobutadiene	--	--	2 U	--	10 U	--	2 U	2 U	2 U	10 U	10 U	2 U	2 U	--	--	--	--	10 U	0.27 U	0.27 U
Isopropylbenzene	--	660	2 U	--	2 U	--	2 U	2 U	2 U	2 U	--	2 U	2 U	--	--	--	--	2 U	0.11 U	0.11 U
m,p-Xylene	--	1.8	2 U	--	2 U	--	2 U	2 U	2 U	2 U	--	2 U	2 U	--	--	--	--	0.5 U	0.27 U	0.27 U
Methylene chloride	--	8.9	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	1 U	0.26 U	0.26 U
Methyl-tert-butyl-ether	--	37	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	--	0.16 U	0.16 U
Naphthalene	12	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	2 U	0.269	0.1 U	5 U	0.201	0.1 U	10 U	10 U	10 U	10 U	1 U	0.028 B	0.044 B
n-Butylbenzene	--	--	5 U	--	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	2 U	0.1 U	0.1 U
n-Propylbenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.16 U	0.16 U
o-Xylene	--	13	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.15 U	0.15 U
p-Isopropyltoluene	--	--	2 U	--	2 U	--	2 U	2 U	2 U	2 U	--	2 U	4.65	--	--	--	--	2 U	0.074 U	0.074 U
sec-Butylbenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.1 U	0.1 U
Styrene	--	100	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.074 U	0.074 U
tert-Butylbenzene	--	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	2 U	0.11 U	0.11 U
Tetrachloroethene	0.24	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.1 U	0.1 U
Toluene	9.8	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.21 U	0.21 U
Total Xylenes	13	--	2 U	--	2 U	--	2 U	2 U	2 U	2 U	--	2 U	2 U	--	--	--	--	0.5 U	0.42 U	0.42 U
trans-1,2-Dichloroethene	--	110	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.22 U	0.22 U
trans-1,3-Dichloropropene	--	0.055	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.16 U	0.16 U
Trichloroethene	0.6	--	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.06 U	0.06 U
Trichlorofluoromethane	--	1300	1 U	--	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	--	--	--	--	0.5 U	0.24 U	0.24 U
Vinyl acetate	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.022	--	1 U	--	1 U															

Please see notes at end of table.

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL GRAB SAMPLES						EAST PARCEL GRAB SAMPLES															
Sample ID	PHSS	JSCS	WC-6	WC-7	WC-8	B-21	B-23	B-25	B-26	B-27	B-28	B-29	B-30	HA-4	SE/E-1	SE/E-17	SE/E-2	SE/E-3	SE/E-4	SE/E-5	SE/E-6
Date	Cleanup	Screening	9/30/2010	9/29/2010	9/29/2010	5/7/2001	5/15/2001	5/7/2001	5/11/2001	5/11/2001	5/17/2001	5/17/2001	5/17/2001	12/12/1988	12/5/1988	1/26/1988	12/5/1988	12/6/1988	12/6/1988	12/6/1988	12/7/1988
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																					
1,1,1,2-Tetrachloroethane	--	2.5	0.15 U	0.15 U	0.15 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	11	0.2 U	0.2 U	0.2 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,1,2,2-Tetrachloroethane	--	0.33	0.22 U	0.22 U	0.22 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,1,2-Trichloroethane	--	1.2	0.19 U	0.19 U	0.19 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,1-Dichloroethane	--	47	0.23 U	0.23 U	0.23 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,1-Dichloroethene	7	--	0.12 U	0.12 U	0.12 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,1-Dichloropropene	--	--	0.094 U	0.094 U	0.094 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	--	--	0.11 U	0.11 U	0.11 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	0.0095	0.37 U	0.37 U	0.37 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	0.15 U	0.15 U	0.15 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	--	1 U	--	--	--	1 U
1,2,4-Trimethylbenzene	--	--	0.086 U	0.086 U	0.086 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	--	--	0.79 U	0.79 U	0.79 U	5 U	--	5 U	--	5 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	--	0.033	--	--	--	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	0.25 U	0.25 U	0.25 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	1 U	3 U	--	--	--	3 U
1,2-Dichloroethane	--	0.73	0.074 U	0.074 U	0.074 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,2-Dichloropropane	--	0.97	0.16 U	0.16 U	0.16 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
1,3,5-Trimethylbenzene	--	--	0.16 U	0.16 U	0.16 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	0.16 U	0.16 U	0.16 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	1 U	3 U	--	--	--	3 U
1,3-Dichloropropane	--	--	0.22 U	0.22 U	0.22 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	1 U	3 U	--	--	--	3 U
2,2-Dichloropropane	--	--	0.27 U	0.27 U	0.27 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	--	7100	1.6 U	1.6 U	1.6 U	10 U	--	10 U	--	10 U	--	--	--	--	--	--	10 U	--	--	--	10 U
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--	--	10 U
2-Chlorotoluene	--	--	0.098 U	0.098 U	0.098 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	--	99	0.57 U	0.57 U	0.57 U	10 U	--	10 U	--	10 U	--	--	--	--	--	--	10 U	--	--	--	10 U
2-Propanol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	0.13 U	0.13 U	0.13 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	--	170	0.32 U	0.32 U	0.32 U	5 U	--	5 U	--	5 U	--	--	--	--	--	--	10 U	--	--	--	10 U
Acetone	--	1500	0.75 U	0.75 U	0.75 U	10 U	--	10 U	--	10 U	--	--	--	--	--	--	10 U	--	--	--	10 U
Benzene	0.44	--	0.12 U	0.12 U	0.12 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	1 U	--	--	--	1 U
Bromobenzene	--	--	0.16 U	0.16 U	0.16 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	--	--	0.34 U	0.34 U	0.34 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	--	1.1	0.11 U	0.11 U	0.11 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Bromoform	--	8.5	0.23 U	0.23 U	0.23 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Bromomethane	--	8.7	0.072 U	0.072 U	0.072 U	5 U	--	5 U	--	5 U	--	--	--	--	--	3 U	1 U	--	--	--	1 U
Carbon disulfide	--	0.92	0.23 U	0.16 U	0.16 U	10 U	--	10 U	--	10 U	--	--	--	--	--	--	1 U	--	--	--	1 U
Carbon tetrachloride	--	0.51	0.25 U	0.25 U	0.25 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Chlorobenzene	64	--	0.12 U	0.12 U	0.12 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Chloroethane	--	23	0.27 U	0.27 U	0.27 U	1 U	--	1 U	--	1 U	--	--	--	--	--	3 U	1 U	--	--	--	1 U
Chloroform	--	0.17	0.15 U	0.15 U	0.15 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Chloromethane	--	2.1	0.2 U	0.2 U	0.2 U	5 U	--	5 U	--	5 U	--	--	--	--	--	3 U	1 U	--	--	--	1 U
cis-1,2-Dichloroethene	70	--	0.32 U	0.32 U	0.32 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--
cis-1,3-Dichloropropene	--	0.055	0.086 U	0.086 U	0.086 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Dibromochloromethane	--	0.79	0.12 U	0.12 U	0.12 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Dibromomethane	--	--	0.18 U	0.18 U	0.18 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	--	390	0.19 U	0.19 U	0.19 U	5 U	--	5 U	--	5 U	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7.3	--	0.2 U	0.2 U	0.2 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	1 U	--	--	--	1 U
Hexachlorobutadiene	--	--	0.27 U	0.27 U	0.27 U	2 U	--	2 U	23.5 U	2 U	10 U	10 U	10 U	--	--	--	3 U	--	--	--	3 U
Isopropylbenzene	--	660	0.11 U	0.11 U	0.11 U	2 U	--	2 U	--	2 U	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	1.8	0.27 U	0.27 U	0.27 U	2 U	--	2 U	--	2 U	--	--	--	--	--	--	1 U	--	--	--	1 U
Methylene chloride	--	8.9	0.26 U	0.26 U	0.26 U	5 U	--	5 U	--	5 U	--	--	--	--	--	1 U	5 U	--	--	--	5 U
Methyl-tert-butyl-ether	--	37	0.16 U	0.16 U	0.16 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	12	--	0.02 B	0.039 B	0.12 B	2 U	0.1 U	2 U	0.1 U	0.1 U	0.1 U	0.1 U	35.6	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U
n-Butylbenzene	--	--	0.1 U	0.1 U	0.1 U	5 U	--	5 U	--	5 U	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	--	--	0.16 U	0.16 U	0.16 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	--	13	0.15 U	0.15 U	0.15 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	1 U	--	--	--	1 U
p-Isopropyltoluene	--	--	0.074 U	0.074 U	0.074 U	2 U	--	2 U	--	2 U	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	--	--	0.1 U	0.1 U	0.1 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Styrene	--	100	0.074 U	0.074 U	0.074 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	1 U	--	--	--	1 U
tert-Butylbenzene	--	--	0.11 U	0.11 U	0.11 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.24	--	0.1 U	0.1 U	0.1 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Toluene	9.8	--	0.21 U	0.21 U	0.21 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	1 U	--	--	--	1 U
Total Xylenes	13	--	0.42 U	0.42 U	0.42 U	2 U	--	2 U	--	2 U	--	--	--	--	--	--	1 U	--	--	--	1 U
trans-1,2-Dichloroethene	--	110	0.22 U	0.22 U	0.22 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
trans-1,3-Dichloropropene	--	0.055	0.16 U	0.16 U	0.16 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Trichloroethene	0.6	--	0.06 U	0.06 U	0.06 U	1 U	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	--	1 U
Trichlorofluoromethane	--	1300	0.24 U	0.24 U	0.24 U	1 U	--	1 U	--	1 U	--	--	--	--	--	--	1 U	--	--	--	1 U
Vinyl acetate	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	10 U
Vinyl chloride	0.022	--	0.05 U	0.05 U	0.05 U	1 U	--	1 U	--	1 U	--	--	--	--	--	3 U	1 U	--	--	--	1 U

Please see notes at end of table.

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL GRAB SAMPLES							WEST PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	TB-3W	TB-4W	TRENCH 2	TRENCH 4	MW-1								MW-2						
			10/19/1995 Primary	10/19/1995 Primary	9/28/2010 Primary	9/29/2010 Primary	2/7/2002 Primary	5/28/2002 Primary	8/30/2005 Primary	12/16/2005 Primary	2/23/2016 Primary	6/3/2016 Primary	9/14/2016 Primary	12/20/2016 Primary	2/7/2002 Primary	5/28/2002 Primary	8/30/2005 Primary	12/16/2005 Primary	2/23/2016 Primary	6/3/2016 Primary	9/14/2016 Primary
Concentration in µg/L																					
1,1,1,2-Tetrachloroethane	--	2.5	0.5 U	0.5 U	0.15 U	0.15 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,1,1-Trichloroethane	--	11	0.5 U	0.5 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	--	0.33	0.5 U	0.5 U	0.22 U	0.22 U	1 U	1 U	1 U	1 U	0.5 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.5 U	0.25 U	0.25 U
1,1,2-Trichloroethane	--	1.2	0.5 U	0.5 U	0.19 U	0.19 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethane	--	47	0.5 U	0.5 U	0.23 U	0.23 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	7	--	0.5 U	0.5 U	0.12 U	0.12 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,1-Dichloropropene	--	--	0.5 U	0.5 U	0.094 U	0.094 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	--	--	2 U	2 U	0.11 U	0.11 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	--	0.0095	0.5 U	0.5 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U	1 U	0.5 U	1 U	0.5 U	10 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	--	--	10 U	10 U	0.15 U	0.15 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	10 U	1 U	1 U	1 U	0.19 U	0.0962 U	0.125 U
1,2,4-Trimethylbenzene	--	--	2 U	2 U	0.086 U	0.086 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1.64	1.05	1	0.65 J	0.5 J	0.5 U
1,2-Dibromo-3-chloropropane	--	--	2 U	2 U	0.79 U	0.79 U	5 U	5 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	50 U	5 U	5 U	5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane	--	0.033	2 U	2 U	--	--	1 U	1 U	1 U	1 U	0.02 UH	0.01 U	0.01 UQ	0.01 U	10 U	1 U	1 U	1 U	0.02 UH	0.01 U	0.01 U
1,2-Dichlorobenzene	--	--	10 U	10 U	0.25 U	0.25 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	10 U	1 U	1 U	1 U	0.19 U	0.0962 U	0.125 U
1,2-Dichloroethane	--	0.73	0.5 U	0.5 U	0.074 U	0.074 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	--	0.97	0.5 U	0.5 U	0.16 U	0.16 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
1,3,5-Trimethylbenzene	--	--	2 U	2 U	0.16 U	0.16 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	--	--	10 U	10 U	0.16 U	0.16 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	10 U	1 U	1 U	1 U	0.19 U	0.0962 U	0.125 U
1,3-Dichloropropane	--	--	0.5 U	0.5 U	0.22 U	0.22 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	--	--	10 U	10 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	10 U	1 U	1 U	1 U	0.19 U	0.0962 U	0.125 U
2,2-Dichloropropane	--	--	0.5 U	0.5 U	0.27 U	0.27 U	1 U	1 U	1 U	1 U	0.5 U	0.5 UJ	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 UJ	0.5 U
2-Butanone	--	7100	20 U	20 U	1.6 U	1.6 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	2 U	2 U	0.098 U	0.098 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
2-Hexanone	--	99	20 U	20 U	0.57 U	0.57 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	100 U	10 U	10 U	10 U	5 U	5 U	5 U
2-Propanol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	2 U	2 U	0.13 U	0.13 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-pentanone	--	170	20 U	20 U	0.32 U	0.32 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	--	1500	20 U	20 U	5.9	3.8 J	25 U	25 U	25 U	25 U	10 U	20 U	10 U	10 U	250 U	25 U	25 U	34.3	33.3	22.9	44.6
Benzene	0.44	--	0.5 U	0.5 U	0.12 U	0.12 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	10 U	1 U	1 U	1 U	0.493	0.57	0.344
Bromobenzene	--	--	0.5 U	0.5 U	0.16 U	0.16 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
Bromochloromethane	--	--	0.5 U	0.5 U	0.34 U	0.34 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	--	1.1	0.5 U	0.5 U	0.11 U	0.11 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromoform	--	8.5	0.5 U	0.5 U	0.23 U	0.23 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Bromomethane	--	8.7	0.5 U	0.5 U	0.072 U	0.072 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	--	0.92	0.5 U	0.5 U	0.16 U	0.16 U	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	--	--	--
Carbon tetrachloride	--	0.51	0.5 U	0.5 U	0.25 U	0.25 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	64	--	0.5 U	0.5 U	0.12 U	0.12 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	45.2	12.6	64.4	86.6	4.42 R	4.74	7.43
Chloroethane	--	23	0.5 U	0.5 U	0.27 U	0.27 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	10 U	1 U	1 U	1 U	66 U	12 U	5 U
Chloroform	--	0.17	0.5 U	0.5 U	0.15 U	0.15 U	1 U	1 U	1 U	1 U	0.1 UH	0.05 U	0.1 UQ	0.05 U	10 U	1 U	1 U	1 U	0.1 UH	0.05 U	0.1 U
Chloromethane	--	2.1	0.5 U	0.5 U	0.2 U	0.2 U	5 U	5 U	5 U	5 U	1 UH	0.5 U	0.5 U	0.5 U	50 U	5 U	5 U	5 U	1 UH	0.5 U	1.6 U
cis-1,2-Dichloroethene	70	--	0.5 U	0.5 U	0.32 U	0.32 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
cis-1,3-Dichloropropene	--	0.055	0.5 U	0.5 U	0.086 U	0.086 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U
Dibromochloromethane	--	0.79	0.5 U	0.5 U	0.12 U	0.12 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Dibromomethane	--	--	0.5 U	0.5 U	0.18 U	0.18 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	--	390	0.5 U	0.5 U	0.19 U	0.19 U	5 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	50 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	7.3	--	0.5 U	0.5 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U
Hexachlorobutadiene	--	--	10 U	10 U	0.27 U	0.27 U	2 U	2 U	4 U	4 U	0.19 U	0.1 U	0.0952 U	0.0935 U	20 U	2 U	4 U	4 U	0.19 U	0.0962 U	0.125 U
Isopropylbenzene	--	660	2 U	2 U	0.11 U	0.11 U	2 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	--	1.8																			

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS																				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5						MW-6								MW-8			
			8/29/2005	12/15/2005	2/24/2016	6/3/2016	9/15/2016	12/19/2016	2/8/2002	5/29/2002	8/30/2005	12/15/2005	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,1,1,2-Tetrachloroethane	--	2.5	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,1-Trichloroethane	--	11	--	--	0.25 U	0.25 U	0.32	0.31 J	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.277 J	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	--	0.33	--	--	0.5 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.5 U	0.25 U	0.25 U	0.25 U	0.5 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloroethane	--	1.2	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethane	--	47	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.316	0.25 U
1,1-Dichloroethene	7	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloropropene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	--	0.0095	--	--	1 U	0.5 U	0.5 U	0.5 U	--	--	--	--	1 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	--	--	--	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U
1,2,4-Trimethylbenzene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	--	--	--	--	2.5 U	2.5 U	2.5 U	2.5 U	--	--	--	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane	--	0.033	--	--	0.25 U	0.01 U	0.01 U	0.01 U	--	--	--	--	0.02 UH	0.01 U	0.01 U	0.01 U	0.02 UH	0.01 UH	0.01 U	0.01 U
1,2-Dichlorobenzene	--	--	--	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U
1,2-Dichloroethane	--	0.73	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	--	0.97	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trimethylbenzene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	--	--	--	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U
1,3-Dichloropropane	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	--	--	--	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U
2,2-Dichloropropane	--	--	--	--	0.5 U	0.5 UJ	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	--	7100	--	--	5 U	5 U	5 U	5 U	--	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	--	99	--	--	5 U	5 U	5 U	5 U	--	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Propanol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-pentanone	--	170	--	--	5 U	5 U	5 U	5 U	--	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	--	1500	--	--	10 U	10 U	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	57.3	10 U	10 U	10 U
Benzene	0.44	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromobenzene	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromochloromethane	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	--	1.1	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	--	8.5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	--	8.7	--	--	5 U	5 U	5 U	5 U	--	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	--	0.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	--	0.51	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	64	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloroethane	--	23	--	--	5 U	5 U	5 U	5 U	--	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	--	0.17	--	--	0.5 U	0.05 U	0.1 U	0.05 U	--	--	--	--	0.1 UH	0.05 U	0.1 U	0.05 U	0.1 UH	0.05 U	0.1 U	0.05 U
Chloromethane	--	2.1	--	--	2.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	1 UH	2.22	0.5 U	0.5 U	1 UH	2 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	70	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,3-Dichloropropene	--	0.055	--	--	1 U	0.5 U	0.5 U	0.5 U	--	--	--	--	1 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	--	0.79	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	--	--	61	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	--	390	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	7.3	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachlorobutadiene	--	--	--	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U
Isopropylbenzene	--	660	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	--	1.8	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	--	8.9	--	--	1.5 U	1.5 U	1.5 U	1.5 U	--	--	--	--	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Methyl-tert-butyl-ether	--	37	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	12	--	0.1 U	0.102 U	0.0385 U	0.019 U	0.019 U	0.0187 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0381 U	0.019 U	0.0213 JX	0.0187 U	0.0385 U	0.019 U	0.019 U	0.037 U
n-Butylbenzene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
o-Xylene	--	13	--	--	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
p-Isopropyltoluene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	--	0.5 U	0.5 U	0.5 U					

Please see notes at end of table.

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS															
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-35s	MW-7					MW-9						
			11/1/1999	2/24/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	12/20/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary
Concentration in µg/L															
1,1,1,2-Tetrachloroethane	--	2.5	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,1-Trichloroethane	--	11	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	--	0.33	0.5 U	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.5 U	--	0.20 U	0.20 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloroethane	--	1.2	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethane	--	47	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	7	--	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloropropene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	--	--	0.5 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	--	0.0095	--	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	--	--	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,2,4-Trimethylbenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	--	--	0.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane	--	0.033	0.5 U	0.02 UH	0.01 U	0.01 U	0.01 U	0.02 UH	0.02 UH	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dichlorobenzene	--	--	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,2-Dichloroethane	--	0.73	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichloropropane	--	0.97	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3,5-Trimethylbenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	--	--	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,3-Dichloropropane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	--	--	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
2,2-Dichloropropane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	--	7100	50 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloroethylvinyl ether	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	--	99	--	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
2-Propanol	--	--	1.5 U	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-pentanone	--	170	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	--	1500	--	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	0.44	--	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromobenzene	--	--	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	1.25 U	1.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromochloromethane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	--	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	--	8.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	--	8.7	0.5 U	5 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	--	0.92	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	--	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	64	--	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chloroethane	--	23	0.5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	--	0.17	0.5 U	0.1 UH	0.05 U	0.1 U	0.05 U	0.1 UH	0.1 UH	0.05 U	0.05 U	0.1 U	0.1 U	0.05 U	0.05 U
Chloromethane	--	2.1	0.5 U	1 UH	0.5 U	0.5 U	0.5 U	1 UH	1 UH	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	70	--	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,3-Dichloropropene	--	0.055	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	--	0.79	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	--	390	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.25 U	0.25 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	7.3	--	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachlorobutadiene	--	--	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Isopropylbenzene	--	660	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	--	1.8	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	--	8.9	0.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	--	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Methyl-tert-butyl-ether	--	37	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	12	--	1 U	0.0385 U	0.019 U	0.019 U	0.0374 U	0.0381 U	0.381 U	0.019 U	0.0206 U	0.019 U	0.019 U	0.0187 U	0.0187 U
n-Butylbenzene	--	--	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	--	--	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
o-Xylene	--	13	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
p-Isopropyltoluene	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	--	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
tert-Butylbenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.24	--	0.5 U	0.2 UH	0.2 U	0.1 U	0.1 U	0.2 UH	0.2 UH	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
Toluene	9.8	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total Xylenes	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	--	110	0.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
trans-1,3-Dichloropropene	--	0.055	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.6	--	0.5 U	0.2 UH	0.2 U	0.1 U	0.1 U	0.2 UH	0.2 UH	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
Trichlorofluoromethane	--	1300	0.5 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.022	--	0.5 U	0.02 UH	0.01 U	0.01 U	0.01 U	0.02 UH	0.02 UH	0.5 U	0.5 U	0.01 U	0.01 U	0.01 U	0.01 U

Please see notes at end of table.

Table A-7
VOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

- 1. µg/L = micrograms per liter
- 2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
- 3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
- 4. H = Sample was analyzed outside recommended holding time at client request.
- 5. J = Estimated value after QA review.
- 6. R = the reporting limit for this analyte has been raised
- 7. U = Non-detected value.
- 8. Shading indicates a concentration equal to or exceeding a screening level
- 9. VOCs = Volatile Organic Compounds

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES																				
Sample ID	PHSS	JSCS	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	SE/E-11	SE/E-12	SE/E-13	TB-1W
Date	Cleanup	Screening	5/8/2001	5/11/2001	5/10/2001	5/8/2001	5/10/2001	5/11/2001	5/10/2001	5/11/2001	12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	12/6/1988	12/9/1988	12/9/1988	10/20/1995
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,2-Dichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,2-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	0.952 U	0.952 U	0.234 U	1.02 U	0.98 U	0.234 U	--	--	--	--
1,3-Dichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,3-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	0.952 U	0.952 U	0.234 U	1.02 U	0.98 U	0.234 U	--	--	--	--
1,4-Dichlorobenzene	--	--	1 U	1 U	1 U	5 U	5 UJ	1 U	1 U	1 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
1,4-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	0.952 U	0.952 U	0.234 U	1.02 U	0.98 U	0.234 U	--	--	--	--
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	0.0762 U	0.885 J	0.0373 J	0.454	1.07	0.0441	--	--	--	--
2,3,4,6-Tetrachlorophenol	--	1100	--	--	--	--	--	--	--	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	--
2,3,5,6-Tetrachlorophenol	--	--	--	--	--	--	--	--	--	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.189 J	0.0467 U	--	--	--	--
2,4,5-Trichlorophenol	--	3600	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	10 U
2,4,6-Trichlorophenol	--	2.4	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	10 U
2,4-Dichlorophenol	--	110	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.19 U	0.217 J	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	10 U
2,4-Dimethylphenol	--	730	--	25 U	25 U	25 U	10 UJ	--	25 U	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.278 J	0.0467 U	--	--	--	10 U
2,4-Dinitrophenol	--	73	--	62.5 U	62.5 U	62.5 U	25 UJ	--	62.5 U	--	0.952 U	0.952 U	0.234 U	1.02 U	0.98 U	0.234 U	--	--	--	25 U
2,4-Dinitrotoluene	--	3.4	--	--	--	5 U	5 UJ	--	--	--	0.381 U	0.381 U	0.0935 U	0.408 U	0.392 U	0.0935 U	--	--	--	10 U
2,6-Dichlorophenol	--	37	--	25 U	25 U	25 U	25 U	--	25 U	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	490	--	--	--	5 U	5 UJ	--	--	--	1.9 U	1.14 U	0.841 U	2.24 U	0.392 U	2.43 U	--	--	--	10 U
2-Chloronaphthalene	--	--	--	--	--	5 U	5 UJ	--	--	--	0.0381 U	0.0381 U	0.0094 U	0.0408 U	0.0392 U	0.0094 U	--	--	--	10 U
2-Chlorophenol	--	30	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	10 U
2-methyl-4,6-dinitrophenol	--	150	--	62.5 U	62.5 U	10 U	10 UJ	--	62.5 U	--	0.952 U	0.952 U	0.234 U	1.02 U	0.98 U	0.234 U	--	--	--	25 U
2-Methylphenol	--	13	--	--	--	10 U	10 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
2-Nitroaniline	--	110	--	--	--	5 U	5 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.187 U	--	--	--	25 U
2-Nitrophenol	--	150	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.381 U	0.381 U	0.0935 U	0.408 U	0.392 U	0.0935 U	--	--	--	10 U
3- and 4-Methylphenol	--	--	--	--	--	5 U	5 UJ	--	--	--	0.0952 U	0.113 J	0.0439 J	1.09	0.469	0.0234 U	--	--	--	10 U
3,3'-Dichlorobenzidine	--	0.028	--	--	--	5 U	5 UJ	--	--	--	0.381 U	0.381 U	0.0935 U	0.408 U	0.392 U	0.0935 U	--	--	--	25 U
3-Nitroaniline	--	3.2	--	--	--	10 U	10 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.187 U	--	--	--	25 U
4-Bromophenyl Phenyl Ether	--	--	--	--	--	5 U	5 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
4-Chloro-3-methylphenol	--	--	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.381 U	0.381 U	0.0935 U	0.408 U	0.392 U	0.0935 U	--	--	--	10 U
4-Chloroaniline	--	150	--	--	--	20 U	20 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
4-Chlorophenyl Phenyl Ether	--	0.06	--	--	--	5 U	5 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	3.2	--	--	--	10 U	10 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.187 U	--	--	--	25 U
4-Nitrophenol	--	150	--	25 U	25 U	25 U	25 UJ	--	25 U	--	0.381 U	0.762 U	0.0935 U	0.408 U	0.784 U	0.0935 U	--	--	--	25 U
Acenaphthene	23	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	4.57	0.1 U	0.0381 U	2.45	0.0451	0.964	3.88	0.0871	10 U	10 U	10 U	1 U
Acenaphthylene	--	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0381 U	0.0381 U	0.0094 U	0.0408 U	0.0861	0.0094 U	10 U	10 U	10 U	2 U
Aniline	--	12	--	--	--	--	--	--	--	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	25 U
Anthracene	0.73	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.209	0.1 U	0.0381 U	0.104	0.0096 J	0.0843	0.203	0.0094 U	10 U	10 U	10 U	0.2
Azobenzene	--	--	--	--	--	--	--	--	--	--	0.0952 U	0.0952 U	0.0467 U	0.102 U	0.098 U	0.0467 U	--	--	--	--
Benzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.0012	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0381 U	0.0381 U	0.0094 U	0.0509 J	0.123 J	0.0094 U	10 U	10 U	10 U	0.1 U

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL GRAB SAMPLES																						
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	DP-1 (35-40)	DP-2 (40-45)	DP-3 (35-40)	DP-4 (40-45)	DP-5 (40-45)	DP-5 (55-60)	SE/E-11	SE/E-12	SE/E-13	TB-1W		
			5/8/2001	5/11/2001	5/10/2001	5/8/2001	5/10/2001	5/11/2001	5/10/2001	5/11/2001	5/10/2001	5/11/2001	12/14/2016	12/29/2016	12/21/2016	1/5/2017	1/5/2017	1/5/2017	12/6/1988	12/9/1988	12/9/1988	10/20/1995
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																						
Benzo(a)pyrene	0.00012	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0571 U	0.0571 U	0.014 U	0.0743 J	0.206	0.016 J	10 U	10 U	10 U	0.1 U		
Benzo(b)fluoranthene	0.0012	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0571 U	0.0571 U	0.0155 J	0.0727 J	0.181 J	0.0156 J	--	--	--	0.2 U		
Benzo(g,h,i)perylene	0.4	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0381 U	0.0381 U	0.0094 U	0.0408 U	0.155	0.0094 U	10 U	10 U	10 U	0.2 U		
Benzo(k)fluoranthene	0.0013	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0571 U	0.0571 U	0.014 U	0.0612 U	0.0588 U	0.014 U	--	--	--	0.1 U		
Benzoic Acid	--	42	--	--	--	50 U	50 UJ	--	--	--	4.76 U	6.73 J	1.25 J	5.1 U	4.9 U	2.32 U	--	--	--	25 U		
Benzyl Alcohol	--	8.6	--	--	--	10 U	10 UJ	--	--	--	0.381 U	0.876 U	0.113 J	0.408 U	0.392 U	0.134 J	--	--	--	10 U		
Bis(2-chloroethoxy)methane	0	0	--	--	--	10 U	10 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.196 U	0.0234 U	--	--	--	10 U		
Bis(2-chloroethyl) Ether	--	0.06	--	--	--	5 U	5 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.204 U	0.196 U	0.0467 U	--	--	--	10 U		
Bis(2-chloroisopropyl) Ether	--	--	--	--	--	10 U	10 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U		
Bis(2-ethylhexyl) adipate	--	--	--	--	--	--	--	--	--	--	0.952 U	0.952 U	0.234 U	1.02 U	0.98 U	0.234 U	--	--	--	--		
Bis(2-ethylhexyl) phthalate	--	2.2	--	--	--	10 U	10 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.443	--	--	--	11		
Butylbenzyl phthalate	--	3	--	--	--	5 U	5 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.187 U	--	--	--	10 U		
Carbazole	--	3.4	--	--	--	--	--	--	--	--	0.0571 U	0.506	0.014 U	0.0612 U	0.121	0.014 U	--	--	--	--		
Chrysene	0.0013	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0381 U	0.0381 U	0.0094 U	0.0438 J	0.16 J	0.0094 U	10 U	10 U	10 U	0.1 U		
Cresols	--	--	--	50 U	50 U	50 U	50 U	--	50 U	--	--	--	--	--	--	--	--	--	--	--		
Dibenzo(a,h)anthracene	0.00012	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.0381 U	0.0381 U	0.0094 U	0.0408 U	0.0392	0.0094 U	10 U	10 U	10 U	0.1 U		
Dibenzofuran	--	3.7	--	--	--	5 U	5 UJ	--	--	--	0.0381 U	0.742	0.0278	0.311	0.107	0.0217	--	--	--	10 U		
Diethyl Phthalate	--	3	--	--	--	5 U	5 UJ	--	--	--	1.23 J	0.971 J	0.603	5.06	0.784 U	2.58	--	--	--	10 U		
Dimethyl Phthalate	--	3	--	--	--	5 U	5 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.899 J	0.784 U	0.863	--	--	--	10 U		
Di-n-butyl phthalate	--	3	--	--	--	5 U	5 UJ	--	--	--	0.975 J	0.773 J	0.733	0.856 J	0.784 U	1.08	--	--	--	10 U		
Di-n-octyl Phthalate	--	3	--	--	--	5 U	5 UJ	--	--	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.187 U	--	--	--	10 U		
Dinoseb	--	7	--	25 U	25 U	25 U	25 U	--	25 U	--	--	--	--	--	--	--	--	--	--	--		
Fluoranthene	6.2	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.403	0.1 U	0.0381 U	0.065 J	0.0242	0.188	0.62	0.018 J	10 U	10 U	10 U	1.1		
Fluorene	3.9	--	0.1 U	0.1 U	0.1 U	0.393	0.1 U	--	1.56	0.1 U	0.0381 U	0.935	0.033	0.458	0.685	0.0346	10 U	10 U	10 U	0.2 U		
Hexachlorobenzene	--	0.00029	--	--	--	5 U	5 UJ	--	--	--	0.0381 U	0.0381 U	0.0094 U	0.0408 U	0.0392 U	0.0094 U	--	--	--	10 U		
Hexachlorobutadiene	--	--	2 U	2 U	2 U	10 U	10 UJ	2 U	2 U	2 U	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U		
Hexachlorocyclopentadiene	--	5.2	--	--	--	10 U	10 UJ	--	--	--	0.19 U	0.19 U	0.0467 U	0.204 U	0.196 U	0.0467 U	--	--	--	10 U		
Hexachloroethane	--	3.3	--	--	--	10 U	10 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U		
Indeno(1,2,3-cd)pyrene	0.0012	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.0381 U	0.0381 U	0.0094 U	0.0408 U	0.114	0.0094 U	10 U	10 U	10 U	0.1 U		
Isophorone	--	71	--	--	--	5 U	5 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U		
Naphthalene	12	--	0.283	0.1 U	0.216	0.563	0.1 U	2 U	4.53	0.1 U	0.0762 U	1.13 J	0.0384 J	0.0816 U	0.737	0.109 B	10 U	10 U	10 U	1 U		
Nitrobenzene	--	3.4	--	--	--	5 U	5 UJ	--	--	--	0.381 U	0.381 U	0.0935 U	0.408 U	0.392 U	0.0935 U	--	--	--	10 U		
N-Nitrosodimethylamine	--	0.00042	--	--	--	--	--	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	25 U		
N-Nitrosodi-n-propylamine	--	0.0096	--	--	--	10 U	10 UJ	--	--	--	0.19 U	0.533 U	0.374 U	0.49 U	0.471 U	0.374 U	--	--	--	10 U		
N-Nitrosodiphenylamine	--	6	--	--	--	5 U	5 UJ	--	--	--	0.0952 U	0.0952 U	0.0234 U	0.102 U	0.098 U	0.0234 U	--	--	--	10 U		
Pentachlorophenol	0.03	--	--	25 U	25 U	25 U	10 UJ	--	25 U	--	0.381 U	0.4 J	0.095 J	0.409 J	0.646 J	0.104 J	--	--	--	25 U		
Phenanthrene	6.3	--	0.1 U	0.1 U	0.1 U	0.637	0.1 U	--	1.5	0.1 U	0.0381 U	0.712	0.0669	0.612	2.15	0.0592	10 U	10 U	10 U	2.5		
Phenol	--	2560	--	25 U	25 U	25 U	5 UJ	--	25 U	--	0.762 U	0.762 U	0.187 U	0.816 U	0.784 U	0.187 U	--	--	--	10 U		
Pyrene	10	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.261	0.1 U	0.0381 U	0.0567 J	0.0193	0.185	0.804	0.0222	10 U	10 U	10 U	1.1		
Pyridine	--	--	--	--	--	--	--	--	--	--	0.381 U	0.381 U	0.0935 U	0.408 U	0.392 U	0.0935 U	--	--	--	--		
Tetrachlorophenols	--	--	--	25 U	25 U	25 U	25 U	--	25 U	--	--	--	--	--	--	--	--	--	--	--		

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL GRAB SAMPLES																						
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	B-10	B-11	B-12	B-13	B-14	B-15	B-16	B-17	B-18	B-20	B-9	SE/E-10	SE/E-7	SE/E-8	SE/E-9	TB-2W	WC-4	WC-5		
			5/15/2001	5/15/2001	5/14/2001	5/14/2001	5/14/2001	5/14/2001	5/14/2001	5/7/2001	5/8/2001	5/7/2001	5/7/2001	5/7/2001	5/15/2001	12/8/1988	12/7/1988	12/7/1988	12/8/1988	10/19/1995	9/30/2010	9/30/2010
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																						
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
1,2,4-Trichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.15 U	0.15 U		
1,2-Dichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.25 U	0.25 U		
1,2-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
1,3-Dichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.16 U	0.16 U		
1,3-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
1,4-Dichlorobenzene	--	--	1 U	--	5 U	--	1 U	1 U	1 U	5 U	5 U	1 U	1 U	--	--	--	--	10 U	0.2 U	0.2 U		
1,4-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
2,3,4,6-Tetrachlorophenol	--	1100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01 J	0.012 J		
2,3,5,6-Tetrachlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
2,4,5-Trichlorophenol	--	3600	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2,4,6-Trichlorophenol	--	2.4	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2,4-Dichlorophenol	--	110	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2,4-Dimethylphenol	--	730	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--		
2,4-Dinitrophenol	--	73	--	--	25 U	--	--	--	--	25 U	25 U	--	--	--	--	--	--	25 U	--	--		
2,4-Dinitrotoluene	--	3.4	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
2,6-Dinitrotoluene	--	490	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2-Chloronaphthalene	--	--	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2-Chlorophenol	--	30	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
2-methyl-4,6-dinitrophenol	--	150	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	25 U	--	--		
2-Methylphenol	--	13	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--		
2-Nitroaniline	--	110	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	25 U	--	--		
2-Nitrophenol	--	150	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
3- and 4-Methylphenol	--	--	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
3,3'-Dichlorobenzidine	--	0.028	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	25 U	--	--		
3-Nitroaniline	--	3.2	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	25 U	--	--		
4-Bromophenyl Phenyl Ether	--	--	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
4-Chloro-3-methylphenol	--	--	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
4-Chloroaniline	--	150	--	--	20 U	--	--	--	--	20 U	20 U	--	--	--	--	--	--	10 U	--	--		
4-Chlorophenyl Phenyl Ether	--	0.06	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--		
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
4-Nitroaniline	--	3.2	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	25 U	--	--		
4-Nitrophenol	--	150	--	--	25 U	--	--	--	--	25 U	25 U	--	--	--	--	--	--	25 U	--	--		
Acenaphthene	23	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	1 U	0.016	0.38		
Acenaphthylene	--	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	1 U	0.034	0.087		
Aniline	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--		
Anthracene	0.73	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.1 U	0.12	0.32		
Azobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Benzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Benzo(a)anthracene	0.0012	--	0.1 U	0.1 U	0.1 U	0.218	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.1 U	0.36	0.21		

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL GRAB SAMPLES																					
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	B-10	B-11	B-12	B-13	B-14	B-15	B-16	B-17	B-18	B-20	B-9	SE/E-10	SE/E-7	SE/E-8	SE/E-9	TB-2W	WC-4	WC-5	
			5/15/2001	5/15/2001	5/14/2001	5/14/2001	5/14/2001	5/14/2001	5/14/2001	5/7/2001	5/8/2001	5/7/2001	5/7/2001	5/15/2001	12/8/1988	12/7/1988	12/7/1988	12/8/1988	10/19/1995	9/30/2010	9/30/2010
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																					
Benzo(a)pyrene	0.00012	--	0.1 U	0.1 U	0.1 U	0.265	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.1 U	0.32	0.13	
Benzo(b)fluoranthene	0.0012	--	0.1 U	0.1 U	0.1 U	0.264	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	--	--	--	--	0.2 U	0.24	0.11	
Benzo(g,h,i)perylene	0.4	--	0.1 U	0.1 U	0.1 U	0.225	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.2 U	0.11	0.069	
Benzo(k)fluoranthene	0.0013	--	0.1 U	0.1 U	0.1 U	0.192	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	--	--	--	--	0.1 U	0.19	0.089	
Benzoic Acid	--	42	--	--	50 U	--	--	--	--	50 U	50 U	--	--	--	--	--	--	25 U	--	--	
Benzyl Alcohol	--	8.6	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
Bis(2-chloroethoxy)methane	0	0	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
Bis(2-chloroethyl) Ether	--	0.06	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Bis(2-chloroisopropyl) Ether	--	--	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
Bis(2-ethylhexyl) adipate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-ethylhexyl) phthalate	--	2.2	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
Butylbenzyl phthalate	--	3	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Carbazole	--	3.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chrysene	0.0013	--	0.1 U	0.1 U	0.1 U	0.245	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.1	0.33	0.23	
Cresols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Dibenzo(a,h)anthracene	0.00012	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.2 U	10 U	10 U	10 U	10 U	0.1 U	0.047	0.018	
Dibenzofuran	--	3.7	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Diethyl Phthalate	--	3	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Dimethyl Phthalate	--	3	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Di-n-butyl phthalate	--	3	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Di-n-octyl Phthalate	--	3	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Dinoseb	--	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fluoranthene	6.2	--	0.1 U	0.1 U	0.1 U	0.426	0.1 U	--	0.1 U	0.1 U	5 U	0.1	0.1 U	10 U	10 U	10 U	10 U	0.2	0.65	1.7	
Fluorene	3.9	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.2 U	0.026	0.066	
Hexachlorobenzene	--	0.00029	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Hexachlorobutadiene	--	--	2 U	--	10 U	--	2 U	2 U	2 U	10 U	10 U	2 U	2 U	--	--	--	--	10 U	0.27 U	0.27 U	
Hexachlorocyclopentadiene	--	5.2	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
Hexachloroethane	--	3.3	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
Indeno(1,2,3-cd)pyrene	0.0012	--	0.1 U	0.1 U	0.1 U	0.183	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.1 U	10 U	10 U	10 U	10 U	0.1 U	0.11	0.059	
Isophorone	--	71	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Naphthalene	12	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	2 U	0.269	0.1 U	5 U	0.201	0.1 U	10 U	10 U	10 U	10 U	1 U	0.028 B	0.044 B	
Nitrobenzene	--	3.4	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
N-Nitrosodimethylamine	--	0.00042	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U	--	--	
N-Nitrosodi-n-propylamine	--	0.0096	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	10 U	--	--	
N-Nitrosodiphenylamine	--	6	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Pentachlorophenol	0.03	--	--	--	10 U	--	--	--	--	10 U	10 U	--	--	--	--	--	--	25 U	--	--	
Phenanthrene	6.3	--	0.1 U	0.1 U	0.1 U	0.139	0.1 U	--	0.1 U	0.1 U	5 U	0.1 U	0.116	10 U	10 U	10 U	10 U	0.3	0.22 B	1.9 B	
Phenol	--	2560	--	--	5 U	--	--	--	--	5 U	5 U	--	--	--	--	--	--	10 U	--	--	
Pyrene	10	--	0.1 U	0.1 U	0.1 U	0.492	0.1 U	--	0.1 U	0.1 U	5 U	0.126	0.135	10 U	10 U	10 U	10 U	0.4	0.67	1.8	
Pyridine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tetrachlorophenols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL GRAB SAMPLES						EAST PARCEL GRAB SAMPLES														
Sample ID	PHSS	JSCS	WC-6	WC-7	WC-8	B-21	B-23	B-25	B-26	B-27	B-28	B-29	B-30	HA-4	SE/E-1	SE/E-17	SE/E-2	SE/E-3	SE/E-4	SE/E-5
Date	Cleanup	Screening	9/30/2010	9/29/2010	9/29/2010	5/7/2001	5/15/2001	5/7/2001	5/11/2001	5/11/2001	5/17/2001	5/17/2001	5/17/2001	12/12/1988	12/5/1988	1/26/1988	12/5/1988	12/6/1988	12/6/1988	12/6/1988
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	0.15 U	0.15 U	0.15 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	--	1 U	--	--	--
1,2-Dichlorobenzene	--	--	0.25 U	0.25 U	0.25 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	1 U	3 U	--	--	--
1,2-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	0.16 U	0.16 U	0.16 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	1 U	3 U	--	--	--
1,3-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	1 U	--	1 U	11.8 U	1 U	5 U	5 U	5 U	--	--	1 U	3 U	--	--	--
1,4-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	--	--	0.0073 J	0.015	0.031	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	--	1100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	3600	--	--	--	25 U	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	2.4	--	--	--	25 U	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	10 U	--	--	--
2,4-Dichlorophenol	--	110	--	--	--	--	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	8 U	--	--	--
2,4-Dimethylphenol	--	730	--	--	--	--	--	--	23.5 U	--	25 U	25 U	25 U	--	--	--	5 U	--	--	--
2,4-Dinitrophenol	--	73	--	--	--	62.5 U	--	--	58.8 U	--	62.5 U	62.5 U	62.5 U	--	--	--	30 U	--	--	--
2,4-Dinitrotoluene	--	3.4	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	3 U	--	--	--
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--	25 U	25 U	25 U	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	490	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	3 U	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	1 U	--	--	--
2-Chlorophenol	--	30	--	--	--	--	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	5 U	--	--	--
2-methyl-4,6-dinitrophenol	--	150	--	--	--	62.5 U	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	20 U	--	--	--
2-Methylphenol	--	13	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	--	--	--	--
2-Nitroaniline	--	110	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	--	--	--	--
2-Nitrophenol	--	150	--	--	--	25 U	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	10 U	--	--	--
3- and 4-Methylphenol	--	--	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	0.028	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	--	--	--	--
3-Nitroaniline	--	3.2	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	--	--	--	--
4-Bromophenyl Phenyl Ether	--	--	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	2 U	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	5 U	--	--	--
4-Chloroaniline	--	150	--	--	--	--	--	--	47 U	--	20 U	20 U	20 U	--	--	--	--	--	--	--
4-Chlorophenyl Phenyl Ether	--	0.06	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	2 U	--	--	--
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	3.2	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	--	--	--	--
4-Nitrophenol	--	150	--	--	--	25 U	--	--	58.8 U	--	25 U	25 U	25 U	--	--	--	20 U	--	--	--
Acenaphthene	23	--	0.0053 J	1.6	0.097	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	15.8	10 U	10 U	--	10 U	10 U	10 U	10 U
Acenaphthylene	--	0.2	0.0039 J	0.076	0.019	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	5 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Aniline	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	0.73	--	0.019	0.32	0.036	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	5 U	10 U	10 U	--	1 U	10 U	10 U	10 U
Azobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
Benzo(a)anthracene	0.0012	--	0.012 J	0.096	0.072	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	10 U	10 U	--	10 U	10 U	10 U	10 U

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL GRAB SAMPLES						EAST PARCEL GRAB SAMPLES														
Sample ID	PHSS	JSCS	WC-6	WC-7	WC-8	B-21	B-23	B-25	B-26	B-27	B-28	B-29	B-30	HA-4	SE/E-1	SE/E-17	SE/E-2	SE/E-3	SE/E-4	SE/E-5
Date	Cleanup	Screening	9/30/2010	9/29/2010	9/29/2010	5/7/2001	5/15/2001	5/7/2001	5/11/2001	5/11/2001	5/17/2001	5/17/2001	5/17/2001	12/12/1988	12/5/1988	1/26/1988	12/5/1988	12/6/1988	12/6/1988	12/6/1988
Sample Type	Level	Level Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
Benzo(a)pyrene	0.00012	--	0.0086 J	0.018	0.081	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	0.0012	--	0.0093 J	0.016	0.061	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	--	--	--	2 U	--	--	--
Benzo(g,h,i)perylene	0.4	--	0.0069 J	0.0049 J	0.05	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	0.0013	--	0.0092 J	0.016	0.057	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	--	--	--	2 U	--	--	--
Benzoic Acid	--	42	--	--	--	--	--	--	118 U	--	50 U	50 U	50 U	--	--	--	--	--	--	--
Benzyl Alcohol	--	8.6	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	0	0	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	6 U	--	--	--
Bis(2-chloroethyl) Ether	--	0.06	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	5 U	--	--	--
Bis(2-chloroisopropyl) Ether	--	--	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	3 U	--	--	--
Bis(2-ethylhexyl) adipate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	--	2.2	--	--	--	--	--	--	23.5 U	--	10 U	10 U	69.7	--	--	--	10 U	--	--	--
Butylbenzyl phthalate	--	3	--	--	--	--	--	--	11.8 U	--	5 U	5 U	8.56	--	--	--	10 U	--	--	--
Carbazole	--	3.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.0013	--	0.012 J	0.1	0.068	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Cresols	--	--	--	--	--	--	--	--	--	--	50 U	50 U	50 U	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.00012	--	0.0051 J	0.0017 U	0.014	--	0.2 U	--	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Dibenzofuran	--	3.7	--	--	--	--	--	--	11.8 U	--	5 U	5 U	10.9	--	--	--	--	--	--	--
Diethyl Phthalate	--	3	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	2 U	--	--	--
Dimethyl Phthalate	--	3	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	2 U	--	--	--
Di-n-butyl phthalate	--	3	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	5 U	--	--	--
Di-n-octyl Phthalate	--	3	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	10 U	--	--	--
Dinoseb	--	7	--	--	--	25 U	--	--	--	--	25 U	25 U	25 U	--	--	--	--	--	--	--
Fluoranthene	6.2	--	0.087	1.6	0.12	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	5 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Fluorene	3.9	--	0.0057 J	0.21	0.039	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	11.1	10 U	10 U	--	10 U	10 U	10 U	10 U
Hexachlorobenzene	--	0.00029	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	1 U	--	--	--
Hexachlorobutadiene	--	--	0.27 U	0.27 U	0.27 U	2 U	--	2 U	23.5 U	2 U	10 U	10 U	10 U	--	--	--	3 U	--	--	--
Hexachlorocyclopentadiene	--	5.2	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	30 U	--	--	--
Hexachloroethane	--	3.3	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	1 U	--	--	--
Indeno(1,2,3-cd)pyrene	0.0012	--	0.0069 J	0.0038 J	0.04	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	10 U	10 U	--	10 U	10 U	10 U	10 U
Isophorone	--	71	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	1 U	--	--	--
Naphthalene	12	--	0.02 B	0.039 B	0.12 B	2 U	0.1 U	2 U	0.1 U	0.1 UJ	0.1 U	0.1 U	35.6	10 U	10 U	--	10 U	10 U	10 U	10 U
Nitrobenzene	--	3.4	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	1 U	--	--	--
N-Nitrosodimethylamine	--	0.00042	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	--	0.0096	--	--	--	--	--	--	23.5 U	--	10 U	10 U	10 U	--	--	--	2 U	--	--	--
N-Nitrosodiphenylamine	--	6	--	--	--	--	--	--	11.8 U	--	5 U	5 U	5 U	--	--	--	--	--	--	--
Pentachlorophenol	0.03	--	--	--	--	25 U	--	--	23.5 U	--	25 U	25 U	25 U	--	--	--	10 U	--	--	--
Phenanthrene	6.3	--	0.064 B	2.2 B	0.082 B	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	18	10 U	10 U	--	10 U	10 U	10 U	10 U
Phenol	--	2560	--	--	--	25 U	--	--	11.8 U	--	25 U	25 U	25 U	--	--	--	5 U	--	--	--
Pyrene	10	--	0.1	1.7	0.26	--	0.1 U	--	0.1 U	0.1 UJ	0.1 U	0.1 U	1.13	10 U	10 U	--	10 U	10 U	10 U	10 U
Pyridine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachlorophenols	--	--	--	--	--	25 U	--	--	--	--	25 U	25 U	25 U	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS																				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	SE/E-6	TB-3W	TB-4W	TRENCH 2	TRENCH 4	MW-1										MW-2		
			12/7/1988	10/19/1995	10/19/1995	9/28/2010	9/29/2010	2/7/2002	5/28/2002	8/30/2005	12/16/2005	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/24/2021	2/7/2002	5/28/2002
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	1 U	10 U	10 U	0.15 U	0.15 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	10 U	1 U
1,2-Dichlorobenzene	--	--	3 U	10 U	10 U	0.25 U	0.25 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	10 U	1 U
1,2-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	1.9 U	1 U	0.952 U	0.935 U	--	--	--	--	--
1,3-Dichlorobenzene	--	--	3 U	10 U	10 U	0.16 U	0.16 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	10 U	1 U
1,3-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	1.9 U	1 U	0.952 U	0.935 U	--	--	--	--	--
1,4-Dichlorobenzene	--	--	3 U	10 U	10 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	10 U	1 U
1,4-Dinitrobenzene	--	--	--	--	--	--	--	--	--	--	--	1.9 U	1 U	0.952 U	0.935 U	--	--	--	--	--
1-Methylnaphthalene	--	--	--	--	--	0.0092 J	0.019	--	--	--	--	0.152 U	0.08 U	0.0762 U	0.0748 U	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	--	1100	--	--	--	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	--	--	--	--	--	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2,4,5-Trichlorophenol	--	3600	--	10 U	10 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2,4,6-Trichlorophenol	--	2.4	10 U	10 U	10 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2,4-Dichlorophenol	--	110	8 U	10 U	10 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2,4-Dimethylphenol	--	730	5 U	10 U	10 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2,4-Dinitrophenol	--	73	30 U	25 U	25 U	--	--	--	--	--	--	1.9 U	1 U	0.952 U	0.935 U	--	--	--	--	--
2,4-Dinitrotoluene	--	3.4	3 U	10 U	10 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	490	3 U	10 U	10 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
2-Chloronaphthalene	--	--	1 U	10 U	10 U	--	--	--	--	--	--	0.0762 U	0.04 U	0.0381 U	0.0374 U	--	--	--	--	--
2-Chlorophenol	--	30	5 U	10 U	10 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
2-methyl-4,6-dinitrophenol	--	150	20 U	25 U	25 U	--	--	--	--	--	--	1.9 U	1 U	0.952 U	0.935 U	--	--	--	--	--
2-Methylphenol	--	13	--	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
2-Nitroaniline	--	110	--	25 U	25 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
2-Nitrophenol	--	150	10 U	10 U	10 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
3- and 4-Methylphenol	--	--	--	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
3,3'-Dichlorobenzidine	--	0.028	--	25 U	25 U	--	--	--	--	--	--	0.762 U	2 U	0.381 U	0.374 U	--	--	--	--	--
3-Nitroaniline	--	3.2	--	25 U	25 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
4-Bromophenyl Phenyl Ether	--	--	2 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
4-Chloro-3-methylphenol	--	--	5 U	10 U	10 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
4-Chloroaniline	--	150	--	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
4-Chlorophenyl Phenyl Ether	--	0.06	2 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	3.2	--	25 U	25 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
4-Nitrophenol	--	150	20 U	25 U	25 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
Acenaphthene	23	--	10 U	1 U	1 U	0.0053 J	0.32	0.343	0.189	0.1 U	0.1 UJ	0.122	0.0658 U	0.0381 U	0.115	--	--	--	22.5	13.5
Acenaphthylene	--	0.2	10 U	1 U	2 U	0.0055 J	0.055	0.331	0.174	0.1 U	0.1 U	0.0762 U	0.105 U	0.0637 J	0.0374 U	--	--	--	0.1 U	0.1 U
Aniline	--	12	--	25 U	25 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
Anthracene	0.73	--	10 U	0.1 U	0.1	0.0055 J	0.025	0.162	0.1 U	0.1 U	0.1 U	0.0762 U	0.0519	0.0414 JB	0.0374 U	--	--	--	1.5	1.17
Azobenzene	--	--	--	--	--	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
Benzidine	--	--	50 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.0012	--	10 U	0.1 U	0.2	0.0091 J	0.012 J	0.151	0.242	0.273	0.113	0.0762 U	0.197	0.162	0.0618 J	--	--	--	0.173	0.152

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS																				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	SE/E-6	TB-3W	TB-4W	TRENCH 2	TRENCH 4	MW-1										MW-2		
			12/7/1988	10/19/1995	10/19/1995	9/28/2010	9/29/2010	2/7/2002	5/28/2002	8/30/2005	12/16/2005	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/24/2021	2/7/2002	5/28/2002
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
Benzo(a)pyrene	0.00012	--	10 U	0.1 U	0.2	0.013 J	0.0042 J	0.131	0.302	0.406	0.19 J	0.114 U	0.463	0.355	0.0991 J	--	--	--	0.1 U	0.1 U
Benzo(b)fluoranthene	0.0012	--	2 U	0.2 U	0.2 U	0.01 J	0.0061 J	0.1 U	0.24	0.328	0.193	0.114 U	0.463	0.325	0.0809 J	--	--	--	0.1 U	0.1 U
Benzo(g,h,i)perylene	0.4	--	10 U	0.2 U	0.2	0.016	0.0035 J	0.109	0.321	0.23	0.168	0.0762 U	0.454	0.344	0.0795	--	--	--	0.1 U	0.1 U
Benzo(k)fluoranthene	0.0013	--	2 U	0.1 U	0.1 U	0.0094 J	0.003 J	0.1 U	0.198	0.306	0.166	0.114 U	0.181	0.116	0.0594 J	--	--	--	0.1 U	0.1 U
Benzoic Acid	--	42	--	25 U	25 U	--	--	--	--	--	--	9.52 U	5 U	4.76 U	4.67 U	--	--	--	--	--
Benzyl Alcohol	--	8.6	--	10 U	10 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
Bis(2-chloroethoxy)methane	0	0	6 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
Bis(2-chloroethyl) Ether	--	0.06	5 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.2 U	0.0952 U	0.0935 U	--	--	--	--	--
Bis(2-chloroisopropyl) Ether	--	--	3 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
Bis(2-ethylhexyl) adipate	--	--	--	--	--	--	--	--	--	--	--	1.9 U	1 U	0.952 U	0.935 U	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	--	2.2	10 U	10	21	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Butylbenzyl phthalate	--	3	10 U	10 U	10 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Carbazole	--	3.4	--	--	--	--	--	--	--	--	--	0.114 U	0.06 U	0.0571 U	0.0561 U	--	--	--	--	--
Chrysene	0.0013	--	10 U	0.1	0.3	0.012 J	0.031	0.217	0.306	0.407	0.17	0.0762 U	0.266	0.215	0.0541 J	--	--	--	0.178	0.159
Cresols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.00012	--	10 U	0.1 U	0.1 U	0.0043 J	0.0018 J	0.2 U	0.2 U	0.2 U	0.2 U	0.0762 U	0.0467	0.0381 U	0.0374 U	--	--	--	0.2 U	0.2 U
Dibenzofuran	--	3.7	--	10 U	10 U	--	--	--	--	--	--	0.0762 U	0.04 U	0.0381 U	0.0374 U	--	--	--	--	--
Diethyl Phthalate	--	3	2 U	10 U	10 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Dimethyl Phthalate	--	3	2 U	10 U	10 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Di-n-butyl phthalate	--	3	5 U	10	10 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Di-n-octyl Phthalate	--	3	10 U	10 U	10 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Dinoseb	--	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	6.2	--	10 U	0.6	1.4	0.015	0.023	0.82	0.609	0.73	0.206	0.0762 U	0.309	0.261	0.0691 J	--	--	--	1.91	1.62
Fluorene	3.9	--	10 U	0.2 U	0.2 U	0.0065 J	0.33	0.255	0.1 U	0.1 U	0.1 U	0.0762 U	0.04 U	0.0381 U	0.0374 U	--	--	--	12.5	8.24
Hexachlorobenzene	--	0.00029	1 U	10 U	10 U	--	--	--	--	--	--	0.0762 U	0.04 U	0.0381 U	0.0374 U	--	--	--	--	--
Hexachlorobutadiene	--	--	3 U	10 U	10 U	0.27 U	0.27 U	2 U	2 U	4 U	4 U	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	20 U	2 U
Hexachlorocyclopentadiene	--	5.2	30 U	10 U	10 U	--	--	--	--	--	--	0.381 U	0.2 U	0.19 U	0.187 U	--	--	--	--	--
Hexachloroethane	--	3.3	1 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.0012	--	10 U	0.1 U	0.1	0.0096 J	0.0024 J	0.1 U	0.226	0.171	0.113	0.0762 U	0.347	0.259	0.0669 J	--	--	--	0.1 U	0.1 U
Isophorone	--	71	1 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
Naphthalene	12	--	10 U	1 U	1 U	0.023 B	0.065 B	1.54	0.534	0.206	0.1 U	0.152 U	0.08 U	0.0762 U	0.0748 U	--	--	--	633	205
Nitrobenzene	--	3.4	1 U	10 U	10 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
N-Nitrosodimethylamine	--	0.00042	--	25 U	25 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
N-Nitrosodi-n-propylamine	--	0.0096	2 U	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
N-Nitrosodiphenylamine	--	6	--	10 U	10 U	--	--	--	--	--	--	0.19 U	0.1 U	0.0952 U	0.0935 U	--	--	--	--	--
Pentachlorophenol	0.03	--	10 U	25 U	25 U	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	0.071 U	0.12 J	0.071 U	--	--
Phenanthrene	6.3	--	10 U	0.8	1.5	0.016 B	0.51 B	1.11	0.532	0.357	0.1 U	0.0762 U	0.158	0.122	0.106	--	--	--	11	8.5
Phenol	--	2560	5 U	10 U	10 U	--	--	--	--	--	--	1.52 U	0.8 U	0.762 U	0.748 U	--	--	--	--	--
Pyrene	10	--	10 U	0.6	1.2	0.017	0.036	1.12	0.781	1.17	0.317	0.0809	0.528	0.414	0.127	--	--	--	1.32	1.07
Pyridine	--	--	--	--	--	--	--	--	--	--	--	0.762 U	0.4 U	0.381 U	0.374 U	--	--	--	--	--
Tetrachlorophenols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS																				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-2									MW-3								
			8/30/2005	12/16/2005	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/24/2021	2/7/2002	5/28/2002	8/30/2005	12/16/2005	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	1 U	1 U	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	1 U	1 U	1 U	1 U	0.194 U	0.1 U	0.0952 U	0.0935 U	--
1,2-Dichlorobenzene	--	--	1 U	1 U	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	1 U	1 U	1 U	1 U	0.194 U	0.1 U	0.0952 U	0.0935 U	--
1,2-Dinitrobenzene	--	--	--	--	1.9 U	0.962 U	1.25 U	0.935 U	--	--	--	--	--	--	--	1.94 U	1 U	0.952 U	0.935 U	--
1,3-Dichlorobenzene	--	--	1 U	1 U	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	1 U	1 U	1 U	1 U	0.194 U	0.1 U	0.0952 U	0.0935 U	--
1,3-Dinitrobenzene	--	--	--	--	1.9 U	0.962 U	1.25 U	0.935 U	--	--	--	--	--	--	--	1.94 U	1 U	0.952 U	0.935 U	--
1,4-Dichlorobenzene	--	--	1 U	1 U	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	1 U	1 U	1 U	1 U	0.194 U	0.1 U	0.0952 U	0.0935 U	--
1,4-Dinitrobenzene	--	--	--	--	1.9 U	0.962 U	1.25 U	0.935 U	--	--	--	--	--	--	--	1.94 U	1 U	0.952 U	0.935 U	--
1-Methylnaphthalene	--	--	--	--	0.558	0.414	0.471	0.375 J	--	--	--	--	--	--	--	0.155 U	0.08 U	0.0762 U	0.0748 U	--
2,3,4,6-Tetrachlorophenol	--	1100	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2,3,5,6-Tetrachlorophenol	--	--	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2,4,5-Trichlorophenol	--	3600	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2,4,6-Trichlorophenol	--	2.4	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2,4-Dichlorophenol	--	110	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2,4-Dimethylphenol	--	730	--	--	0.381 U	0.284 U	0.265 J	0.217 J	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2,4-Dinitrophenol	--	73	--	--	1.9 U	0.962 U	1.25 U	0.935 U	--	--	--	--	--	--	--	1.94 U	1 U	0.952 U	0.935 U	--
2,4-Dinitrotoluene	--	3.4	--	--	0.762 U	0.385 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	490	--	--	0.762 U	0.385 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
2-Chloronaphthalene	--	--	--	--	0.0762 U	0.0385 U	0.05 U	0.0374 U	--	--	--	--	--	--	--	0.0777 U	0.04 U	0.0381 U	0.0374 U	--
2-Chlorophenol	--	30	--	--	0.381 U	0.192 U	0.25 U	0.564 J	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
2-methyl-4,6-dinitrophenol	--	150	--	--	1.9 U	0.962 U	1.25 U	0.935 U	--	--	--	--	--	--	--	1.94 U	1 U	0.952 U	0.935 U	--
2-Methylphenol	--	13	--	--	0.19 U	0.128	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
2-Nitroaniline	--	110	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
2-Nitrophenol	--	150	--	--	0.762 U	0.385 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
3- and 4-Methylphenol	--	--	--	--	1.09	1.54	0.58	0.145 J	--	--	--	--	--	--	--	0.245	0.1 U	0.0952 U	0.0935 U	--
3,3'-Dichlorobenzidine	--	0.028	--	--	0.762 U	1.92 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	2 U	1.9 U	0.374 U	--
3-Nitroaniline	--	3.2	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
4-Bromophenyl Phenyl Ether	--	--	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
4-Chloro-3-methylphenol	--	--	--	--	0.762 U	0.385 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
4-Chloroaniline	--	150	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
4-Chlorophenyl Phenyl Ether	--	0.06	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	3.2	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
4-Nitrophenol	--	150	--	--	0.762 U	0.385 U	1 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
Acenaphthene	23	--	3.87	3.95 J	0.8	0.682 U	0.929	0.921	--	--	--	5.16	4.01	5.23	4.18 J	2.02	2.72 U	4.69	2.35	--
Acenaphthylene	--	0.2	0.1 U	0.1 U	0.0762 U	0.0385 U	0.05 U	0.0374 U	--	--	--	0.1 U	0.1 U	0.198	0.1 U	0.0777 U	0.0421 U	0.0548 J	0.0737 J	--
Aniline	--	12	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.381 U	0.187 U	--
Anthracene	0.73	--	0.395	0.553	0.158	0.256	0.211	0.157 J	--	--	--	0.217	0.202	0.304	0.138	0.0777 U	0.0588	0.0787	0.0947	--
Azobenzene	--	--	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
Benzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.0012	--	0.1 U	0.176	0.0762 U	0.168	0.0746 J	0.0876 J	--	--	--	0.1 U	0.203	0.685	0.207	0.0777 U	0.0926	0.126	0.171 J	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS																				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-2									MW-3								
			8/30/2005	12/16/2005	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019	8/11/2020	2/24/2021	2/7/2002	5/28/2002	8/30/2005	12/16/2005	2/23/2016	6/3/2016	9/14/2016	12/20/2016	11/22/2019
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
Benzo(a)pyrene	0.00012	--	0.1 U	0.1 UJ	0.114 U	0.131	0.075 U	0.0669 J	--	--	--	0.1 U	0.213	1.08	0.26 J	0.117 U	0.146	0.222	0.288	--
Benzo(b)fluoranthene	0.0012	--	0.1 U	0.1 U	0.114 U	0.172	0.075 U	0.0798 J	--	--	--	0.1 U	0.152	0.901	0.239	0.117 U	0.14	0.191 M-02	0.273 J	--
Benzo(g,h,i)perylene	0.4	--	0.1 U	0.1 U	0.0762 U	0.0514	0.05 U	0.0374 U	--	--	--	0.1 U	0.242	0.571	0.207	0.0777 U	0.094	0.199	0.267	--
Benzo(k)fluoranthene	0.0013	--	0.1 U	0.1 U	0.114 U	0.0937	0.075 U	0.0561 U	--	--	--	0.1 U	0.143	0.69	0.198	0.117 U	0.0737	0.0842 J	0.107 J	--
Benzoic Acid	--	42	--	--	9.52 U	9.03	6.25 U	4.67 U	--	--	--	--	--	--	--	9.71 U	5 U	9.52 U	4.67 U	--
Benzyl Alcohol	--	8.6	--	--	0.762 U	0.556	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
Bis(2-chloroethoxy)methane	0	0	--	--	0.19 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
Bis(2-chloroethyl) Ether	--	0.06	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
Bis(2-chloroisopropyl) Ether	--	--	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
Bis(2-ethylhexyl) adipate	--	--	--	--	1.9 U	0.962 U	1.25 U	0.935 U	--	--	--	--	--	--	--	1.94 U	1 U	0.952 U	0.0935 U	--
Bis(2-ethylhexyl) phthalate	--	2.2	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	1.17 J	1.81	--
Butylbenzyl phthalate	--	3	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
Carbazole	--	3.4	--	--	0.128	0.107	0.172	0.104 J	--	--	--	--	--	--	--	0.117 U	0.06 U	0.0571 U	0.0561 U	--
Chrysene	0.0013	--	0.11	0.192	0.0762 U	0.176	0.0538 J	0.0831 J	--	--	--	0.1 U	0.292	0.958	0.31	0.0777 U	0.0999	0.194	0.215 J	--
Cresols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.00012	--	0.2 U	0.2 U	0.0762 U	0.0385 U	0.05 U	0.0374 U	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.0777 U	0.04 U	0.0381 U	0.045 J	--
Dibenzofuran	--	3.7	--	--	0.4	0.406 U	0.481	0.262	--	--	--	--	--	--	--	0.0777 U	0.04 U	0.0762 U	0.0748 U	--
Diethyl Phthalate	--	3	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
Dimethyl Phthalate	--	3	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
Di-n-butyl phthalate	--	3	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
Di-n-octyl Phthalate	--	3	--	--	1.52 U	0.769 U	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
Dinoseb	--	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	6.2	--	0.994	1.65	0.434	0.796	0.737	0.614	--	--	--	0.555	1.09	1.77	0.715	0.254	0.477	0.49	0.545	--
Fluorene	3.9	--	2.56	2.36	0.566	0.561 U	0.702	0.398	--	--	--	1.33	1.49	0.634	0.547	0.311	0.292 U	0.209	0.329	--
Hexachlorobenzene	--	0.00029	--	--	0.0762 U	0.0385 U	0.05 U	0.0374 U	--	--	--	--	--	--	--	0.0777 U	0.04 U	0.0381 U	0.0374 U	--
Hexachlorobutadiene	--	--	4 U	4 U	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	2 U	2 U	4 U	4 U	0.194 U	0.1 U	0.0952 U	0.0935 U	--
Hexachlorocyclopentadiene	--	5.2	--	--	0.381 U	0.192 U	0.25 U	0.187 U	--	--	--	--	--	--	--	0.388 U	0.2 U	0.19 U	0.187 U	--
Hexachloroethane	--	3.3	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
Indeno(1,2,3-cd)pyrene	0.0012	--	0.1 U	0.1 U	0.0762 U	0.0502	0.05 U	0.0374 U	--	--	--	0.1 U	0.152	0.443	0.138	0.0777 U	0.0828	0.153	0.214	--
Isophorone	--	71	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.248 U	0.0935 U	--
Naphthalene	12	--	27.5	9.29	1.67	1.26 U	1.25	1.28 J	--	--	--	1.75	1.02	1.61	0.297	0.155 U	0.08 U	0.0762 U	0.0748 U	--
Nitrobenzene	--	3.4	--	--	0.762 U	0.385 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
N-Nitrosodimethylamine	--	0.00042	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
N-Nitrosodi-n-propylamine	--	0.0096	--	--	0.19 U	0.0962 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.1 U	0.0952 U	0.0935 U	--
N-Nitrosodiphenylamine	--	6	--	--	0.19 U	0.192 U	0.125 U	0.0935 U	--	--	--	--	--	--	--	0.194 U	0.2 U	0.19 U	0.187 U	--
Pentachlorophenol	0.03	--	--	--	0.762 U	0.575	0.735 J	0.375 J	0.071 U	0.2 J	0.17 J	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	0.071 U
Phenanthrene	6.3	--	3.99	2.55	1.09	1.47	1.85	0.724	--	--	--	1.7	2.93	2.05	1.11	0.602	0.826	0.586	0.933	--
Phenol	--	2560	--	--	7.45	23.5	1 U	0.748 U	--	--	--	--	--	--	--	1.55 U	0.8 U	0.762 U	0.748 U	--
Pyrene	10	--	0.673	1.19	0.357	0.619	0.505	0.48	--	--	--	0.592	1.22	2.2	0.877	0.264	0.547	0.602	0.67	--
Pyridine	--	--	--	--	0.762 U	0.385 U	0.5 U	0.374 U	--	--	--	--	--	--	--	0.777 U	0.4 U	0.381 U	0.374 U	--
Tetrachlorophenols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS						CENTRAL PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3			MW-4								MW-5						
			11/22/2019 Duplicate	8/11/2020 Primary	2/24/2021 Primary	2/7/2002 Primary	5/28/2002 Primary	8/30/2005 Primary	12/15/2005 Primary	2/23/2016 Primary	6/3/2016 Primary	9/15/2016 Primary	12/20/2016 Primary	2/8/2002 Primary	5/28/2002 Primary	8/29/2005 Primary	12/15/2005 Primary	2/24/2016 Primary	6/3/2016 Primary	9/15/2016 Primary
Concentration in µg/L																				
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
1,2-Dinitrobenzene	--	--	--	--	--	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	--	--	--	--	0.481 U	0.238 U	0.238 U
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
1,3-Dinitrobenzene	--	--	--	--	--	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	--	--	--	--	0.481 U	0.238 U	0.238 U
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
1,4-Dinitrobenzene	--	--	--	--	--	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	--	--	--	--	0.481 U	0.238 U	0.238 U
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	0.0381 U	0.019 U	0.019 U	0.0187 U	--	--	--	--	0.0385 U	0.019 U	0.0190 U
2,3,4,6-Tetrachlorophenol	--	1100	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2,3,5,6-Tetrachlorophenol	--	--	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2,4,5-Trichlorophenol	--	3600	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2,4,6-Trichlorophenol	--	2.4	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2,4-Dichlorophenol	--	110	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2,4-Dimethylphenol	--	730	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2,4-Dinitrophenol	--	73	--	--	--	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	--	--	--	--	0.481 U	0.238 U	0.238 U
2,4-Dinitrotoluene	--	3.4	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	490	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
2-Chloronaphthalene	--	--	--	--	--	--	--	--	--	0.019 U	0.0095 U	0.0095 U	0.0094 U	--	--	--	--	0.0192 U	0.0095 U	0.0095 U
2-Chlorophenol	--	30	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
2-methyl-4,6-dinitrophenol	--	150	--	--	--	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	--	--	--	--	0.481 U	0.238 U	0.238 U
2-Methylphenol	--	13	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
2-Nitroaniline	--	110	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
2-Nitrophenol	--	150	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
3- and 4-Methylphenol	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
3,3'-Dichlorobenzidine	--	0.028	--	--	--	--	--	--	--	0.19 U	0.476 U	0.476 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.476 U
3-Nitroaniline	--	3.2	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
4-Bromophenyl Phenyl Ether	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
4-Chloroaniline	--	150	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
4-Chlorophenyl Phenyl Ether	--	0.06	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	3.2	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
4-Nitrophenol	--	150	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
Acenaphthene	23	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.102 UJ	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 UJ	0.0192 U	0.0095 U
Acenaphthylene	--	0.2	--	--	--	--	0.1 U	0.1 U	0.1 U	0.102 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U
Aniline	--	12	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0952 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
Anthracene	0.73	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.102 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U
Azobenzene	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Benzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.0012	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.102 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.001 U

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

WEST PARCEL MONITORING WELLS						CENTRAL PARCEL MONITORING WELLS														
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-3			MW-4								MW-5						
			11/22/2019 Duplicate	8/11/2020 Primary	2/24/2021 Primary	2/7/2002 Primary	5/28/2002 Primary	8/30/2005 Primary	12/15/2005 Primary	2/23/2016 Primary	6/3/2016 Primary	9/15/2016 Primary	12/20/2016 Primary	2/8/2002 Primary	5/28/2002 Primary	8/29/2005 Primary	12/15/2005 Primary	2/24/2016 Primary	6/3/2016 Primary	9/15/2016 Primary
Concentration in µg/L																				
Benzo(a)pyrene	0.00012	--	--	--	--	0.122	0.116	0.134	0.189 J	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.1 U	0.1 U	0.1 U	0.102 UJ	0.0288 U	0.0143 U	0.0143 U
Benzo(b)fluoranthene	0.0012	--	--	--	--	0.1 U	0.1 U	0.1 U	0.122	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0288 U	0.0143 U	0.0143 U
Benzo(g,h,i)perylene	0.4	--	--	--	--	0.117	0.137	0.1 U	0.31	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Benzo(k)fluoranthene	0.0013	--	--	--	--	0.1 U	0.1 U	0.1 U	0.124	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0288 U	0.0143 U	0.0143 U
Benzoic Acid	--	42	--	--	--	--	--	--	--	2.38 U	1.2	2.38 U	1.17 U	--	--	--	--	2.4 U	1.19 U	1.19 U
Benzyl Alcohol	--	8.6	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
Bis(2-chloroethoxy)methane	0	0	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Bis(2-chloroethyl) Ether	--	0.06	--	--	--	--	--	--	--	0.0476 U	0.0476 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Bis(2-chloroisopropyl) Ether	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Bis(2-ethylhexyl) adipate	--	--	--	--	--	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	--	--	--	--	0.481 U	0.238 U	0.238 U
Bis(2-ethylhexyl) phthalate	--	2.2	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.197 J
Butylbenzyl phthalate	--	3	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.374 U	--	--	--	--	0.385 U	0.19 U	0.190 U
Carbazole	--	3.4	--	--	--	--	--	--	--	0.0286 U	0.0143 U	0.0143 U	0.014 U	--	--	--	--	0.0288 U	0.0143 U	0.0143 U
Chrysene	0.0013	--	--	--	--	0.122	0.1 U	0.121	0.129	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Cresols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.00012	--	--	--	--	0.2 U	0.2 U	0.2 U	0.204 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.2 U	0.2 U	0.2 U	0.204 U	0.0192 U	0.0095 U	0.0095 U
Dibenzofuran	--	3.7	--	--	--	--	--	--	--	0.019 U	0.0095 U	0.0095 U	0.0094 U	--	--	--	--	0.0192 U	0.0095 U	0.0095 U
Diethyl Phthalate	--	3	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
Dimethyl Phthalate	--	3	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
Di-n-butyl phthalate	--	3	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
Di-n-octyl Phthalate	--	3	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
Dinoseb	--	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	6.2	--	--	--	--	0.174	0.108	0.16	0.125	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Fluorene	3.9	--	--	--	--	0.1 U	0.1 U	0.1 U	0.102 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Hexachlorobenzene	--	0.00029	--	--	--	--	--	--	--	0.019 U	0.0095 U	0.0095 U	0.0094 U	--	--	--	--	0.0192 U	0.0095 U	0.0095 U
Hexachlorobutadiene	--	--	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Hexachlorocyclopentadiene	--	5.2	--	--	--	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	--	--	--	--	0.0962 U	0.0476 U	0.0476 U
Hexachloroethane	--	3.3	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Indeno(1,2,3-cd)pyrene	0.0012	--	--	--	--	0.1 U	0.1 U	0.1 U	0.185	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Isophorone	--	71	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0619 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0619 U
Naphthalene	12	--	--	--	--	0.188	0.218	0.311	0.198	0.0381 U	0.019 U	0.019 U	0.0187 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0385 U	0.019 U	0.019 U
Nitrobenzene	--	3.4	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
N-Nitrosodimethylamine	--	0.00042	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
N-Nitrosodi-n-propylamine	--	0.0096	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
N-Nitrosodiphenylamine	--	6	--	--	--	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	--	--	--	--	0.0481 U	0.0238 U	0.0238 U
Pentachlorophenol	0.03	--	0.071 U	0.096 U	0.071 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.0952 U	0.0952 U
Phenanthrene	6.3	--	--	--	--	0.109	0.118	0.163	0.132	0.019 U	0.0095 U	0.0095 U	0.0098 J	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Phenol	--	2560	--	--	--	--	--	--	--	0.381 U	0.19 U	0.19 U	0.187 U	--	--	--	--	0.385 U	0.19 U	0.190 U
Pyrene	10	--	--	--	--	0.312	0.238	0.292	0.187	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.1 U	0.1 U	0.1 U	0.102 U	0.0192 U	0.0095 U	0.0095 U
Pyridine	--	--	--	--	--	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	--	--	--	--	0.192 U	0.19 U	0.0952 U
Tetrachlorophenols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS																EAST PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5	MW-6								MW-8				MW-35s	MW-7			
			12/19/2016	2/8/2002	5/29/2002	8/30/2005	12/15/2005	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016	11/1/1999	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--
1,2,4-Trichlorobenzene	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
1,2-Dichlorobenzene	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
1,2-Dinitrobenzene	--	--	0.234 U	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	0.481 U	0.238 U	0.238 U	0.231 U	--	0.481 U	0.238 U	0.238 U	0.234 U
1,3-Dichlorobenzene	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
1,3-Dinitrobenzene	--	--	0.234 U	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	0.481 U	0.238 U	0.238 U	0.231 U	--	0.481 U	0.238 U	0.238 U	0.234 U
1,4-Dichlorobenzene	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
1,4-Dinitrobenzene	--	--	0.234 U	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	0.481 U	0.238 U	0.238 U	0.231 U	--	0.481 U	0.238 U	0.238 U	0.234 U
1-Methylnaphthalene	--	--	0.0187 U	--	--	--	--	0.0381 U	0.019 U	0.0190 U	0.0187 U	0.0385 U	0.019 U	0.0190 U	0.0185 U	--	0.0385 U	0.019 U	0.0190 U	0.0187 U
2,3,4,6-Tetrachlorophenol	--	1100	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	1 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2,3,5,6-Tetrachlorophenol	--	--	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	1 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2,4,5-Trichlorophenol	--	3600	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	6 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2,4,6-Trichlorophenol	--	2.4	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	6 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2,4-Dichlorophenol	--	110	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	6 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2,4-Dimethylphenol	--	730	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	1 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2,4-Dinitrophenol	--	73	0.234 U	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	0.481 U	0.238 U	0.238 U	0.231 U	10 U	0.481 U	0.0476 U	0.238 U	0.234 U
2,4-Dinitrotoluene	--	3.4	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	6 U	0.192 U	0.952 U	0.0952 U	0.0935 U
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--
2,6-Dinitrotoluene	--	490	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	6 U	0.192 U	0.952 U	0.0952 U	0.0935 U
2-Chloronaphthalene	--	--	0.0094 U	--	--	--	--	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
2-Chlorophenol	--	30	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	6 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
2-methyl-4,6-dinitrophenol	--	150	0.234 U	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	0.481 U	0.238 U	0.238 U	0.231 U	10 U	0.481 U	0.238 U	0.238 U	0.234 U
2-Methylphenol	--	13	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	6 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
2-Nitroaniline	--	110	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	--	0.385 U	0.19 U	0.190 U	0.187 U
2-Nitrophenol	--	150	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	10 U	0.192 U	0.0952 U	0.0952 U	0.0935 U
3- and 4-Methylphenol	--	--	0.0234 U	--	--	--	--	0.0655	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U
3,3'-Dichlorobenzidine	--	0.028	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.476 U	0.0935 U	0.192 U	0.0952 U	0.476 U	0.0926 U	--	0.192 U	0.0952 U	0.476 U	0.0935 U
3-Nitroaniline	--	3.2	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	--	0.385 U	0.19 U	0.190 U	0.187 U
4-Bromophenyl Phenyl Ether	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
4-Chloro-3-methylphenol	--	--	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	6 U	0.192 U	0.0952 U	0.0952 U	0.0935 U
4-Chloroaniline	--	150	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U
4-Chlorophenyl Phenyl Ether	--	0.06	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U
4-Methylphenol	--	180	--	--	--	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--
4-Nitroaniline	--	3.2	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	--	0.385 U	0.19 U	0.190 U	0.187 U
4-Nitrophenol	--	150	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	--	0.192 U	0.0952 U	0.0952 U	0.0935 U
Acenaphthene	23	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Acenaphthylene	--	0.2	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Aniline	--	12	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0952 U	0.0467 U	0.0962 U	0.0476 U	0.0952 U	0.0463 U	--	0.0962 U	0.0476 U	0.0952 U	0.0467 U
Anthracene	0.73	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0867	0.0149 J	0.0296 B	0.0363
Azobenzene	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Benzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.0012	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.001 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

CENTRAL PARCEL MONITORING WELLS																EAST PARCEL MONITORING WELLS				
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-5	MW-6								MW-8				MW-35s	MW-7			
			12/19/2016	2/8/2002	5/29/2002	8/30/2005	12/15/2005	2/23/2016	6/6/2016	9/15/2016	12/19/2016	2/24/2016	6/6/2016	9/15/2016	12/19/2016	11/1/1999	2/24/2016	6/6/2016	9/15/2016	12/19/2016
			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Concentration in µg/L																				
Benzo(a)pyrene	0.00012	--	0.014 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.0288 U	0.0143 U	0.0143 U	0.0139 U	1 U	0.0288 U	0.0143 U	0.0143 U	0.014 U
Benzo(b)fluoranthene	0.0012	--	0.014 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.0288 U	0.0143 U	0.0143 U	0.0139 U	1 U	0.0288 U	0.0143 U	0.0143 U	0.014 U
Benzo(g,h,i)perylene	0.4	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	6 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Benzo(k)fluoranthene	0.0013	--	0.014 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.0288 U	0.0143 U	0.0143 U	0.0139 U	1 U	0.0288 U	0.0143 U	0.0143 U	0.014 U
Benzoic Acid	--	42	1.17 U	--	--	--	--	2.38 U	1.19 U	2.38 U	1.17 U	2.4 U	1.22 J	2.38 U	1.16 U	--	2.4 U	1.19 U	2.38 U	1.17 U
Benzyl Alcohol	--	8.6	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	--	0.192 U	0.0952 U	0.0952 U	0.0935 U
Bis(2-chloroethoxy)methane	0	0	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Bis(2-chloroethyl) Ether	--	0.06	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Bis(2-chloroisopropyl) Ether	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0095 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Bis(2-ethylhexyl) adipate	--	--	0.234 U	--	--	--	--	0.476 U	0.238 U	0.238 U	0.234 U	0.481 U	0.238 U	0.238 U	0.0231 U	1 U	0.481 U	0.238 U	0.238 U	0.234 U
Bis(2-ethylhexyl) phthalate	--	2.2	0.187 U	--	--	--	--	0.381 U	0.19 U	0.197 JX	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	1 U	0.385 U	0.19 U	0.190 U	0.187 U
Butylbenzyl phthalate	--	3	0.187 U	--	--	--	--	0.381 U	0.19 U	0.381 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	1 U	0.385 U	0.19 U	0.190 U	0.187 U
Carbazole	--	3.4	0.014 U	--	--	--	--	0.0286 U	0.0143 U	0.0143 U	0.014 U	0.0288 U	0.0143 U	0.0143 U	0.0139 U	--	0.0288 U	0.0143 U	0.0143 U	0.014 U
Chrysene	0.0013	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Cresols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.00012	--	0.0094 U	0.2 U	0.2 U	0.2 U	0.2 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	6 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Dibenzofuran	--	3.7	0.0094 U	--	--	--	--	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Diethyl Phthalate	--	3	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	1 U	0.385 U	0.19 U	0.190 U	0.187 U
Dimethyl Phthalate	--	3	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	1 U	0.385 U	0.19 U	0.190 U	0.187 U
Di-n-butyl phthalate	--	3	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	1 U	0.385 U	0.19 U	0.190 U	0.187 U
Di-n-octyl Phthalate	--	3	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	1 U	0.385 U	0.19 U	0.190 U	0.187 U
Dinoseb	--	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	6.2	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0325	0.0198	0.0131 J	0.0147 J	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Fluorene	3.9	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Hexachlorobenzene	--	0.00029	0.0094 U	--	--	--	--	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	6 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Hexachlorobutadiene	--	--	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Hexachlorocyclopentadiene	--	5.2	0.0467 U	--	--	--	--	0.0952 U	0.0476 U	0.0476 U	0.0467 U	0.0962 U	0.0476 U	0.0476 U	0.0463 U	1 U	0.0962 U	0.0476 U	0.0476 U	0.0467 U
Hexachloroethane	--	3.3	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Indeno(1,2,3-cd)pyrene	0.0012	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0192 U	0.0095 U	0.0095 U	0.0093 U	6 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Isophorone	--	71	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0619 U	0.0234 U	0.0481 U	0.0238 U	0.0619 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0619 U	0.0234 U
Naphthalene	12	--	0.0187 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0381 U	0.019 U	0.0213 JX	0.0187 U	0.0385 U	0.019 U	0.019 U	0.037 U	1 U	0.0385 U	0.019 U	0.019 U	0.0374 U
Nitrobenzene	--	3.4	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	6 U	0.192 U	0.952 U	0.0952 U	0.0935 U
N-Nitrosodimethylamine	--	0.00042	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	--	0.0481 U	0.0238 U	0.0238 U	0.0234 U
N-Nitrosodi-n-propylamine	--	0.0096	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0231 U	1 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
N-Nitrosodiphenylamine	--	6	0.0234 U	--	--	--	--	0.0476 U	0.0238 U	0.0238 U	0.0234 U	0.0481 U	0.0238 U	0.0238 U	0.0463 U	6 U	0.0481 U	0.0238 U	0.0238 U	0.0234 U
Pentachlorophenol	0.03	--	0.0935 U	--	--	--	--	0.19 U	0.0952 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	6 U	0.192 U	0.0952 U	0.0952 U	0.0935 U
Phenanthrene	6.3	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0283	0.0096 J	0.0095 U	0.0211	1 U	0.0192 U	0.0095 U	0.0095 U	0.0094 U
Phenol	--	2560	0.187 U	--	--	--	--	0.381 U	0.19 U	0.190 U	0.187 U	0.385 U	0.19 U	0.190 U	0.185 U	6 U	0.385 U	0.19 U	0.190 U	0.187 U
Pyrene	10	--	0.0094 U	0.1 U	0.1 U	0.1 U	0.1 U	0.019 U	0.0095 U	0.0095 U	0.0094 U	0.0287	0.0225	0.0157 J	0.0199	1 U	0.0192 U	0.0095 U	0.0113 J	0.0127 J
Pyridine	--	--	0.0935 U	--	--	--	--	0.19 U	0.19 U	0.0952 U	0.0935 U	0.192 U	0.0952 U	0.0952 U	0.0926 U	--	0.192 U	0.0952 U	0.0952 U	0.0935 U
Tetrachlorophenols	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS										
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-9							
			2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	12/20/2016
			Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary
Concentration in µg/L										
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,2-Dichlorobenzene	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,2-Dinitrobenzene	--	--	0.476 U	0.476 U	0.238 U	0.258 U	0.238 U	0.238 U	0.234 U	0.234 U
1,3-Dichlorobenzene	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,3-Dinitrobenzene	--	--	0.476 U	0.476 U	0.238 U	0.258 U	0.238 U	0.238 U	0.234 U	0.234 U
1,4-Dichlorobenzene	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
1,4-Dinitrobenzene	--	--	0.476 U	0.476 U	0.238 U	0.258 U	0.238 U	0.238 U	0.234 U	0.234 U
1-Methylnaphthalene	--	--	0.0381 U	0.381 U	0.019 U	0.0206 U	0.019 U	0.019 U	0.0187 U	0.0187 U
2,3,4,6-Tetrachlorophenol	--	1100	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2,3,5,6-Tetrachlorophenol	--	--	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2,4,5-Trichlorophenol	--	3600	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2,4,6-Trichlorophenol	--	2.4	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2,4-Dichlorophenol	--	110	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2,4-Dimethylphenol	--	730	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2,4-Dinitrophenol	--	73	0.476 U	0.476 U	0.238 U	0.258 U	0.238 U	0.238 U	0.234 U	0.234 U
2,4-Dinitrotoluene	--	3.4	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
2,6-Dichlorophenol	--	37	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	490	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
2-Chloronaphthalene	--	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
2-Chlorophenol	--	30	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
2-methyl-4,6-dinitrophenol	--	150	0.476 U	0.476 U	0.238 U	0.258 U	0.238 U	0.238 U	0.234 U	0.234 U
2-Methylphenol	--	13	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
2-Nitroaniline	--	110	0.381 U	0.381 U	0.19 U	0.206 U	0.190 U	0.190 U	0.187 U	0.187 U
2-Nitrophenol	--	150	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
3- and 4-Methylphenol	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
3,3'-Dichlorobenzidine	--	0.028	0.19 U	0.19 U	0.0952 U	0.103 U	0.476 U	0.476 U	0.0935 U	0.0935 U
3-Nitroaniline	--	3.2	0.381 U	0.381 U	0.19 U	0.206 U	0.190 U	0.190 U	0.187 U	0.187 U
4-Bromophenyl Phenyl Ether	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
4-Chloro-3-methylphenol	--	--	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
4-Chloroaniline	--	150	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
4-Chlorophenyl Phenyl Ether	--	0.06	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
4-Methylphenol	--	180	--	--	--	--	--	--	--	--
4-Nitroaniline	--	3.2	0.381 U	0.381 U	0.19 U	0.206 U	0.190 U	0.190 U	0.187 U	0.187 U
4-Nitrophenol	--	150	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
Acenaphthene	23	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Acenaphthylene	--	0.2	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Aniline	--	12	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0952 U	0.0952 U	0.0467 U	0.0467 U
Anthracene	0.73	--	0.0418	0.0426	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0098 J	0.0103 J
Azobenzene	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Benzidine	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.0012	--	0.0418 U	0.019 U	0.0095 U	0.0155 U	0.0104 J	0.0095 U	0.0122 J	0.0146 J

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

EAST PARCEL MONITORING WELLS										
Sample ID Date Sample Type	PHSS Cleanup Level	JSCS Screening Level Value	MW-9							
			2/24/2016	2/24/2016	6/6/2016	6/6/2016	9/15/2016	9/15/2016	12/20/2016	12/20/2016
			Primary	Duplicate	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary
Concentration in µg/L										
Benzo(a)pyrene	0.00012	--	0.0286 U	0.0286 U	0.0143 U	0.0155 U	0.0143 U	0.0143 U	0.014 U	0.014 U
Benzo(b)fluoranthene	0.0012	--	0.0286 U	0.0286 U	0.0143 U	0.0155 U	0.0143 U	0.0143 U	0.014 U	0.014 U
Benzo(g,h,i)perylene	0.4	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Benzo(k)fluoranthene	0.0013	--	0.0286 U	0.0286 U	0.0143 U	0.0155 U	0.0143 U	0.0143 U	0.014 U	0.014 U
Benzoic Acid	--	42	2.38 U	2.38 U	1.19 U	1.29 U	2.38 U	2.38 U	1.17 U	1.17 U
Benzyl Alcohol	--	8.6	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
Bis(2-chloroethoxy)methane	0	0	0.0467 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Bis(2-chloroethyl) Ether	--	0.06	0.0467 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Bis(2-chloroisopropyl) Ether	--	--	0.0467 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Bis(2-ethylhexyl) adipate	--	--	0.0476 U	0.476 U	0.238 U	0.258 U	0.238 U	0.238 U	0.234 U	0.234 U
Bis(2-ethylhexyl) phthalate	--	2.2	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.187 U	0.187 U
Butylbenzyl phthalate	--	3	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.374 U	0.187 U
Carbazole	--	3.4	0.0286 U	0.0286 U	0.0143 U	0.0155 U	0.0143 U	0.0143 U	0.014 U	0.014 U
Chrysene	0.0013	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.01 J
Cresols	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.00012	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Dibenzofuran	--	3.7	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Diethyl Phthalate	--	3	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.187 U	0.187 U
Dimethyl Phthalate	--	3	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.187 U	0.187 U
Di-n-butyl phthalate	--	3	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.187 U	0.187 U
Di-n-octyl Phthalate	--	3	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.187 U	0.187 U
Dinoseb	--	7	--	--	--	--	--	--	--	--
Fluoranthene	6.2	--	0.0816	0.0834	0.0283	0.0182 J	0.0255	0.032	0.0404	0.0408
Fluorene	3.9	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Hexachlorobenzene	--	0.00029	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Hexachlorobutadiene	--	--	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Hexachlorocyclopentadiene	--	5.2	0.0952 U	0.0952 U	0.0476 U	0.0515 U	0.0476 U	0.0476 U	0.0467 U	0.0467 U
Hexachloroethane	--	3.3	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Indeno(1,2,3-cd)pyrene	0.0012	--	0.019 U	0.019 U	0.0095 U	0.0103 U	0.0095 U	0.0095 U	0.0094 U	0.0094 U
Isophorone	--	71	0.0476 U	0.0476 U	0.0238 U	0.0258 U	0.0619 U	0.0619 U	0.0234 U	0.0234 U
Naphthalene	12	--	0.0381 U	0.381 U	0.019 U	0.0206 U	0.019 U	0.019 U	0.0187 U	0.0187 U
Nitrobenzene	--	3.4	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
N-Nitrosodimethylamine	--	0.00042	0.0467 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
N-Nitrosodi-n-propylamine	--	0.0096	0.0467 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
N-Nitrosodiphenylamine	--	6	0.0467 U	0.0476 U	0.0238 U	0.0258 U	0.0238 U	0.0238 U	0.0234 U	0.0234 U
Pentachlorophenol	0.03	--	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
Phenanthrene	6.3	--	0.105	0.101	0.0096 J	0.0103 U	0.0095 U	0.0095 U	0.013 J	0.013
Phenol	--	2560	0.381 U	0.381 U	0.19 U	0.206 U	0.19 U	0.19 U	0.187 U	0.187 U
Pyrene	10	--	0.0991	0.101	0.0435	0.0255	0.0523	0.0561	0.0796	0.0724
Pyridine	--	--	0.19 U	0.19 U	0.0952 U	0.103 U	0.0952 U	0.0952 U	0.0935 U	0.0935 U
Tetrachlorophenols	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-8
SVOCs in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

- 1. µg/L = micrograms per liter
- 2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
- 3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
- 4. J = Estimated value after QA review.
- 5. U = Non-detected value.
- 6. X = Surrogate recovery is not within method control limits
- 7. Shading indicates a concentration equal to or exceeding a screening level
- 8. SVOCs = Semi-volatile Organic Compounds

Table A-9
 Petroleum Hydrocarbons in Groundwater
 Willamette Cove Upland Facility
 Portland, Oregon

Sample ID	Date	Sample Type	Diesel Range Hydrocarbons	Gasoline Range Hydrocarbons	Jet Fuel	Kerosene	Mineral Spirits	Motor Oil/Other	Oil Range Hydrocarbons	TPH
PHSS Cleanup Level			--	--	--	--	--	--	--	--
JSCS Screening Level Value			--	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES										
SE/E-19	1/27/1989	Primary	10 U	10 U	--	--	--	10 U	--	290000
TB-1W	10/20/1995	Primary	50 U	50 U	50 U	50 U	50 U	2180	--	--
CENTRAL PARCEL GRAB SAMPLES										
TB-2W	10/19/1995	Primary	50 U	50 U	50 U	50 U	50 U	429	--	--
WC-4	9/30/2010	Primary	130	--	--	--	--	--	370 J	--
WC-5	9/30/2010	Primary	35 U	--	--	--	--	--	58 U	--
WC-6	9/30/2010	Primary	36 U	--	--	--	--	--	60 U	--
WC-7	9/29/2010	Primary	150	--	--	--	--	--	180 J	--
WC-8	9/29/2010	Primary	35 U	--	--	--	--	--	58 U	--
EAST PARCEL GRAB SAMPLES										
TB-3W	10/19/1995	Primary	50 U	50 U	50 U	50 U	50 U	860	--	--
TB-4W	10/19/1995	Primary	50 U	50 U	50 U	50 U	50 U	544	--	--
TRENCH 2	9/28/2010	Primary	110	--	--	--	--	--	290 J	--
TRENCH 4	9/29/2010	Primary	1400	--	--	--	--	--	1000	--
WEST PARCEL MONITORING WELLS										
MW-1	8/30/2005	Primary	250 U	--	--	--	--	--	500 U	--
	6/3/2016	Primary	40.8 U	50 U	--	--	--	--	1860 U	--
	9/14/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--
	11/22/2019	Primary	--	--	--	--	--	--	--	--
	8/11/2020	Primary	--	--	--	--	--	--	--	--
	2/24/2021	Primary	--	--	--	--	--	--	--	--
	2/24/2021	Duplicate	--	--	--	--	--	--	--	--
MW-2	8/30/2005	Primary	250 U	--	--	--	--	--	500 U	--
	6/3/2016	Primary	121	50 U	--	--	--	--	182 U	--
	9/14/2016	Primary	150	100 U	--	--	--	--	151 U	--
	12/20/2016	Primary	--	--	--	--	--	--	--	--
	11/22/2019	Primary	--	--	--	--	--	--	--	--
	8/11/2020	Primary	--	--	--	--	--	--	--	--
	2/23/2021	Primary	--	--	--	--	--	--	--	--
MW-3	8/30/2005	Primary	274	--	--	--	--	--	500 U	--
	6/3/2016	Primary	102	50 U	--	--	--	--	348	--
	9/14/2016	Primary	392	100 U	--	--	--	--	558	--
	11/22/2019	Primary	--	--	--	--	--	--	--	--
	11/22/2019	Duplicate	--	--	--	--	--	--	--	--
	8/12/2020	Primary	--	--	--	--	--	--	--	--
	8/12/2020	Duplicate	--	--	--	--	--	--	--	--
	3/1/2021	Primary	--	--	--	--	--	--	--	--
CENTRAL PARCEL MONITORING WELLS										
MW-4	8/30/2005	Primary	250 U	--	--	--	--	--	500 U	--
	6/3/2016	Primary	37.7 U	50 U	--	--	--	--	75.5 U	--
	9/15/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--
MW-5	8/29/2005	Primary	250 UJ	--	--	--	--	--	500 UJ	--
	6/3/2016	Primary	38.8 U	50 U	--	--	--	--	77.7 U	--
	9/15/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--
MW-6	8/30/2005	Primary	250 UJ	--	--	--	--	--	500 UJ	--
	12/15/2005	Primary	238 U	--	--	--	--	--	490 U	--
	6/6/2016	Primary	42.9 J	50 U	--	--	--	--	76.2 U	--
	9/15/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--
MW-8	6/6/2016	Primary	37.7 U	50 U	--	--	--	--	75.5 U	--
	9/15/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--
EAST PARCEL MONITORING WELLS										
MW-35s	11/1/1999	Primary	20 U	20 U	20 U	20 U	20 U	20 U	--	--
MW-7	12/16/2005	Primary	245 U	--	--	--	--	--	490 U	--
	6/6/2016	Primary	37.7 U	50 U	--	--	--	--	75.5 U	--
	9/15/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--
MW-9	6/6/2016	Duplicate	37.7 U	50 U	--	--	--	--	75.5 U	--
	6/6/2016	Primary	37.7 U	50 U	--	--	--	--	75.5 U	--
	9/15/2016	Duplicate	75.5 U	100 U	--	--	--	--	151 U	--
	9/15/2016	Primary	75.5 U	100 U	--	--	--	--	151 U	--

Please see notes at end of table.

Table A-9
Petroroleum Hydrocarbons in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Aliphatic Hydrocarbons					Aromatic Hydrocarbons		
			C8-C10	C10-C12	C12-C16	C16-C21	C21-C34	C8-C10	C10-C12	C12-C16
PHSS Cleanup Level			--	2.6	--	--	--	--	--	--
JSCS Screening Level Value			--	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES										
SE/E-19	1/27/1989	Primary	--	--	--	--	--	--	--	--
TB-1W	10/20/1995	Primary	--	--	--	--	--	--	--	--
CENTRAL PARCEL GRAB SAMPLES										
TB-2W	10/19/1995	Primary	--	--	--	--	--	--	--	--
WC-4	9/30/2010	Primary	--	--	--	--	--	--	--	--
WC-5	9/30/2010	Primary	--	--	--	--	--	--	--	--
WC-6	9/30/2010	Primary	--	--	--	--	--	--	--	--
WC-7	9/29/2010	Primary	--	--	--	--	--	--	--	--
WC-8	9/29/2010	Primary	--	--	--	--	--	--	--	--
EAST PARCEL GRAB SAMPLES										
TB-3W	10/19/1995	Primary	--	--	--	--	--	--	--	--
TB-4W	10/19/1995	Primary	--	--	--	--	--	--	--	--
TRENCH 2	9/28/2010	Primary	--	--	--	--	--	--	--	--
TRENCH 4	9/29/2010	Primary	--	--	--	--	--	--	--	--
WEST PARCEL MONITORING WELLS										
MW-1	8/30/2005	Primary	--	--	--	--	--	--	--	--
	6/3/2016	Primary	--	--	--	--	--	--	--	--
	9/14/2016	Primary	--	--	--	--	--	--	--	--
	11/22/2019	Primary	6.75 UJ	5.85 U	7.15 U	6.42 U	8.88 U	3.59 UJ	7.54 U	7.97 U
	8/11/2020	Primary	301 J+	23.9	91.1	6.42 U	8.88 U	30.3 J-	25.2	78.3
	2/24/2021	Primary	--	20.6 U	--	--	--	--	--	--
2/24/2021	Duplicate	--	20.5 U	--	--	--	--	--	--	
MW-2	8/30/2005	Primary	--	--	--	--	--	--	--	--
	6/3/2016	Primary	--	--	--	--	--	--	--	--
	9/14/2016	Primary	--	--	--	--	--	--	--	--
	12/20/2016	Primary	--	--	--	--	--	--	--	--
	11/22/2019	Primary	5.9 UJ	5.89 UJ	7.2 UJ	6.5 UJ	8.9 UJ	3.6 UJ	7.6 U	8.0 U
	8/11/2020	Primary	176 J+	33.4	7.2 U	64.3 U	8.9 U	9.5 J-	25.0	71.8
2/23/2021	Primary	--	20.6 U	--	--	--	--	--	--	
MW-3	8/30/2005	Primary	--	--	--	--	--	--	--	--
	6/3/2016	Primary	--	--	--	--	--	--	--	--
	9/14/2016	Primary	--	--	--	--	--	--	--	--
	11/22/2019	Primary	25.50 J-	5.87 U	7.16 U	6.44 U	8.89 U	3.60 UJ	7.55 U	7.99 U
	11/22/2019	Duplicate	6.78 UJ	5.87 U	7.17 U	6.45 U	8.91 U	3.6 UJ	7.56 U	8 U
	8/12/2020	Primary	56.3 J+	31.3 J	77.4 J	98.7	6.43 U	16.1 J-	7.54 U	7.98 U
	8/12/2020	Duplicate	34.4 J+	50.6 J	42.8 J	6.39 U	8.84 U	42.9 J-	18.3 J	74.8
3/1/2021	Primary	--	20.3 UJ	--	--	--	--	--	--	
CENTRAL PARCEL MONITORING WELLS										
MW-4	8/30/2005	Primary	--	--	--	--	--	--	--	--
	6/3/2016	Primary	--	--	--	--	--	--	--	--
	9/15/2016	Primary	--	--	--	--	--	--	--	--
MW-5	8/29/2005	Primary	--	--	--	--	--	--	--	--
	6/3/2016	Primary	--	--	--	--	--	--	--	--
	9/15/2016	Primary	--	--	--	--	--	--	--	--
MW-6	8/30/2005	Primary	--	--	--	--	--	--	--	--
	12/15/2005	Primary	--	--	--	--	--	--	--	--
	6/6/2016	Primary	--	--	--	--	--	--	--	--
	9/15/2016	Primary	--	--	--	--	--	--	--	--
MW-8	6/6/2016	Primary	--	--	--	--	--	--	--	--
	9/15/2016	Primary	--	--	--	--	--	--	--	--
EAST PARCEL MONITORING WELLS										
MW-35s	11/1/1999	Primary	--	--	--	--	--	--	--	--
MW-7	12/16/2005	Primary	--	--	--	--	--	--	--	--
	6/6/2016	Primary	--	--	--	--	--	--	--	--
	9/15/2016	Primary	--	--	--	--	--	--	--	--
MW-9	6/6/2016	Duplicate	--	--	--	--	--	--	--	--
	6/6/2016	Primary	--	--	--	--	--	--	--	--
	9/15/2016	Duplicate	--	--	--	--	--	--	--	--
	9/15/2016	Primary	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table A-9
 Petroleum Hydrocarbons in Groundwater
 Willamette Cove Upland Facility
 Portland, Oregon

Sample ID	Date	Sample Type	Aromatic Hydrocarbons	
			C16-C21	C21-C34
PHSS Cleanup Level			--	--
JSCS Screening Level Value			--	--
WEST PARCEL GRAB SAMPLES				
SE/E-19 TB-1W	1/27/1989 10/20/1995	Primary Primary	-- --	-- --
CENTRAL PARCEL GRAB SAMPLES				
TB-2W	10/19/1995	Primary	--	--
WC-4	9/30/2010	Primary	--	--
WC-5	9/30/2010	Primary	--	--
WC-6	9/30/2010	Primary	--	--
WC-7	9/29/2010	Primary	--	--
WC-8	9/29/2010	Primary	--	--
EAST PARCEL GRAB SAMPLES				
TB-3W	10/19/1995	Primary	--	--
TB-4W	10/19/1995	Primary	--	--
TRENCH 2	9/28/2010	Primary	--	--
TRENCH 4	9/29/2010	Primary	--	--
WEST PARCEL MONITORING WELLS				
MW-1	8/30/2005	Primary	--	--
	6/3/2016	Primary	--	--
	9/14/2016	Primary	--	--
	11/22/2019	Primary	2.89 U	6.45 U
	8/11/2020	Primary	19.8 J	6.54
	2/24/2021	Primary	--	--
2/24/2021	Duplicate	--	--	
MW-2	8/30/2005	Primary	--	--
	6/3/2016	Primary	--	--
	9/14/2016	Primary	--	--
	12/20/2016	Primary	--	--
	11/22/2019	Primary	2.9 U	6.6 U
	8/11/2020	Primary	2.9 U	6.6 U
2/23/2021	Primary	--	--	
MW-3	8/30/2005	Primary	--	--
	6/3/2016	Primary	--	--
	9/14/2016	Primary	--	--
	11/22/2019	Primary	2.89 U	6.56 U
	11/22/2019	Duplicate	2.9 U	6.57 U
	8/12/2020	Primary	2.89 U	6.55 U
	8/12/2020	Duplicate	10.2 J	39.1
	3/1/2021	Primary	--	--
CENTRAL PARCEL MONITORING WELLS				
MW-4	8/30/2005	Primary	--	--
	6/3/2016	Primary	--	--
	9/15/2016	Primary	--	--
MW-5	8/29/2005	Primary	--	--
	6/3/2016	Primary	--	--
	9/15/2016	Primary	--	--
MW-6	8/30/2005	Primary	--	--
	12/15/2005	Primary	--	--
	6/6/2016	Primary	--	--
	9/15/2016	Primary	--	--
MW-8	6/6/2016	Primary	--	--
	9/15/2016	Primary	--	--
EAST PARCEL MONITORING WELLS				
MW-35s	11/1/1999	Primary	--	--
MW-7	12/16/2005	Primary	--	--
	6/6/2016	Primary	--	--
	9/15/2016	Primary	--	--
	MW-9	6/6/2016	Duplicate	--
6/6/2016		Primary	--	--
9/15/2016		Duplicate	--	--
9/15/2016		Primary	--	--

Please see notes at end of table.

Table A-9
Petroleum Hydrocarbons in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

1. µg/L = micrograms per liter
2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
4. J = Estimated value after QA review.
5. U = Non-detected value.
6. UJ = The not detected result is estimated. The reporting limit may be inaccurate or imprecise.
7. J+ = Result is estimated and may be biased high.
8. J- = Result is estimated and may be biased low.
9. Shading indicates a concentration equal to or exceeding a screening level
10. TPH = Total Petroleum Hydrocarbons

Table A-10
Other Analytes in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Formaldehyde	Total Organic Halides	Arsenic III	Arsenic V	Nitrate + Nitrite Nitrogen	Nitrate-Nitrogen	Nitrite-Nitrogen	Sulfate	Sulfide	Total Organic Carbon
			Concentration in µg/L									
PHSS Cleanup Level			--	--	--	--	--	--	--	--	--	--
JSCS Screening Level Value			--	--	190	--	--	--	--	--	--	--
WEST PARCEL GRAB SAMPLES												
B-2	5/11/2001	Primary	50 UJ	--	--	--	--	--	--	--	--	--
B-3	5/10/2001	Primary	50 UJ	--	--	--	--	--	--	--	--	--
B-4	5/8/2001	Primary	50 UJ	--	--	--	--	--	--	--	--	--
B-5	5/10/2001	Primary	50 UJ	--	--	--	--	--	--	--	--	--
B-8	5/11/2001	Primary	50 UJ	--	--	--	--	--	--	--	--	--
SE/E-11	12/6/1988	Primary	--	12	--	--	--	--	--	--	--	--
SE/E-12	12/9/1988	Primary	--	7	--	--	--	--	--	--	--	--
SE/E-13	12/9/1988	Primary	--	17	--	--	--	--	--	--	--	--
CENTRAL PARCEL GRAB SAMPLES												
SE/E-10	12/8/1988	Primary	--	14	--	--	--	--	--	--	--	--
SE/E-7	12/7/1988	Primary	--	26	--	--	--	--	--	--	--	--
SE/E-8	12/7/1988	Primary	--	13	--	--	--	--	--	--	--	--
SE/E-9	12/8/1988	Primary	--	28	--	--	--	--	--	--	--	--
EAST PARCEL GRAB SAMPLES												
B-26	5/11/2001	Primary	50 UJ	--	--	--	--	--	--	--	--	--
HA-4	12/12/1988	Primary	--	45	--	--	--	--	--	--	--	--
SE/E-1	12/5/1988	Primary	--	39	--	--	--	--	--	--	--	--
SE/E-3	12/6/1988	Primary	--	34	--	--	--	--	--	--	--	--
SE/E-4	12/6/1988	Primary	--	44	--	--	--	--	--	--	--	--
SE/E-5	12/6/1988	Primary	--	21	--	--	--	--	--	--	--	--
WEST PARCEL MONITORING WELLS												
MW-1	2/23/2016	Primary	--	--	21.9	0.32 U	20 U	--	--	1000 U	50 U	15700
	6/3/2016	Primary	--	--	40.6	5.01 J	--	25 U	25 U	1180	30 U	10600
	9/14/2016	Primary	--	--	49.1 H	15 H	--	25 U	25 U	1000 U	30 U	5270
	12/20/2016	Primary	--	--	35	7.19 B	--	250 U	250 U	1000 U	30 U	10500
MW-2	2/23/2016	Primary	--	--	2.15	0.032 U	40	--	--	31300	2400	26800
	6/3/2016	Primary	--	--	2.6	1.06 J	--	214	25 U	30400	3300	24200
	12/20/2016	Primary	--	--	5.75	4.82 B	--	250 U	250 U	36900	200	19300
MW-3	2/23/2016	Primary	--	--	9.47	0.16 U	20 U	--	--	1000 U	50 U	23100
	6/3/2016	Primary	--	--	10.2	7.75	--	25 U	25 U	24200	30 U	21500
	9/14/2016	Primary	--	--	4.82 H	14.2 H	--	1200	25 U	4290	30 U	9320
	12/20/2016	Primary	--	--	7.31	5.41	--	250 U	250 U	1000 U	30 U	16200

Please see notes at end of table.

Updated Groundwater Source Control Evaluation

Willamette Cove Upland Facility

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Table A-10
Other Analytes in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Sample ID	Date	Sample Type	Formaldehyde	Total Organic Halides	Arsenic III	Arsenic V	Nitrate + Nitrite Nitrogen	Nitrate-Nitrogen	Nitrite-Nitrogen	Sulfate	Sulfide	Total Organic Carbon
			Concentration in µg/L									
PHSS Cleanup Level			--	--	--	--	--	--	--	--	--	--
JSCS Screening Level Value			--	--	190	--	--	--	--	--	--	--
CENTRAL PARCEL MONITORING WELLS												
MW-4	2/23/2016	Primary	--	--	1.16	0.08 U	20 U	--	--	10300	50 U	8540
	6/3/2016	Primary	--	--	0.008 U	0.261	--	1340	25 U	17500	30 U	1580
	9/15/2016	Primary	--	--	0.023 JH	0.235 H	--	250	25 U	18500	30 U	1310
	12/20/2016	Primary	--	--	0.009 B	0.232	--	672	250 U	18200	30 U	1500
MW-5	2/24/2016	Primary	--	--	0.009 J	0.008 U	2600	--	--	16400	50 U	6920
	6/3/2016	Primary	--	--	0.169	1.29	--	6110	25 U	28600	30 U	3190
	9/15/2016	Primary	--	--	0.017 JH	0.57 H	--	5070	25 U	18600	30 U	1000 U
	12/19/2016	Primary	--	--	0.008 U	0.601	--	5180	250 U	19100	30 U	1000 U
MW-6	2/23/2016	Primary	--	--	0.018 J	0.008 U	130	--	--	10700	50 U	6940
	6/6/2016	Primary	--	--	0.015 J	0.673	--	25 U	25 U	14900	30 U	2150
	9/15/2016	Primary	--	--	0.017 JH	0.166 H	--	25 U	25 U	12700	30 U	1000 U
	12/19/2016	Primary	--	--	0.102	0.703	--	250 U	250 U	9900	30 U	1490
MW-8	2/24/2016	Primary	--	--	0.48	0.08 U	140	--	--	11400	50 U	6900
	6/6/2016	Primary	--	--	1.72	0.732	--	25 U	25 U	10100	30 U	1550
	9/15/2016	Primary	--	--	1.92 H	1.64 H	--	25 U	25 U	7020	30 U	1000 U
	12/19/2016	Primary	--	--	0.091	2.41	--	250 U	250 U	1440	30 U	1670
EAST PARCEL MONITORING WELLS												
MW-7	2/24/2016	Primary	--	--	8.89	0.32 U	20 U	--	--	1000 U	50 U	8530
	6/6/2016	Primary	--	--	9.82	2.82	--	25 U	25 U	1000 U	30 U	3660
	9/15/2016	Primary	--	--	9.59 H	2.39 H	--	25 U	25 U	1000 U	30 U	2720
	12/19/2016	Primary	--	--	10.1	1.08	--	250 U	250 U	1000 U	100	3710
MW-9	2/24/2016	Primary	--	--	0.75	0.08 U	170	--	--	1000 U	50 U	6330
	2/24/2016	Duplicate	--	--	0.78	0.08 U	180	--	--	1000 U	50 U	5860
	6/6/2016	Duplicate	--	--	1.1	1	--	4440 M-02	25 U	1980	30 U	1440
	6/6/2016	Primary	--	--	1.07	0.934	--	3040 M-02	25 U	1270	30 U	3110
	9/15/2016	Duplicate	--	--	1.11 H	1.17 H	--	25 U	25 U	1000 U	30 U	1000 U
	9/15/2016	Primary	--	--	1.14 H	1.18 H	--	25 U	25 U	1020	30 U	1000 U
	12/20/2016	Duplicate	--	--	0.306 J	2.15	--	250 U	250 U	1000 U	30 U	1330
	12/20/2016	Primary	--	--	0.804 J	1.76	--	250 U	250 U	1000 U	30 U	1170

Please see notes at end of table.

Table A-10
Other Analytes in Groundwater
Willamette Cove Upland Facility
Portland, Oregon

Notes:

1. µg/L = micrograms per liter
2. PHSS Cleanup Levels from Record of Decision, Portland Harbor Superfund Site, EPA, January 2017 (updated per Errata #2, January 2020).
3. JSCS Screening Level Value = Joint Source Control Strategy Screening Level Values from Portland Harbor Joint Source Control Strategy, DEQ, 2005. Data screened against JSCS SLVs if no PHSS Cleanup Level available.
4. B = Analyte was detected in the associated method blank. Result may be biased high
5. H = Sample was analyzed outside recommended holding time at client request.
6. J = Estimated value after QA review.
7. M-02 = the result is estimated due to matrix interference.
8. U = Non-detected value.
9. Shading indicates a concentration equal to or exceeding a screening level

Appendix B

LWG RI Sediment Data and In-Water Sample Locations

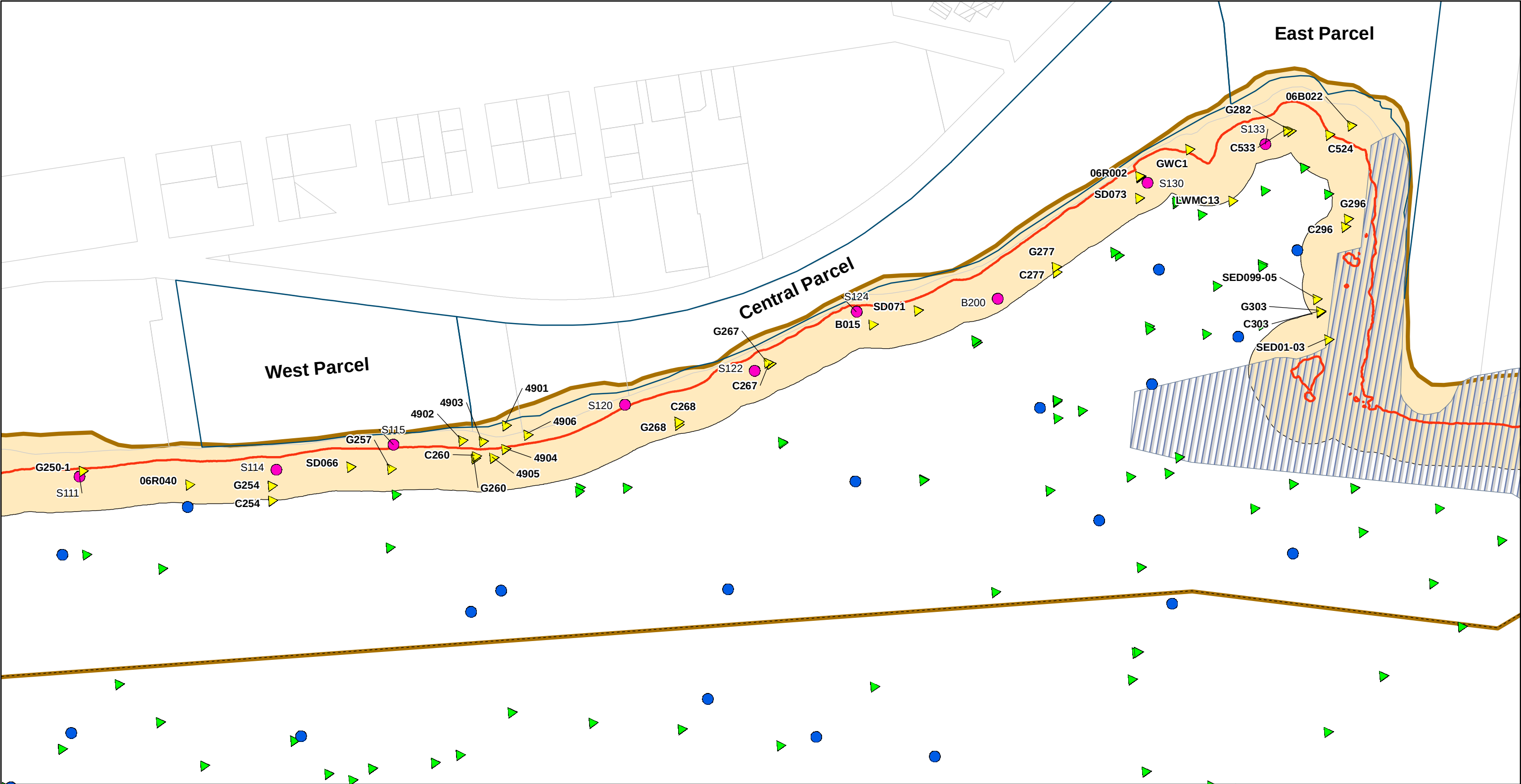
Willamette Cove Upland Chemicals of Concern in Sediments within 100 Feet of -2 Columbia River Datum (CRD)
Data from Portland Harbor Superfund Site Feasibility Study (USEPA 2013)

Location Depth Interval		4901 0 - 12 cm	4902 0 - 15 cm	4903 0 - 15 cm	4904 0 - 15 cm	4905 0 - 15 cm	4906 0 - 15 cm	06R002 (a) 0 - 15 cm	06R002 (b) 0 - 15 cm	06R002 (c) 0 - 15 cm	06R040 0 - 15 cm	B015 0 - 15 cm	G250-1 0 - 23 cm	G254 0 - 29 cm	C254 30 - 74 cm	C254 74 - 104 cm	G257 0 - 26 cm	G260 0 - 20 cm	C260 30 - 114 cm	C260 114 - 163 cm	C260 163 - 195 cm		
Chemical	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Metals																							
Antimony	mg/kg	0.183	T	0.228		0.326		0.225		0.491		0.182		1	J								
Arsenic	mg/kg	2.22	T	2.4		2.62		1.95		3.74		1.7		4.35	T	3.3		3.7	T	4.4			
Chromium	mg/kg	14.5	T	12		19.3		17.7		19.5		9.75		22	T	28.1	T	22		40			
Copper	mg/kg	18.7	T	16.2		34.5		17.7		34.6		17		45.9	T	64.1	T	38.1		45.6			
Mercury	mg/kg	0.0869	T	0.162		0.918		0.45		0.893		0.0694		0.54	JT	0.94	JT	0.64	J	0.52			
Nickel	mg/kg	17.5	T	15.8		21.9		19.9		22.4		13.8		20.5	T	32.5	T	20		28			
Selenium	mg/kg	0.381	UT	0.442	U	0.541	U	0.454	U	0.489	U	0.451	U	0.3	U	0.3	UT	0.3	U	0.04	U		
Zinc	mg/kg	54.2	T	53.2		72.9		52.4		69.3		33.2		106	T	98.5	T	104		97.6			
Polychlorinated dibenzo-dioxins and furans																							
LWG RA Total Dioxin/Furan TEQ 1998 (Avian) (Calculated U = 1/2)	ug/kg									0.15	NJT	0.053	NJT	0.0673	NJT			0.00041	JT				
LWG RA Total Dioxin/Furan TEQ 2005 (Mammal) (Calculated U = 1/2)	ug/kg									0.089	NJT	0.041	NJT	0.0518	NJT			0.00051	JT				
Total Pentachlorodibenzo-p-dioxin (PeCDD)	ug/kg									0.124	NJT	0.141	NJ	0.114	NJT			0.0004					
Polychlorinated Biphenyls																							
LWG RA Total PCB Aroclors (Calculated U = 1/2)	ug/kg											71	T	1.9	UT	16	JT	59	JT	230	JT		
LWG RA Total PCB Congener (Calculated U = 1/2)	ug/kg									81	JT	48	JT	52	JT								
Pesticides																							
LWG RA Total DDx (Calculated U = 1/2)	ug/kg	1.94	UT	2.16	UT	10.7	JT	2.31	UT	9.33	JT	2	UT	3.8	UT	5.8	UJT	8.9	UT	4.9	T	1.63	JNT
Phthalates																							
Bis(2-ethylhexyl) phthalate	ug/kg	12.4	UT	16.3	U	17.9	UJ	17.1	U	175	U	16.3	U	82		140		85	T	84		8	U
Dibutyl phthalate	ug/kg	12.4	UT	16.3	U	17.9	U	17.1	U	175	U	16.3	U	20	U	19	UT	19	U	20	U	4.2	J
Diethyl phthalate	ug/kg	12.4	UT	16.3	U	17.9	U	17.9	J	175	U	16.3	U	20	U	19	UT	19	U	20	U	3.8	U
Dimethyl phthalate	ug/kg	12.4	UT	16.3	U	17.9	U	17.1	U	175	U	16.3	U	19	U	19	UT	20	U	20	U	2	U
Di-n-octyl phthalate	ug/kg	12.4	UT	16.3	U	17.9	U	17.1	U	175	U	16.3	U	20	U	19	U	31	T	20	UT	1.3	U
Polynuclear Aromatic Hydrocarbons, Petroleum Hydrocarbons, Other																							
Carbazole	ug/kg	12.4	UT	16.3	U	41.6		17.1	U	175	U	16.3	U	51	T	16	T	21.5	T	1300	T	4	J
Dibenzofuran	ug/kg	12.4	UT	16.3	U	18.1	J	17.1	U	175	U	16.3	U	44	T	34	T	24.5	T	240	T	1.4	J
LWG RA Total cPAH/BaPEq TEQ (EPA 1993) (Calculated U = 1/2)	ug/kg	44	T	250	T	858	T	67	T	1450	T	9.1	T	350	T	390	T	180	JT	12000	T	240	T
LWG RA Total HPAH (Calculated U = 1/2)	ug/kg	250	T	1500	T	5420	T	370	T	9100	T	70	T	2700	JT	3100	JT	1300	JT	81000	T	1600	T
LWG RA Total LPAH (Calculated U = 1/2)	ug/kg	57	T	270	T	1850	T	90.9	T	2050	T	8.9	JT	780	JT	690	JT	480	JT	22000	T	240	T
LWG RA Total PAH (Calculated U = 1/2)	ug/kg	310	T	1800	T	7270	T	460	T	11100	T	79	JT	3500	JT	1800	JT	3800	JT	100000	T	1800	T
Diesel Range Hydrocarbons	mg/kg	3.38	JT	11.4		12.8		8.65		19.5		3.07											

Willamette Cove Upland Chemicals of Concern in Sediments within 100 Feet of -2 Columbia River Datum (CRD)
Data from Portland Harbor Superfund Site Feasibility Study (USEPA 2013)

Location Depth Interval		G267 0 - 28 cm	C267 30 - 88 cm	C267 88 - 211 cm	G268 0 - 26 cm	C268 30 - 151 cm	C268 151 - 252 cm	G277 0 - 26 cm	G296 0 - 27 cm	C296 30 - 152 cm	C296 152 - 216 cm	G303 0 - 29 cm	C303 30 - 86 cm	C303 86 - 210 cm	SD066 0 - 10 cm	SD071 0 - 10 cm	SD071 0 - 90 cm	SD073 0 - 10 cm	SED01-03 0 - 38 cm	SED099-05 0 - 15 cm	
Chemical	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Metals																					
Antimony	mg/kg	0.14 J		0.495 J		0.087 UJ		0.16 J		0.061 UJ		0.059 UJ		0.12 UJ		0.22 UJ		0.42 JT		0.17 J	
Arsenic	mg/kg	3.69		4.56		2.27		4.64 J		0.8		1.07		2.8 J		4.3 J		5.45 T		4.05	
Chromium	mg/kg	34.9		32.7		12.5		35.1		11.8		9.29		25		29.9 J		35 T		28.9	
Copper	mg/kg	42.4		46.4		20.1		42.9		18		16.4		39.2		47.6 J		93.4 T		39.4	
Mercury	mg/kg	0.12		0.233		0.046		0.122		0.01 J		0.009 U		0.132 JT		0.077		0.967		0.219	
Nickel	mg/kg	29.7 J		29.9		14.2		24.3		11.1		11		21.9		22.2		25.5 T		27.1	
Selenium	mg/kg	0.16 J		0.12		0.05 U		0.18		0.04 U		0.04 UJ		0.13 U		0.15 UT		0.16 U		0.13	
Zinc	mg/kg	107		142		56.1		196		50.6		34.2		93.4		126		200 T		82	
Polychlorinated dibenzo-dioxins and furans																					
LWG RA Total Dioxin/Furan TEQ 1998 (Avian) (Calculated U = 1/2)	ug/kg																				0.016 JT
LWG RA Total Dioxin/Furan TEQ 2005 (Mammal) (Calculated U = 1/2)	ug/kg																				0.013 JT
Total Pentachlorodibenzo-p-dioxin (PeCDD)	ug/kg																				0.0056
Polychlorinated Biphenyls																					
LWG RA Total PCB Aroclors (Calculated U = 1/2)	ug/kg	3.86 UJT		150 JT		2.1 UT				2.4 UT		2 UT		55 JT				130 JT		1.8 UJT	
LWG RA Total PCB Congener (Calculated U = 1/2)	ug/kg					78 JT						160 JT		93 JT		74 JT				1.5 UJT	
Pesticides																					
LWG RA Total DDx (Calculated U = 1/2)	ug/kg	7.05 JNT		68.6 JNT		5.27 JNT		16.6 JNT		1.53 JNT		0.049 UJT		4.9 JNT		11.8 JNT		32 JNT		0.23 UJT	
Phthalates																					
Bis(2-ethylhexyl) phthalate	ug/kg	66 U		730 U		130 U		40 U		110 U		100 U		130		38 U		40 U		10 U	
Dibutyl phthalate	ug/kg	7 J		25		4.7 J		12 U		3.7 J		3.4 J		5.3 U		5.7 U		11 U		8.3 U	
Diethyl phthalate	ug/kg	6.8 U		12 U		4.2 U		16 U		3.8 U		3.9 U		7.1 U		7.7 U		14 U		12 U	
Dimethyl phthalate	ug/kg	3.5 U		6 U		2.2 U		7.8 U		2 U		2 U		3.7 U		4 U		7 U		5.7 U	
Di-n-octyl phthalate	ug/kg	2.4 U		4 U		1.5 U		5.2 U		1.4 U		1.4 U		2.5 U		2.7 U		4.7 U		3.8 U	
Polynuclear Aromatic Hydrocarbons, Petroleum Hydrocarbons, Other																					
Carbazole	ug/kg	3.2 J		9.6 J		1.6 U		12 J		1.5 U		1.5 U		5.4 J		4.9 J		5.1 U		4.2 U	
Dibenzofuran	ug/kg	3.1		65		0.95 J		22		0.24 J		0.19 U		6.3		7.3		64		9.4	
LWG RA Total cPAH/BaPEq TEQ (EPA 1993) (Calculated U = 1/2)	ug/kg	54 T		160 T		4.6 JT		130 T		0.55 JT		0.29 UT		70 T		46 T		320 T		88 T	
LWG RA Total HPAH (Calculated U = 1/2)	ug/kg	340 T		1400 T		41 JT		910 T		2.5 JT		0.53 UT		470 T		310 T		3000 T		710 T	
LWG RA Total LPAH (Calculated U = 1/2)	ug/kg	69 T		1200 T		22 JT		250 T		2.9 JT		2.2 JT		100 T		82 T		1400 T		240 T	
LWG RA Total PAH (Calculated U = 1/2)	ug/kg	410 T		2600 T		63 JT		1200 T		5.5 JT		3.9 JT		580 T		390 T		4300 T		960 T	
Diesel Range Hydrocarbons	mg/kg									62 J		66 J		800 J		120 J		68 J		500 J	

Notes:
Data qualifier definitions from Portland Harbor Feasibility Study, Appendix A (EPA 2016):
A - Summed value based on limited number of analytes.
J - Estimated value.
JA - Combined qualifier.
JT - Combined qualifier.
N - Presumptive evidence of a compound.
NJ - Combined qualifier.
NJT - Combined qualifier.
NT - Combined qualifier.
T - Result calculated or selected from >1 reported value.
U - Analyte was analyzed for but not detected.
UA - Combined qualifier.
UJ - Not detected. Sample detection limit is estimated.
UJA - Combined qualifier.
UJT - Combined qualifier.
UT - Combined qualifier.

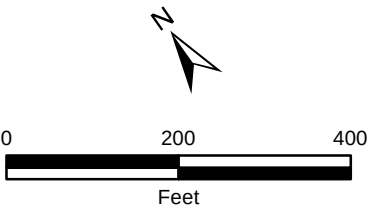


Legend

- Pre-Remedial Design Sediment Locations Within 100 feet of -2 CRD contour Test¹
- ▲ FS Sediment Locations within 100 feet of -2 Ft CRD contour²
- Pre-Remedial Design Sediment Locations¹
- ▲ FS Sediment Locations²
- -2 Ft CRD contour
- Within 100 Feet of -2 CRD Contour Buffer
- ▨ McCormick and Baxter Cap
- ▭ Willamette Cove Upland Facility Boundary
- ▭ Sediment Decision Unit (USEPA Feasibility Study, 2016)

1. Data were collected as part of from Pre-Remedial Design Investigation and Baseline Sampling (Pre-Remedial Design Footprint Report, AECOM/Geosyntec 2019)
2. Data were collected for Portland Harbor Superfund Site Remedial Investigation and Feasibility Study. (Portland Harbor RI/FS FEASIBILITY STUDY, USEPA 2016)

CRD = Columbia River Datum



PORT OF PORTLAND WILLAMETTE COVE	
SEDIMENT SAMPLING LOCATIONS ADJACENT TO WILLAMETTE COVE UPLAND FACILITY PRE-RD AND FS	
DATE: FEB 15, 2019	FORMATION ENVIRONMENTAL
BY: DKG FOR: MDL	

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Willamette Cove Upland Chemicals of Concern in Sediments within 100 Feet of Elevation -2 feet Columbia River Datum (CRD)
Data from 2018 Pre-Remedial Design Investigation and Baseline Sampling (AECOM/GeoSyntec 2019)

Chemical	Location	B200	S111	S114	S115	S120	S122	S124	S130	S133
	Depth Interval	0 - 30 cm	0 - 19 cm	0 - 13 cm	0 - 19 cm	0 - 11 cm	0 - 30 cm	0 - 30 cm	0 - 30 cm	0 - 30 cm
	Date	4/19/2018	5/30/2018	6/18/2018	5/12/2018	6/3/2018	5/11/2018	5/12/2018	5/5/2018	5/5/2018
Units		Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q
Metals										
Arsenic	mg/kg	4.6								
Cadmium	mg/kg	0.23 J								
Copper	mg/kg	40								
Lead	mg/kg	14								
Mercury	mg/kg	0.12								
Zinc	mg/kg	99								
Polychorinated dibenzo-dioxins and furans										
1,2,3,7,8-PeCDD	ug/kg	0.0065 JN	0.00091 J	0.00058 J	0.00012 JN	0.00011 J	0.0018 J	0.91	0.009	0.0016 JN
Pesticides										
2,4-DDD	ug/kg	0.32 J	1.2		2.2	< 0.26 U	< 0.91 U	< 0.95 U	< 1.1 UJ	18 J
2,4-DDE	ug/kg	< 0.37 U	< 0.80 U		< 0.79 U	< 0.26 U	< 0.91 U	< 0.95 U	< 1.1 UJ	< 1.2 UJ
2,4-DDT	ug/kg	< 0.37 U	< 0.94 U		1.7	< 0.26 U	< 0.94 U	< 0.95 U	< 1.1 UJ	5.1 J
4,4'-DDD	ug/kg	1.3	3.5		4.4	< 0.26 U	2	1	0.85 J	71 J
4,4'-DDE	ug/kg	1.7	2.6		0.74	< 0.26 UJ	3.6	2.2	1.9 J	43 J
4,4'-DDT	ug/kg	1	< 0.80 U		33 J	0.28	0.88 J	0.85 J	2 J	3
Phthalates										
Bis(2-ethylhexyl)phthalate	ug/kg	50 J								
Polynuclear Aromatic Hydrocarbons, Petroleum Hydrocarbons, Other										
Benzo(a)pyrene	ug/kg	40	1100	2500	300	5.7	72	77	920	140
TPH-Diesel Range Organics	mg/kg	38 J								

Notes:

Data qualifier definitions from Portland Harbor Feasibility Study, Appendix A (EPA 2016):

J - Estimated value.

U - Analyte was analyzed for but not detected.

UJ - Not detected. Sample detection limit is estimated.

Appendix C

Pre-Design and Supplemental Pre-Design Sediment Data

(From GSI Water Solutions, 2023)

Table 4-1a
Surface and Subsurface Sediment Results for PCBs

Method							Polychlorinated Biphenyls by EPA 8082A (µg/kg)										Polychlorinated Biphenyls by EPA 1668 (µg/kg)
Screening Criteria							Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCB Aroclors	Total PCB Congeners
Sediment Screening Levels																	
Table 17 ROD Cleanup Level							—	—	—	—	—	—	—	—	—	9	9
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	75	75
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	200	200
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)											
WC-001	Primary	Shallow	WC-S001-0-1	6/29/2022	Primary	0.0-1.0	3.05 U	3.05 U	6.10 U	3.05 U	3.05 U	5.45 J	4.17 J	3.05 U	3.05 U	21.8 J	—
			WC-S001-1-2	6/29/2022	RD Decision	1.0-2.0	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	—
			WC-S001-2-3	6/29/2022	RD Decision	2.0-3.0	2.68 U	2.68 U	2.68 U	2.68 U	2.68 U	6.54 J	2.68 U	2.68 U	2.68 U	17.3 J	—
WC-002	Primary	Shallow	WC-S002-1-2	2/16/2023	Primary	1.0-2.0	4.00 U	4.00 U	4.00 U	15.2 J	4.00 U	49.3 J	18.6 J	4.00 U	4.00 U	95.1 J	—
			WC-S002-2-3	2/16/2023	RD Decision	2.0-3.0	3.86 U	3.86 U	3.95 U	4.73 J	3.86 U	6.04 J	5.68 J	3.86 U	3.86 U	28.1 J	—
			WC-S002-3-4	2/16/2023	Primary	3.0-4.0	3.67 U	3.67 U	3.67 U	3.67 U	3.67 U	3.67 U	3.67 U	3.67 U	3.67 U	3.67 U	—
			WC-S002-4-4.5	6/29/2022	Primary	4.0-4.5	3.73 U	3.73 U	3.73 U	8.90 J	3.73 U	28.6 J	14.6 J	3.73 U	3.73 U	63.3 J	—
			WC-S002-4.5-5.5	6/29/2022	RD Decision	4.5-5.5	2.91 U	2.91 U	2.91 U	8.99 J	2.91 U	32.7 J	16.3 J	2.91 U	2.91 U	66.7 J	—
			WC-S002-5.5-7	6/29/2022	Primary	5.5-7.0	2.98 U	2.98 U	5.96 U	2.98 U	2.98 U	4.06 J	2.98 U	2.98 U	2.98 U	17.5 J	—
			WC-S003-1-2	2/16/2023	Primary	1.0-2.0	4.53 U	4.53 U	4.53 U	4.53 U	4.53 U	4.53 U	4.53 U	4.53 U	4.53 U	4.53 U	—
WC-003	Primary	Shallow	WC-S003-2-3	2/16/2023	Primary	2.0-3.0	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U	—
			WC-S003-3-4	2/16/2023	Primary	3.0-4.0	2.93 U	2.93 U	2.93 U	2.93 U	2.93 U	2.93 U	2.93 U	2.93 U	2.93 U	2.93 U	—
			WC-S003-4-5	2/16/2023	Primary	4.0-5.0	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	—
			WC-S003-5-6	6/22/2022	Primary	5.0-6.0	2.87 U	2.87 U	2.87 U	2.87 U	2.87 U	2.87 U	2.87 U	2.87 U	2.87 U	2.87 U	—
			WC-S003-6-7	6/22/2022	Primary	6.0-7.0	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	—
WC-003-A	Porewater Co-located	Shallow	WC-G003-A	8/29/2022	Primary	0.0-1.0	3.05 U	3.05 U	3.05 U	13.2 J	3.05 U	77.4 J	31.3 J	3.05 U	3.05 U	131 J	—
WC-004	Primary	Shallow	WC-S004-1-2	2/16/2023	Primary	1.0-2.0	3.56 U	3.56 U	3.56 U	3.56 U	3.56 U	3.56 U	3.56 U	3.56 U	3.56 U	3.56 U	—
			WC-S004-2-3	2/16/2023	RD Decision	2.0-3.0	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	—
			WC-S004-3-4	2/16/2023	Primary	3.0-4.0	2.90 U	2.90 U	2.90 U	2.90 U	2.90 U	2.90 U	2.90 U	2.90 U	2.90 U	2.90 U	—
			WC-S004-4-5	2/16/2023	Primary	4.0-5.0	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	—
			WC-S004-5-6	6/22/2022	Primary	5.0-6.0	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	61.0	2.29 U	2.29 U	2.29 U	70.2	—
			WC-S004-6-7	6/22/2022	RD Decision	6.0-7.0	2.67 U	2.67 U	2.67 U	2.67 U	2.67 U	2.67 U	2.67 U	2.67 U	2.67 U	2.67 U	—
			WC-S004-7-8	6/22/2022	Primary	7.0-8.0	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	—
WC-005	Primary	Shallow	WC-S005-0-1	6/21/2022	Primary	0.0-1.0	3.35 U	3.35 U	3.35 U	24.0 J	3.35 U	37.8 J	32.4 J	3.35 U	3.35 U	104 J	—
			WC-S005-1-2	6/21/2022	Primary	1.0-2.0	2.98 U	2.98 U	2.98 U	102 J	2.98 U	158 J	32.8 J	2.98 U	2.98 U	302 J	—
			WC-S005-2-3	6/21/2022	Primary	2.0-3.0	2.55 U	2.55 U	2.55 U	9.56 J	2.55 U	12.7 J	3.46 J	2.55 U	2.55 U	33.4 J	—
			WC-S005-3-4	6/21/2022	RD Decision	3.0-4.0	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	—
			WC-S005-5-6	6/21/2022	Primary	5.0-6.0	2.88 U	2.88 U	5.76 U	2.88 U	2.88 U	2.88 U	2.88 U	2.88 U	2.88 U	5.76 U	—
WC-006	Primary	Shallow	WC-S006-0-1	6/21/2022	RD Decision	0.0-1.0	—	—	—	—	—	—	—	—	—	—	11,700 J
			WC-S006-1-2	6/21/2022	Primary	1.0-2.0	—	—	—	—	—	—	—	—	—	—	888
			WC-S006-2-3	6/21/2022	Primary	2.0-3.0	—	—	—	—	—	—	—	—	—	—	18.8 J
			WC-S006-3-4	6/21/2022	Primary	3.0-4.0	—	—	—	—	—	—	—	—	—	—	0.0826 J
			WC-S006-4-5	6/21/2022	Primary	4.0-5.0	—	—	—	—	—	—	—	—	—	—	0.122 J
WC-007	Primary	Shallow	WC-S007-2-3	6/23/2022	Primary	2.0-3.0	2.54 U	2.54 U	2.54 U	2.54 U	2.54 U	7.06 J	2.69 J	2.54 U	2.54 U	18.6 J	—
WC-008	Primary	Shallow	WC-S008-1-2	2/15/2023	Primary	1.0-2.0	2.38 U	2.38 U	2.38 U	3.71 J	2.38 U	4.63 J	2.38 U	2.38 U	2.38 U	16.7 J	—
			WC-S008-2-3	2/15/2023	Primary	2.0-3.0	2.46 U	2.46 U	2.46 U	9.30 J	2.46 U	6.86 J	2.46 U	2.46 U	2.46 U	24.8 J	—
			WC-S008-3-4	2/15/2023	Primary	3.0-4.0	2.56 U	2.56 U	2.56 U	2.56 U	2.56 U	6.91 J	3.31 J	2.56 U	2.56 U	19.2 J	—
			WC-S008-4-5	6/23/2022	Primary	4.0-5.0	2.63 U	2.63 U	2.63 U	2.63 U	2.63 U	2.63 U	2.63 U	2.63 U	2.63 U	2.63 U	—
			WC-S008-5-6	6/23/2022	Primary	5.0-6.0	2.56 U	2.56 U	2.56 U	2.87 J	2.56 U	3.67 J	2.56 U	2.56 U	2.56 U	15.5 J	—
WC-010	Primary	Shallow	WC-S010-1-2	2/15/2023	RD Decision	1.0-2.0	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	—
			WC-S010-2-3	2/15/2023	Primary	2.0-3.0	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	—
			WC-S010-3-4	6/23/2022	RD Decision	3.0-4.0	2.55 U	2.55 U	2.55 U	2.55 U	2.55 U	5.63 J	2.55 U	2.55 U	2.55 U	15.8 J	—
			WC-S010-4-5	6/23/2022	Primary	4.0-5.0	2.52 U	2.52 U	2.52 U	2.52 U	2.52 U	2.52 U	2.52 U	2.52 U	2.52 U	2.52 U	—
WC-012	Primary	Shallow	WC-S012-0-1	6/24/2022	Primary	0.0-1.0	3.16 U	6.33 U	3.16 U	3.16 U	3.16 U	48.8 J	12.9 J	3.16 U	3.16 U	74.3 J	—
			WC-S012-1-2	6/24/2022	Primary	1.0-2.0	6.29 U	3.14 U	6.60 UJ	6.29 U	3.14 U	39.7 J	11.3 J	3.14 U	3.14 U	66.9 J	—
			WC-S012-2-3	6/24/2022	Primary	2.0-3.0	3.72 U	3.72 U	3.72 U	7.60 J	3.72 U	42.8 J	44.8 J	3.72 U	10.0 UJ	109 J	—
			WC-S012-3-4	6/24/2022	Primary	3.0-4.0	3.11 U	3.11 U	3.11 U	6.05 J	3.11 U	17.7 J	6.72 J	3.11 U	3.11 U	39.8 J	—
			WC-S012-4-5	6/24/2022	RD Decision	4.0-5.0	2.82 U	2.82 U	2.82 U	2.82 U	2.82 U	20.1 J	10.0 J	2.82 U	2.82 U	40.0 J	—

Table 4-1a
Surface and Subsurface Sediment Results for PCBs

Method							Polychlorinated Biphenyls by EPA 8082A (µg/kg)										Polychlorinated Biphenyls by EPA 1668 (µg/kg)	
Screening Criteria							Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCB Aroclors	Total PCB Congeners	
Sediment Screening Levels																		
Table 17 ROD Cleanup Level							—	—	—	—	—	—	—	—	—	9	9	
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	75	75	
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	200	200	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)												
WC-013	Porewater Co-located	Shallow	WC-S013-0-1	6/25/2022	Primary	0.0-1.0	3.73 U	3.73 U	3.73 U	3.73 U	3.73 U	51.7 J	11.0 J	3.73 U	3.73 U	75.8 J	—	
	Primary		WC-S013-1-2	6/25/2022	Primary	1.0-2.0	3.35 U	3.35 U	3.35 U	3.35 U	3.35 U	3.73 J	3.60 J	3.35 U	3.35 U	19.1 J	—	
			WC-S013-2-3	6/25/2022	Primary	2.0-3.0	3.56 U	3.56 U	3.56 U	9.19 J	3.56 U	22.3 J	12.7 J	3.56 U	3.56 U	54.9 J	—	
			WC-S013-3-4	6/25/2022	RD Decision	3.0-4.0	3.31 UJ-	3.31 UJ-	3.31 UJ-	10.2 J-	3.31 UJ-	26.8 J-	20.9 J-	3.31 UJ-	3.31 UJ-	67.8 J-	—	
			WC-S013-4-5	6/25/2022	Primary	4.0-5.0	2.68 U	2.68 U	2.68 U	2.68 U	2.68 U	5.37 U	4.51 J	2.68 U	2.68 U	16.6 J	—	
			WC-S013-5-6	6/25/2022	Primary	5.0-6.0	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	2.57 U	—
WC-S013-6-7	6/25/2022	Primary	6.0-7.0	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	—		
WC-014	Primary	Shallow	WC-S014-1-2	6/25/2022	Primary	1.0-2.0	2.86 U	2.86 U	2.86 U	2.86 U	2.86 U	8.81 J	2.86 U	2.86 U	2.86 U	20.3 J	—	
			WC-S014-2-3	6/25/2022	RD Decision	2.0-3.0	2.76 U	2.76 U	2.76 U	2.76 U	2.76 U	3.78 J	2.76 U	2.76 U	2.76 U	14.8 J	—	
WC-015	Primary	Shallow	WC-S015-1-2	6/25/2022	Primary	1.0-2.0	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	2.77 U	—	
			WC-S015-2-3	6/25/2022	Primary	2.0-3.0	2.75 U	2.75 U	5.51 U	2.75 U	2.75 U	2.75 U	2.75 U	2.75 U	2.75 U	5.51 U	—	
WC-016	Primary	Shallow	WC-S016-1-2	6/30/2022	Primary	1.0-2.0	2.39 U	2.39 U	2.39 U	2.39 UJ	2.39 U	2.39 U	2.39 U	2.39 U	2.39 U	2.39 U	—	
			WC-S016-2-3	6/30/2022	RD Decision	2.0-3.0	2.44 U	2.44 U	2.44 U	2.44 U	2.44 U	2.94 J	2.44 U	2.44 U	2.44 U	12.7 J	—	
WC-017	Primary	Shallow	WC-S017-1-2	6/27/2022	RD Decision	1.0-2.0	2.77 U	2.77 U	5.54 U	2.77 U	2.77 U	5.13 J	4.03 J	2.77 U	2.77 U	20.2 J	—	
			WC-S017-2-3	6/27/2022	Primary	2.0-3.0	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	—	
WC-018	Porewater Co-located	Shallow	WC-S018-0-1	6/27/2022	Primary	0.0-1.0	2.81 U	2.81 U	5.63 U	2.81 U	2.81 U	12.2 J	8.88 J	2.81 U	2.81 U	32.3 J	—	
	Primary		WC-S018-1-2	6/27/2022	Primary	1.0-2.0	3.88 U	3.88 U	3.88 U	5.29 J	3.88 U	27.6 J	18.0 J	3.88 U	3.88 U	62.5 J	—	
			WC-S018-2-3	6/27/2022	RD Decision	2.0-3.0	2.62 U	2.62 U	2.62 U	2.62 U	2.62 U	2.62 U	2.62 U	2.62 U	2.62 U	2.62 U	—	
WC-019	Primary	Shallow	WC-S019-1-2	6/28/2022	Primary	1.0-2.0	2.75 U	2.75 U	5.51 U	2.75 U	2.75 U	6.45 J	7.02 UJ	5.51 U	5.51 U	23.7 J	—	
			WC-S019-2-3	6/28/2022	RD Decision	2.0-3.0	3.37 U	3.37 U	3.37 U	3.37 U	3.37 U	3.37 U	3.37 U	3.37 U	3.37 U	3.37 U	—	
WC-019-A	Primary	Shallow	WC-G019-A	6/13/2022	Primary	0.0-1.0	8.92 UJ	4.46 UJ	23.4 UJ	8.92 UJ	8.92 UJ	17.6 J	19.7 J	4.46 UJ	4.46 UJ	69.1 J	—	
WC-023	Primary	Intermediate	WC-S023-0-1	2/16/2023	Primary	0.0-1.0	4.06 U	4.06 U	4.06 U	4.06 U	4.06 U	7.81 J	4.81 J	4.06 U	4.06 U	26.8 J	—	
WC-025	Primary	Intermediate	WC-S025-3-5	6/30/2022	Primary	3.0-5.0	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	—	
WC-025-A	Porewater Co-located	Intermediate	WC-G025-A	6/14/2022	Primary	0.0-1.0	2.99 U	2.99 U	2.99 U	2.99 U	2.99 U	2.99 U	2.99 U	2.99 U	2.99 U	2.99 U	—	
WC-030-A	Porewater Co-located	Intermediate	WC-G030-A	6/13/2022	Primary	0.0-1.0	4.39 UJ	4.39 UJ	4.39 UJ	4.39 UJ	8.78 UJ	4.39 UJ	40.5 J	4.39 UJ	4.39 UJ	60.3 J	—	
WC-032-A	Porewater Co-located	Intermediate	WC-G032-A	6/13/2022	Primary	0.0-1.0	5.31 U	5.31 U	5.31 U	5.31 U	5.31 U	15.3 J	28.5 J	5.31 U	5.31 U	62.4 J	—	
WC-033-A	Porewater Co-located	Intermediate	WC-G033-A	8/28/2022	Primary	0.0-1.0	4.11 U	4.11 U	4.11 U	10.1 J	4.11 U	15.8 J	15.4 J	4.11 U	4.11 U	53.6 J	—	
WC-037-A	Primary	Intermediate	WC-G037-A	6/13/2022	Primary	0.0-1.0	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	5.17 UJ	—	
WC-041-A	Porewater Co-located	Intermediate	WC-G041-A	8/28/2022	Primary	0.0-1.0	4.67 UJ-	4.67 UJ-	4.67 UJ-	13.4 J-	4.67 UJ-	20.1 J-	17.3 J-	4.67 UJ-	4.67 UJ-	64.8 J-	—	
WC-047-A	Primary	Intermediate	WC-C047-A-0-1	3/21/2023	Primary	0.0-1.0	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	4.00 UJ-	—	
WC-048-A-1	Primary	Intermediate	WC-G048-A-1	6/15/2022	Primary	0.0-1.0	2.85 U	2.85 U	2.85 U	2.85 U	2.85 U	2.85 U	2.85 U	2.85 U	2.85 U	2.85 U	—	
WC-048-A-2	Primary	Intermediate	WC-G048-A-2	6/15/2022	Primary	0.0-1.0	2.83 U	2.83 U	2.83 U	2.83 U	2.83 U	2.83 U	2.83 U	2.83 U	2.83 U	2.83 U	—	
WC-049-A	Primary	Intermediate	WC-G049-A	6/15/2022	Primary	0.0-1.0	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	5.97 J	5.39 J	3.75 U	3.75 U	24.5 J	—	
WC-053	Step Out	Shallow	WC-G053	6/16/2022	Primary	0.0-1.0	3.47 U	3.47 U	3.47 U	3.47 U	3.47 U	6.75 J	13.5 J	3.47 U	3.47 U	32.4 J	—	
WC-054	Primary	Intermediate	WC-S054-0-1	2/16/2023	Primary	0.0-1.0	7.00 UJ-	7.00 UJ-	14.0 UJ-	7.00 UJ-	7.00 UJ-	16.1 J-	7.00 UJ-	7.00 UJ-	7.00 UJ-	47.6 J-	—	
WC-056	Primary	Intermediate	WC-S056-0-1	6/30/2022	RD Decision	0.0-1.0	2.58 U	2.58 U	2.58 U	2.58 U	2.58 U	2.58 U	2.58 U	2.58 U	2.58 U	2.58 U	—	
WC-057	Primary	Intermediate	WC-S057-0-1	2/13/2023	Primary	0.0-1.0	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	2.59 U	—	
WC-059	Primary	Intermediate	WC-G059	6/14/2022	RD Decision	0.0-1.0	2.79 U	2.79 U	2.79 U	2.79 U	2.79 U	2.79 U	2.79 U	2.79 U	2.79 U	2.79 U	—	
			WC-S059-1-3	6/29/2022	RD Decision	1.0-3.0	2.79 U	2.79 U	2.79 U	5.26 J	2.79 U	14.7 J	13.1 J	2.79 U	2.79 U	41.4 J	—	
WC-060	Primary	Intermediate	WC-S060-0-1	6/29/2022	Primary	0.0-1.0	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U	2.94 J	2.36 J	2.19 U	2.19 U	13.0 J	—	
			WC-S060-1-3	6/29/2022	RD Decision	1.0-3.0	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	—	
WC-060-A	Primary	Intermediate	WC-S060-A-0-1	6/30/2022	RD Decision	0.0-1.0	2.42 U	2.42 U	2.42 U	20.2 J	2.42 U	14.9 J	7.71 J	2.42 U	2.42 U	50.1 J	—	
WC-061	Primary	Intermediate	WC-S061-0-1	6/28/2022	Primary	0.0-1.0	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	2.47 J	2.42 U	2.42 U	2.42 U	12.2 J	—	
			WC-S061-1-3	6/28/2022	RD Decision	1.0-3.0	2.32 U	2.32 U	2.32 U	2.32 U	2.32 U	2.32 U	2.32 U	2.32 U	2.32 U	2.32 U	—	
WC-063	Primary	Intermediate	WC-S063-1-3	6/28/2022	Primary	1.0-3.0	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	2.42 U	—	
WC-064	Step Out	Intermediate	WC-G064	6/13/2022	Primary	0.0-1.0	8.20 U	4.10 U	13.9 UJ	8.20 U	4.10 U	46.6 J	13.5 J	4.10 U	4.10 U	83.4 J	—	
			WC-S064-1-3	6/28/2022	RD Decision	1.0-3.0	2.88 U	2.88 U	5.76 U	2.88 U	7.06 UJ	2.88 U	64.5 J	2.88 U	2.88 U	79.6 J	—	
			WC-S064-3-5	6/28/2022	Primary	3.0-5.0	2.34 U	2.34 U	2.34 U	2.34 U	2.34 U	2.34 U	2.34 U	2.34 U	2.34 U	2.34 U	—	
WC-065	Step Out	Intermediate	WC-S065-0-1	6/29/2022	Primary	0.0-1.0	3.24 UJ-	3.24 UJ-	3.24 UJ-	3.85 J-	3.24 UJ-	7.69 J-	7.09 J-	3.24 UJ-	3.24 UJ-	28.4 J-	—	
			WC-S065-1-3	6/29/2022	Primary	1.0-3.0	3.44 U	3.44 U	3.44 U	13.4 J	3.44 U	26.6 J	19.3 J	3.44 U	3.44 U	69.6 J	—	

Table 4-1a
Surface and Subsurface Sediment Results for PCBs

[illegible]

Table 4-1a
Surface and Subsurface Sediment Results for PCBs

Notes

Yellow highlight = Result exceeds the referenced ROD Cleanup Level
Orange highlight = Result exceeds the referenced Site-Wide RAL
Red highlight = Result exceeds the referenced PTW Threshold

BOLD = Detection

— = not analyzed or not applicable

EPA = U.S. Environmental Protection Agency

ft = foot or feet

J- = The result is an estimated quantity, but the result may be biased low.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

PCBs = Polychlorinated Biphenyls

PTW = Principal Threat Waste

RAL = Remedial Action Level

RD = remedial design

ROD = Record of Decision

U = Result not detected above the referenced laboratory detection limit

UJ- = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and biased low.

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate.

µg/kg = micrograms per kilogram (reported on a dry weight basis)

Table 4-1b
Surface and Subsurface Sediment Results for PCDD/Fs

Method							PCDD/Fs by EPA 1613/1613b (pg/g)																		
Screening Criteria							2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	2,3,7,8-TCDD TEQ	
Sediment Screening Levels																									
Table 17 ROD Cleanup Level							0.2	0.2	—	—	—	—	—	0.40658	—	0.3	0.4	—	—	—	—	—	—	—	10
Table 21 Site-Wide RAL or EPA PQL ¹							1	2.5	—	—	—	—	—	—	—	200	—	—	—	—	—	—	—	—	
Table 21 PTW Threshold							10	10	—	—	—	—	—	600	—	200	400	—	—	—	—	—	—	—	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																			
WC-001	Primary	Shallow	WC-S001-0-1	6/29/2022	Primary	0.0-1.0	0.390 J	0.673 J	0.998 J	8.27	2.73	167	1,660	0.692	1.09 J	3.55	4.40	10.9	4.04	1.48 J	251	2.90 J	211	10.3 J	
			WC-S001-1-2	6/29/2022	RD Decision	1.0-2.0	0.0558 U	0.179 J	0.398 J	0.701 J	0.641 J	10.9	95	0.366 J	0.432 J	0.539 J	0.589 J	0.84 J	0.358 J	0.276 J	7.8	0.251 J	6.02 J	1.02 J	
			WC-S001-2-3	6/29/2022	RD Decision	2.0-3.0	0.0440 U	0.126 J	0.315 J	0.378 J	0.513 J	5.83	42.1	0.0518 U	0.0677 U	0.113 J	0.135 J	0.167 J	0.0814 U	0.142 J	3.31	0.0665 U	2.15 J	0.460 J	
WC-002	Primary	Shallow	WC-S002-1-2	2/16/2023	Primary	1.0-2.0	0.637 J+	3.01 J+	4.13 J	42.2	12.3	895	9,330	5.98	8.90	12.2	21.0	33.8	11.8	2.97 J+	620	17.3	1,040	39.4 J+	
			WC-S002-2-3	2/16/2023	RD Decision	2.0-3.0	0.406 J+	1.44 J	1.87 J	15.9	6.71	368	3,980	2.43	3.23 J	4.05 J+	7.16	48.1	11.0 J	3.50 J	288	20.0	752	21.0 J+	
			WC-S002-3-4	2/16/2023	Primary	3.0-4.0	0.254 J+	1.24 J	1.23 J+	11.7	4.51	361	4,230	2.38	2.78	2.86	5.23	27.6	3.93	1.52 J	154	16.0	625	15.0 J+	
			WC-S002-4-4.5	6/29/2022	Primary	4.0-4.5	0.681	2.40 J	3.64	32.8	9.58	802	9,370	8.63	6.99	8.32	10.5	28.3	9.71	3.23	378	19.1	1,130	31.6 J	
			WC-S002-4.5-5.5	6/29/2022	RD Decision	4.5-5.5	1.14	3.33	5.54	46.9	12.5	927	9,555 J	4.58	6.90	11.0	17.2	34.6	15.3	5.51	482	18.8 J	1,240	39.7 J	
			WC-S002-5.5-7	6/29/2022	Primary	5.5-7.0	0.510	1.48 J	2.53	17.9	6.91	298	2,980	2.63	5.63	8.45	17.8	39.9	14.2	4.33	282	13.1	522	22.3 J	
			WC-S002-7-8	6/29/2022	Primary	7.0-8.0	0.403 J	1.34 J	1.87 J	15.4	5.08	226	1,840	0.948	3.02	6.83	12.0	51.2	12.8	3.44	1,190	8.21	586	29.1 J	
			WC-S002-8-9	6/29/2022	Primary	8.0-9.0	0.0795 U	0.278 J	0.529 J	2.39 J	1.05 J	34.6	251	0.390 J	0.459 J	1.46 J	1.84 J	5.00	1.88 J	0.722 J	143	1.12 J	71.4	4.03 J	
WC-003	Primary	Shallow	WC-S003-1-2	2/16/2023	Primary	1.0-2.0	0.365 J+	2.84 J	4.61 J	65.7	14.4	1,820	18,400	0.990 J+	4.37 J	6.87 J+	20.7	76.9	22.0	6.25 U	2,640	44.7	5,500	78.5 J+	
			WC-S003-2-3	2/16/2023	Primary	2.0-3.0	0.236 U	0.859 U	0.447 U	1.05 J	0.487 U	13.2	152	0.431 J	0.514 J+	0.644 J+	0.975 J	1.66 J	0.294 J+	0.392 U	22.6	0.654 U	21.9	1.68 J+	
			WC-S003-3-4	2/16/2023	Primary	3.0-4.0	0.0949 U	0.193 U	0.201 U	0.209 U	0.222 U	1.51 J	14.3	0.102 U	0.107 U	0.1 U	0.109 U	0.313 J	0.117 U	0.168 U	3.08	0.236 U	3.21 J	0.301 J	
			WC-S003-4-5	2/16/2023	Primary	4.0-5.0	0.122 U	0.242 U	2.75 U	1.59 U	3.71 U	2.71 J+	23.9 J	0.11 U	0.0994 U	0.197 U	0.73 U	0.92 U	1.63 U	1.7 U	0.853 U	1.16 U	2.11 U	0.915 J+	
			WC-S003-5-6	6/22/2022	Primary	5.0-6.0	0.0639 U	0.0928 U	0.302 J	0.467 J	0.567 J	6.47	48.8	0.0385 U	0.127 U	0.141 U	0.116 U	0.413 J	0.163 J	0.156 J	4.90	0.177 U	3.83 J	0.446 J	
			WC-S003-6-7	6/22/2022	Primary	6.0-7.0	0.0698 U	0.0659 U	0.186 U	0.198 U	0.181 U	0.884 J	5.05	0.0533 U	0.0517 U	0.0568 U	0.0781 U	0.0798 U	0.0850 U	0.0842 U	0.106 U	0.134 U	0.237 U	0.136 J	
WC-003-A	Porewater Co-located	Shallow	WC-G003-A	8/29/2022	Primary	0.0-1.0	3.78	12.6	27.6	53.6	27.1	1,120	7,670	2.51	3.68	9.18	11.4	16.3	8.62	3.16	355	9.38	494	51.6	
WC-004	Primary	Shallow	WC-S004-1-2	2/16/2023	Primary	1.0-2.0	0.430 J+	1.65 J	1.79 J	13.4	3.91 J	201	2,680	1.93	12.8	26.3	25.2	262	44.1	10.6	2,910	21.5	1,130	79.1 J+	
			WC-S004-2-3	2/16/2023	RD Decision	2.0-3.0	0.108 U	0.295 U	0.220 U	0.232 U	0.248 U	2.05 J	15.2	0.141 U	0.137 J+	0.191 U	0.234 U	1.33 J	0.201 J+	0.358 U	15.8	0.416 U	7.41 J	0.646 J+	
			WC-S004-3-4	2/16/2023	Primary	3.0-4.0	0.0729 U	0.146 U	0.161 U	0.184 U	0.18 U	0.908 J	6.70	0.0946 J	0.0893 U	0.0868 U	0.114 U	0.218 J	0.122 U	0.126 U	2.29 J	0.146 U	1.06 J	0.234 J	
			WC-S004-4-5	2/16/2023	Primary	4.0-5.0	0.0497 U	0.455 J	0.543 U	1.69 J	0.832 U	8.48	13.2	0.366 J	0.267 J	0.432 J	0.318 J	0.748 J	0.385 U	0.367 U	4.32	0.138 U	1.34 J	1.17 J	
			WC-S004-5-6	6/22/2022	Primary	5.0-6.0	0.0465 U	0.161 J+	0.129 U	0.701 J	0.136 U	10.0	87.1	0.372 J+	1.22 J	1.45 J	1.43 J	12.6	0.895 J+	0.405 J+	101	0.965 J	30.2	3.46 J+	
			WC-S004-6-7	6/22/2022	RD Decision	6.0-7.0	0.0707 U	0.0901 U	0.318 J	0.239 J	0.459 J	3.90	26.3	0.0460 U	0.0512 U	0.0573 U	0.0945 U	0.0975 U	0.103 U	0.0928 U	0.652 J	0.0675 U	0.273 U	0.267 J	
			WC-S004-7-8	6/22/2022	Primary	7.0-8.0	0.0766 U	0.118 U	0.326 J	0.241 J	0.421 J	3.76	25.8	0.0450 U	0.0689 U	0.0788 U	0.113 U	0.117 U	0.121 U	0.109 U	0.0844 U	0.0973 U	0.220 U	0.280 J	
WC-005	Primary	Shallow	WC-S005-0-1	6/21/2022	Primary	0.0-1.0	0.895	1.39 J	2.31 J	10.3	4.81	204	3,170	5.03	16.4	9.96	23.5	11.3	5.73	4.40	50.5	7.00	127	16.1 J	
			WC-S005-1-2	6/21/2022	Primary	1.0-2.0	0.329 J	0.478 J	0.938 J	4.65	1.72 J	94.8	1,160	1.09	2.22 J	3.10	5.60	10.1	3.07	1.35 J	96.6	3.21	95.0	6.98 J	
			WC-S005-2-3	6/21/2022	Primary	2.0-3.0	0.0752 U	0.121 U	0.338 J	1.12 J	0.427 J	24.5	232	0.150 J	0.231 J	0.442 J	0.993 J	1.19 J	0.550 J	0.333 J	12.9	0.546 J	16.4	1.20 J	
			WC-S005-3-4	6/21/2022	RD Decision	3.0-4.0	0.0628 U	0.128 U	0.145 U	0.156 U	0.142 U	2.16 J	12.6	0.0828 U	0.0776 U	0.0873 U	0.0910 U	0.0906 U	0.0932 U	0.108 U	0.118 U	0.130 U	0.256 U	0.182 J	
			WC-S005-5-6	6/21/2022	Primary	5.0-6.0	0.0673 U	0.171 U	0.220 U	0.227 U	0.208 U	2.74	22.3	0.0781 U	0.179 U	0.189 U	0.110 U	0.119 U	0.122 U	0.153 U	0.620 J	0.113 U	1.01 J	0.253 J	
WC-006	Primary	Shallow	WC-S006-5-6	6/21/2022	Primary	5.0-6.0	0.135 U	0.201 U	0.264 U	0.291 U	0.345 U	1.64 J	12.1	0.12 U	0.132 U	0.111 U	0.158 U	0.157 U	0.171 U	0.227 U	0.738 J+	0.266 U	0.989 J	0.302 J+	
			WC-S006-6-7	6/21/2022	Primary	6.0-7.0	0.0649 U	0.0931 U	0.121 U	0.131 U	0.133 U	1.57 J	10.1	0.0521 U	0.0575 U	0.0524 U	0.0659 U	0.0697 U	0.071 U	0.102 U	0.263 J+	0.214 U	0.620 J	0.148 J+	
			WC-S006-7-8	6/21/2022	Primary	7.0-8.0	0.0788 U	0.107 U	0.122 U	0.132 U	0.136 U	0.978 J	5.35	0.0593 U	0.0606 U	0.0511 U	0.069 U	0.0704 U	0.0773 U	0.102 U	0.197 U	0.277 U	0.209 U	0.154 J	
			WC-S006-8-9	6/21/2022	Primary	8.0-9.0	0.0594 U	0.111 U	0.107 U	0.118 U	0.12 U	1.26 J	5.93	0.0485 U	0.0502 U	0.046 U	0.0484 U	0.0494 U	0.0539 U	0.0716 U	0.121 U	0.164 U	0.156 U	0.140 J	
WC-007	Primary	Shallow	WC-S007-2-3	6/23/2022	Primary	2.0-3.0	0.0861 U	0.221 U	0.524 J	1.52 J	1.12 J	24.6	332	0.962	1.23 J	1.10 J	2.31 J	0.950 J	0.684 J	0.456 J	7.24	0.896 J	14.3	1.80 J	
WC-008	Primary	Shallow	WC-S008-1-2	2/15/2023	Primary	1.0-2.0	0.143 U	0.186 U	0.336 U	6.27	1.34 J	188	2,080	0.161 U	0.180 U	0.554 J+	1.76 J	0.493 J	0.298 J+	0.146 J+	58.0	4.63 J	377	4.63 J+	
			WC-S008-2-3	2/15/2023	Primary	2.0-3.0	0.461 J+	0.778 J	0.454 J	3.39 J	1.22 J	98.6	1,120	0.338 J	0.498 J	0.562 J+	1.24 J	0.572 J	0.244 J	0.0755 U	14.9	1.30 J	71.4	3.68 J+	
			WC-S008-3-4	2/15/2023	Primary	3.0-4.0	0.208 J+	1.18 J	0.953 J	7.91	3.34														

Table 4-1b
Surface and Subsurface Sediment Results for PCDD/Fs

Method							PCDD/Fs by EPA 1613/1613b (pg/g)																				
							Screening Criteria						2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF
Sediment Screening Levels																											
Table 17 ROD Cleanup Level							0.2	0.2	—	—	—	—	—	—	0.40658	—	0.3	0.4	—	—	—	—	—	—	—	—	10
Table 21 Site-Wide RAL or EPA PQL ¹							1	2.5	—	—	—	—	—	—	—	—	200	—	—	—	—	—	—	—	—	—	
Table 21 PTW Threshold							10	10	—	—	—	—	—	—	600	—	200	400	—	—	—	—	—	—	—	—	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																					
WC-013	Porewater Co-located	Shallow	WC-S013-0-1	6/25/2022	Primary	0.0-1.0	2.13	12.3	12.1	127	51.1	1,430	13,700	3.81	5.11	12.9	17.2	10.9	13.7	7.58	150	7.97	212	62.8			
	Primary		WC-S013-1-2	6/25/2022	Primary	1.0-2.0	0.667	6.61	5.83	54.0	34.0	427	2,840	0.895	1.90 J	5.34	13.8	7.61	8.95	5.31	196	8.72	261	29.2 J			
			WC-S013-2-3	6/25/2022	Primary	2.0-3.0	2.97	12.4	14.2	92.0	59.8	1,270	14,600	37.1	17.6	36.1	36.6	22.1	22.6	12.4	330	16.6	384	77.1			
			WC-S013-3-4	6/25/2022	RD Decision	3.0-4.0	12.8 J	193 J	69.9	1,620	1,076 J	3,075 J	8,785 J	12.0 J	22.8 J	32.5 J	88 J	49.4 J	41.2 J	23.6 J	4,680	49.8 J	2,590 J	596 J			
			WC-S013-4-5	6/25/2022	Primary	4.0-5.0	0.439 J	1.53 J	1.52 J	7.56	3.65	94.2	1,290	1.03	1.51 J	8.43	5.40	12.0	7.68	1.80 J	197	2.63	144	12.0 J			
			WC-S013-5-6	6/25/2022	Primary	5.0-6.0	0.0839 U	0.142 U	0.185 U	0.212 U	0.184 U	2.25 J	13.3	0.0852 U	0.159 U	0.158 U	0.124 U	0.129 U	0.139 U	0.172 U	0.261 J	0.158 U	0.389 U	0.230 J			
WC-014	Primary	Shallow	WC-S013-6-7	6/25/2022	Primary	6.0-7.0	0.0952 U	0.147 U	0.214 U	0.230 U	0.205 U	1.19 J	7.04	0.0834 U	0.131 U	0.127 U	0.112 U	0.118 U	0.132 U	0.173 U	0.227 U	0.322 U	0.354 U	0.222 J			
			WC-S014-1-2	6/25/2022	Primary	1.0-2.0	9.55	306	154	4,200	2,780	7,700	2,670	0.967	2.96	8.19	14.2	22.8	24.1	4.92	879	9.95	289	1,130			
			WC-S014-2-3	6/25/2022	RD Decision	2.0-3.0	51.4	1,220	470	9,980	6,510	15,600	5,695	3.20	11.8	32.2	47.9	85.5	84.3	15.8	2,715	36.3	922	3,190			
			WC-S014-3-4	6/25/2022	Primary	3.0-4.0	155	3,520	920	19,400	9,940	25,200	15,800	9.82	33.3	87.2	104	149	154	28.9	2,220	56.5	965	7,050			
			WC-S014-4-5	6/25/2022	Primary	4.0-5.0	25.5	435	206	2,750	1,700	7,340	19,900	13.7	28.1	58.6	87.0	60.6	61.2	30.3	927	40.2	635	1,060			
			WC-S014-5-6	6/25/2022	Primary	5.0-6.0	24.1	735	371	10,900	6,790	22,600	6,390	1.18	6.60	17.1	33.1	55.4	62.3	11.7	2,570	27.7	758	2,840			
			WC-S014-6-7	6/25/2022	Primary	6.0-7.0	15.0	212	83.2	1,330	1,040	2,450	765	0.531	4.19	7.09	10.8	15.4	17.0	3.92	494	6.02	140	509			
			WC-S014-7-8	6/25/2022	Primary	7.0-8.0	27.1	510	135	2,450	1,370	3,750	4,520	2.39	10.8	28.5	25.1	30.9	36.2	8.88	763	14.2	371	999			
			WC-S014-8-9	6/25/2022	Primary	8.0-9.0	47.5	1,480	799	16,500	10,400	29,600	29,600	9.49	29.6	69.1	113	115	112	30.3	2,650	65.2	1,870	4,690			
			WC-S014-9-10	6/25/2022	Primary	9.0-10.0	339	18,400	4,560	157,000	99,200	176,000	70,900	24.0	84.9	266	475	841	767	68.2	13,900	350	6,090	47,000			
			WC-S014-10-11	6/25/2022	Primary	10.0-11.0	16.6	256	87.0	2,330	1,460	3,480	11,400	11.4	17.4	45.9	67.9	39.7	30.7	11.2	672	29.0	1,160	736			
			WC-S014-11-12	6/25/2022	Primary	11.0-12.0	0.390 J	1.23 J+	0.371 U	4.49	2.88 J+	33.3	358	1.40	2.10 J	9.64	3.28 J+	3.45	3.56	0.420 J	40.2	1.07 J	35.2	7.41 J+			
			WC-S014-12-13	6/25/2022	Primary	12.0-13.0	2.09	28.0	10.1	219	131	450	2,730	1.72	2.75	28.0	13.0	19.7	5.13 J+	3.60	378	5.73	227	88.1 J+			
			WC-S014-13-14	6/25/2022	Primary	13.0-14.0	1.49	15.4	5.65	92.5	60.1	279	2,610	0.841	5.40	11.3	12.6	16.9	7.85	1.67 J	290	4.56	163	46.8 J			
			WC-S014-14-15	6/25/2022	Primary	14.0-15.0	1.70	8.15	2.86	60.1	36.2	90.8	249	0.186 J+	0.31 J+	0.685 J+	1.25 J	1.11 J	0.654 J	0.182 J+	25.8	0.629 J	23.8	21.6 J+			
WC-015	Primary	Shallow	WC-S015-1-2	6/25/2022	Primary	1.0-2.0	18.9	701	273	8,290	4,920	12,100	2,860	2.08	5.39	15.3	22.9	47.3	48.0	7.19	1,310	17.6	400	2,220			
			WC-S015-2-3	6/25/2022	Primary	2.0-3.0	3.91	96.3	28.6	1,370	451	1,320	1,230	1.55	1.83 J	5.63	5.78	7.27	9.06	2.38	279	2.92	97.7	306 J			
			WC-S015-3-4	6/25/2022	RD Decision	3.0-4.0	2.02	24.8	10.3	193	108	480	2,875	2.66	2.72	9.34	7.98	7.65 J+	10.5	2.91	91.3	3.66	73.3	70.6 J+			
			WC-S015-4-5	6/25/2022	Primary	4.0-5.0	23.3	396	249	3,570	2,290	7,390	12,800	13.4	31.8	54.0	74.3	330	99.9	26.7	2,710	59.1	1,310	1,210			
			WC-S015-5-6	6/25/2022	Primary	5.0-6.0	6.04	108	45.0	1,080	676	1,930	1,540	2.67	3.94	10.4	10.1	13.7	13.9	3.50	348	5.85	156	325			
			WC-S015-6-7	6/25/2022	Primary	6.0-7.0	3.67	44.2	19.3	215	260	540	462	1.29	2.97	6.86	8.58	21.5	8.92	2.70	132	4.22	42.5	111			
			WC-S015-7-8	6/25/2022	Primary	7.0-8.0	3.51	43.7	14.4	126	252	570	4,240	1.52	2.97	11.3	12.2	9.10	9.39	4.28	124	6.28	171	102			
			WC-S015-8-9	6/25/2022	Primary	8.0-9.0	36.7	653	208	1,300	2,750	3,550	5,030	2.15	6.52	41.6	36.6	41.8	43.3	8.53	816	12.1	402	1,190			
			WC-S015-9-10	6/25/2022	Primary	9.0-10.0	20.7	734	160	3,700	3,350	4,410	2,430	6.12	11.0	39.2	28.5	39.8	36.2	7.61	844	16.6	315	1,550			
			WC-S015-10-11	6/25/2022	Primary	10.0-11.0	0.864 J+	3.62 J	1.40 J	10.3	5.58	92.9	1,440	3.58	3.90 J	42.5	13.9	15.1	10.5 J+	3.17 J+	425	5.07	275	29.4 J+			
			WC-S015-11-12	6/25/2022	Primary	11.0-12.0	0.476 J+	2.64	1.90 J	14.4	5.05	301	5,670	1.40	3.07	18.0	11.6	33.8	15.6	1.83 J	506	6.89	372	27.1 J+			
			WC-S015-12-13	6/25/2022	Primary	12.0-13.0	0.242 J+	0.798 J	0.294 U	2.35 J	1.07 J	32.0	700	0.441 J	0.454 J	3.39 J+	2.08 J	1.97 J	1.85 J	0.44 J+	16.9	0.943 J	14.4	3.82 J+			
			WC-S015-13-14	6/25/2022	Primary	13.0-14.0	0.0809 U	0.227 U	0.254 U	0.267 U	0.263 U	1.45 J	8.99	0.0727 U	0.104 U	0.108 U	0.152 U	0.157 U	0.171 U	0.179 U	0.3 J+	0.196 U	0.407 U	0.269 J+			
			WC-S015-14-15	6/25/2022	Primary	14.0-15.0	0.0692 U	0.152 U	0.153 U	0.241 J	0.246 J+	1.19 J	8.75	0.0639 U	0.08 U	0.0806 U	0.0839 U	0.089 U	0.0924 U	0.0944 U	0.359 J	0.163 U	0.33 J+	0.220 J+			
WC-016	Primary	Shallow	WC-S016-1-2	6/30/2022	Primary	1.0-2.0	0.266 J	1.95 J	3.73	27.2	8.55	531	8,220	0.189 J	0.289 J	1.37 J	2.17 J	2.03 J	3.35	0.556 J	87.1	7.59	292	16.2 J			
			WC-S016-2-3	6/30/2022	RD Decision	2.0-3.0	0.630 J	6.73	4.50	43.5	29.0	282	3,085	0.608	0.813 J	3.71	4.33	3.12 J	4.34	1.18 J	312 J	4.86	192 J	24.5 J			
			WC-S016-3-4	6/30/2022	Primary	3.0-4.0	0.460 J	1.89 J	1.91 J	12.4	6.86	142	1,260	0.858	0.859 J	3.36	2.63.6										

Table 4-1b
Surface and Subsurface Sediment Results for PCDD/Fs

Method							PCDD/Fs by EPA 1613/1613b (pg/g)																		
Screening Criteria							2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	2,3,7,8-TCDD TEQ	
Sediment Screening Levels																									
Table 17 ROD Cleanup Level							0.2	0.2	—	—	—	—	—	0.40658	—	0.3	0.4	—	—	—	—	—	—	—	10
Table 21 Site-Wide RAL or EPA PQL ¹							1	2.5	—	—	—	—	—	—	—	200	—	—	—	—	—	—	—	—	
Table 21 PTW Threshold							10	10	—	—	—	—	—	600	—	200	400	—	—	—	—	—	—	—	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																			
WC-041-A	Porewater Co-located	Intermediate	WC-G041-A	8/28/2022	Primary	0.0-1.0	3.89	7.44	14.9	97.0	31.8	3,020	35,500	16.9	32.4	40.8	116	39.0	35.5	23.5	594	53.5	1,750	110	
WC-047-A	Primary	Intermediate	WC-C047-A-0-1	3/21/2023	Primary	0.0-1.0	0.235 U	0.464 U	0.500 U	0.978 J+	0.514 J	20.0	178	0.225 J	0.261 J+	0.308 J	0.447 J	0.217 J+	0.291 U	0.393 U	2.86 J	0.442 U	7.20 J	1.03 J+	
WC-048-A-1	Primary	Intermediate	WC-G048-A-1	6/15/2022	Primary	0.0-1.0	0.0919 U	0.125 U	0.293 J	0.443 J	0.390 J	7.89	95.6	0.0970 U	0.113 U	0.111 U	0.317 J	0.126 U	0.118 U	0.149 U	1.41 J	0.185 U	4.32 J	0.419 J	
WC-048-A-2	Primary	Intermediate	WC-G048-A-2	6/15/2022	Primary	0.0-1.0	0.0868 U	0.155 U	0.237 U	0.406 J	0.221 U	7.16	86.3	0.138 J	0.125 U	0.134 U	0.398 J	0.147 U	0.148 U	0.192 U	1.70 J	0.256 J	5.68	0.403 J	
WC-049-A	Primary	Intermediate	WC-G049-A	6/15/2022	Primary	0.0-1.0	0.838	1.34 J	2.47 J	13.1	6.17	274	4,610	6.33	12.7	4.65	15.4	12.7	5.70	2.65	79.3	5.00	167	15.4 J	
WC-053	Step Out	Shallow	WC-G053	6/16/2022	Primary	0.0-1.0	0.265 J	0.779 J	1.42 J	19.3	3.38	480	4,370	1.12	1.20 J	2.21 J	3.07	3.25	2.25 J	0.811 J	146	4.64	575	13.0 J	
WC-054	Primary	Intermediate	WC-S054-0-1	2/16/2023	Primary	0.0-1.0	0.418 J+	0.836 J+	2.49 J	12.6 J	5.42 J	275 J	3,420 J	3.21 J	5.80 J	7.82 J+	12.2 J	7.51 J	3.64 J	0.985 J	71.3 J	7.26 J	182 J	13.2 J+	
WC-056	Primary	Intermediate	WC-S056-0-1	6/30/2022	RD Decision	0.0-1.0	0.0526 U	0.202 J	0.522 J	2.24 J	0.763 J	36.8	333	0.273 J	0.288 J	0.453 J	0.93 J	0.364 J	0.434 J	0.356 J	4.83	0.458 J	9.4	1.48 J	
WC-057	Primary	Intermediate	WC-S057-0-1	2/13/2023	Primary	0.0-1.0	0.0767 U	0.109 U	0.171 U	0.184 U	0.180 U	1.44 J	13.1	0.0449 U	0.0810 U	0.0710 U	0.0887 U	0.0889 U	0.100 U	0.123 U	0.235 J	0.102 U	0.119 U	0.175 J	
WC-059	Primary	Intermediate	WC-G059	6/14/2022	RD Decision	0.0-1.0	0.0454 U	0.149 U	0.403 J	1.37 J	0.630 J	28.2	304	0.198 J	0.263 J	1.04 J	2.62 J	0.582 J	0.666 J	0.622 J	6.61	0.663 J	18.1	1.58 J	
			WC-S059-1-3	6/29/2022	RD Decision	1.0-3.0	0.785	1.48 J	4.00	26.5	6.88	626	5,410	3.83	8.01	15.3	30.5	10.3	11.3	8.34	127	13.0	296	26.6 J	
			WC-S059-3-5	6/29/2022	Primary	3.0-5.0	0.0898 U	0.184 U	0.297 U	0.310 U	0.286 U	1.47 J	6.86	0.0420 U	0.0992 U	0.106 U	0.163 U	0.169 U	0.183 U	0.218 U	0.714 J	0.133 U	0.399 U	0.262 J	
WC-060	Primary	Intermediate	WC-S060-0-1	6/29/2022	Primary	0.0-1.0	0.111 J-	0.283 J	0.666 J	3.65	1.20 J	68.7	663	0.976	1.44 J	1.47 J	2.73	0.972 J	0.866 J	0.755 J	9.12	0.893 J	18.8	3.05 J-	
			WC-S060-1-3	6/29/2022	RD Decision	1.0-3.0	0.0339 U	0.0766 U	0.223 J	0.187 J	0.153 J	2.80	22.3	0.0251 U	0.0500 U	0.0553 U	0.110 U	0.108 U	0.116 U	0.120 U	0.382 J	0.0641 U	0.657 J	0.184 J	
WC-060-A	Primary	Intermediate	WC-S060-A-0-1	6/30/2022	RD Decision	0.0-1.0	0.273 J	0.449 J	0.91 J	4.19	2.00 J	68.0	838	3.18	5.30 J	4.07 J	6.48	2.23 J	1.33 J	1.02 J	15.8	1.61 J	42.1	5.35 J	
WC-061	Primary	Intermediate	WC-S061-0-1	6/28/2022	Primary	0.0-1.0	0.0467 U	0.188 J	0.382 J	1.37 J	0.500 J	36.0	307	0.321 J	0.551 J	0.518 J	1.08 J	0.355 J	0.325 J	0.344 J	4.09	0.404 J	7.27	1.35 J	
			WC-S061-1-3	6/28/2022	RD Decision	1.0-3.0	0.0437 U	0.0892 U	0.0461 U	0.0471 U	0.0438 U	1.38 J	10.8	0.0354 U	0.0462 U	0.0562 U	0.105 U	0.109 U	0.114 U	0.112 U	0.0914 U	0.106 U	0.184 U	0.124 J	
WC-062	Step Out	Intermediate	WC-S062-0-1	6/28/2022	Primary	0.0-1.0	0.103 U	0.320 U	0.455 U	0.478 U	0.433 U	5.07	45.7	0.108 U	0.196 U	0.205 U	0.518 U	0.537 U	0.549 U	0.650 U	1.40 J	0.186 U	1.94 J	0.512 J	
			WC-S062-1-3	6/28/2022	RD Decision	1.0-3.0	0.0875 U	0.264 U	0.261 U	0.282 U	0.252 U	1.52 J	9.12	0.0869 U	0.179 U	0.184 U	0.199 U	0.205 U	0.230 U	0.264 U	0.209 U	0.287 U	0.446 U	0.316 J	
WC-063	Primary	Intermediate	WC-S063-1-3	6/28/2022	Primary	1.0-3.0	0.111 U	0.208 U	0.267 U	0.275 U	0.251 U	1.11 J	9.10	0.102 U	0.132 U	0.146 U	0.223 U	0.222 U	0.261 U	0.320 U	0.274 U	0.330 U	0.486 U	0.296 J	
			WC-G064	6/13/2022	Primary	0.0-1.0	0.795	1.87 J	4.51	31.7	9.67	810	10,800	2.87	5.04	9.16	19.4	7.54	7.42	4.87	96.0	8.09	266	26.8 J	
WC-064	Step Out	Intermediate	WC-S064-1-3	6/28/2022	RD Decision	1.0-3.0	0.917	1.30 J	1.43 J	7.29	3.19	118	1,595	4.49	5.34	9.7	12.0	9.1	6.80	3.32	203 J	4.68	186 J	13.8 J	
			WC-S065-0-1	6/29/2022	Primary	0.0-1.0	0.872	1.30 J	3.11	20.5	6.64	731	9,360	2.01	3.66	7.63	19.9	7.95	7.85	4.92	129	10.0	381	23.5 J	
WC-065	Step Out	Intermediate	WC-S065-1-3	6/29/2022	Primary	1.0-3.0	1.64	3.79	7.78	57.5	18.3	2,700	37,400	7.60	11.8	22.3	71.8	22.7	23.4	12.2	659	45.7	2,980	80.8	
			WC-S065-3-5	6/29/2022	RD Decision	3.0-5.0	1.36	2.07 J	2.23 J	15.2	4.63	445	5,095	4.73	11.7	15.6	34.2	13.9	11.2	4.97	148	11.9	456	25.3 J	
			WC-S065-5-7	6/29/2022	Primary	5.0-7.0	0.230 U	0.412 U	0.620 U	1.05 J+	0.755 U	12.3	224	0.476 U	0.750 U	1.68 J	0.782 J+	3.04 J	1.17 J+	0.967 U	56.5	0.961 U	21.6	2.35 J+	
WC-069	Primary	Intermediate	WC-S069-1-3	2/15/2023	RD Decision	1.0-3.0	0.0846 U	0.130 U	0.158 U	0.186 U	0.180 U	0.496 J+	4.29 J	0.0356 U	0.0480 J+	0.0434 U	0.0500 U	0.0529 U	0.0607 U	0.0765 U	0.0894 J	0.0600 U	0.222 J	0.163 J+	
WC-069-A	Primary	Intermediate	WC-G069-A	6/15/2022	RD Decision	0.0-1.0	0.0661 U	0.118 U	0.251 J	0.406 J	0.267 J	8.39	106	0.0655 U	0.0917 U	0.104 U	0.254 J	0.103 U	0.0931 U	0.139 U	1.54 J	0.129 U	5.05	0.380 J	
WC-072	Primary	Intermediate	WC-G072	6/15/2022	Primary	0.0-1.0	0.0634 U	0.194 J	0.275 J	0.743 J	0.420 J	13.0	145	1.34	3.59	2.05 J	3.87	1.24 J	0.490 J	0.723 J	3.54	0.539 J	7.49	2.08 J	
WC-077	Step Out	Intermediate	WC-S077-0-1	7/1/2022	Primary	0.0-1.0	0.123 U	0.219 U	0.452 U	0.455 U	0.420 U	1.49 J	9.85	0.0984 U	0.131 U	0.138 U	0.160 U	0.149 U	0.173 U	0.198 U	0.276 U	0.325 U	0.434 U	0.320 J	
			WC-S077-1-3	7/1/2022	RD Decision	1.0-3.0	0.117 U	0.232 U	0.329 U	0.328 U	0.305 U	0.832 J	4.55 J	0.113 U	0.177 U	0.190 U	0.177 U	0.173 U	0.183 U	0.208 U	0.161 U	0.193 U	0.457 U	0.308 J	
WC-079	Primary	Intermediate	WC-G079	6/15/2022	Primary	0.0-1.0	0.0610 U	0.113 U	0.459 J	0.930 J	0.580 J	20.1	216	0.258 J	0.212 J	0.279 J	1.04 J	0.380 J	0.287 J	0.310 J	4.34	0.574 J	12.7	0.920 J	
			WC-S079-1-3	2/15/2023	Primary	1.0-3.0	0.387 U	0.810 U	0.420 U	0.459 U	0.457 U	10.3	129	0.129 U	0.										

Table 4-1b
Surface and Subsurface Sediment Results for PCDD/Fs

Method							PCDD/Fs by EPA 1613/1613b (pg/g)																		
Screening Criteria							2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	2,3,7,8-TCDD TEQ	
Sediment Screening Levels																									
Table 17 ROD Cleanup Level							0.2	0.2	—	—	—	—	—	0.40658	—	0.3	0.4	—	—	—	—	—	—	—	10
Table 21 Site-Wide RAL or EPA PQL ¹							1	2.5	—	—	—	—	—	—	—	200	—	—	—	—	—	—	—	—	
Table 21 PTW Threshold							10	10	—	—	—	—	—	600	—	200	400	—	—	—	—	—	—	—	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																			
WC-091	Infill Sampling	Shallow	WC-S091-0-1	2/15/2023	Primary	0.0-1.0	0.762 J+	3.22 J+	5.39	66.6	15.6	1,460	23,300	6.91	14.0	14.3	34.9	18.2	10.7	6.41	148	10.6	263	48.4 J+	
			WC-S091-1-2	2/15/2023	RD Decision	1.0-2.0	0.633 J+	3.02 J	4.78 J	43.7	12.3	830	10,210	3.67 J	4.41 J	8.0	11.0	5.66	6.03 J	2.59 J	73.3	5.57	140	27.4 J+	
			WC-S091-2-3	2/15/2023	Primary	2.0-3.0	0.902	2.41 J+	3.38 J	26.9	8.52	514	5,820	2.97	3.26 J	6.27	7.73	3.97 J	4.18 J	0.720 J+	49.5	3.42 J	109	18.6 J+	
			WC-S091-3-4	2/15/2023	Primary	3.0-4.0	0.662	1.66 J	1.60 J	12.2	4.07	207	2,120	2.00	1.36 J	3.48	2.58	1.54 J	1.57 J	0.921 J	16.6	1.27 J	31.9	8.95 J	
			WC-S091-4-5	2/15/2023	Primary	4.0-5.0	1.21	2.63	2.91	21.3	8.00	434	4,840	8.45	5.09	10.3	8.94	4.12	1.97 J+	1.94 J+	43.4	3.84	82.1	19.1 J+	
			WC-S091-5-6	2/15/2023	Primary	5.0-6.0	1.83	3.13	3.95	28.8	10.1	880	11,200	10.4	7.40	28.7	27.1	13.5	12.3	3.14	125	12.4	301	38.3	
			WC-S091-6-7	2/15/2023	Primary	6.0-7.0	1.82	7.24	8.23	62.8	27.8	2,240	39,300	15.2	16.5	24.1	61.5	26.6	23.1	11.6	553	41.3	1,990	81.2	
			WC-S091-7-8	2/15/2023	Primary	7.0-8.0	1.36	4.67	6.39	42.9	17.9	1,450	21,300	28.2	156	73.0	180	45.1	23.7	29.6	414	43.0	1,570	95.9	
WC-092	Infill Sampling	Intermediate	WC-S091-8-9	2/15/2023	Primary	8.0-9.0	0.777	2.26 J	3.77	37.6	10.6	1,700	24,600	3.74	9.62	29.8	103	29.4	26.2	8.46	557	41.4	1,470	65.3 J	
			WC-S092-0-1	2/14/2023	Primary	0.0-1.0	0.107 U	0.200 U	0.345 U	0.398 U	0.380 U	0.377 U	2.86 J+	0.0604 U	0.105 U	0.0850 U	0.201 U	0.211 U	0.244 U	0.306 U	0.259 U	0.277 U	0.256 U	0.281 J+	
WC-094	Infill Sampling	Intermediate	WC-S092-1-3	2/14/2023	Primary	1.0-3.0	0.107 U	0.238 U	0.279 U	0.330 U	0.308 U	0.807 J	4.98 J	0.0629 U	0.0928 U	0.0819 U	0.127 U	0.136 U	0.154 U	0.184 U	0.397 U	0.367 U	0.228 U	0.279 J	
			WC-S094-0-1	2/14/2023	Primary	0.0-1.0	0.0819 U	0.221 U	0.229 U	0.262 U	0.251 U	0.654 J+	3.66 J	0.0550 U	0.0826 U	0.0752 U	0.108 U	0.109 U	0.125 U	0.153 U	0.335 U	0.302 U	0.192 U	0.239 J+	
WC-095	Infill Sampling	Intermediate	WC-S094-1-3	2/14/2023	Primary	1.0-3.0	0.0925 U	0.161 U	0.243 U	0.265 U	0.263 U	0.374 J	2.22 J	0.0462 U	0.119 U	0.100 U	0.0905 U	0.0906 U	0.106 U	0.136 U	0.178 U	0.175 U	0.252 U	0.212 J	
			WC-S095-0-1	2/16/2023	Primary	0.0-1.0	0.202 U	0.349 U	0.384 U	1.03 J+	0.437 U	25.6	403	0.191 U	0.178 U	0.212 J+	0.566 J+	0.408 U	0.470 U	0.117 J+	4.03 J	0.175 J+	13.7	1.03 J+	
			WC-S095-1-3	2/16/2023	Primary	1.0-3.0	0.169 U	0.257 U	0.200 U	0.223 U	0.234 U	3.88 J	39.7	0.216 U	0.176 U	0.156 U	0.195 U	0.198 U	0.224 U	0.278 U	0.782 J+	0.239 U	1.76 J	0.388 J+	
WC-DG001	Porewater Co-located	Shallow	WC-DG001	8/25/2022	Primary	0.0-1.0	0.222 J	0.461 J	0.928 J	3.16	1.44 J	47.4	408	0.765	0.668 J	2.17 J	2.27 J	1.75 J	1.55 J	0.713 J	15.6	1.07 J	24.1	3.38 J	
WC-DG002	Porewater Co-located	Intermediate	WC-DG002	8/25/2022	Primary	0.0-1.0	1.02	5.41	7.20	69.8	33.5	931	9,550	4.17	7.97	17.3	26.9	13.6	12.7	7.96	173	11.9	348	43.6	
WC-DG003	Porewater Co-located	Intermediate	WC-DG003	8/28/2022	RD Decision	0.0-1.0	1.45	6.71	15.2	112	31.6	2,020	18,550	3.63	7.66	17.2	32.0	14.0	17.7	10.7	201	13.8	328	65.2	
WC-DG004	Porewater Co-located	Shallow	WC-DG004	8/28/2022	Primary	0.0-1.0	0.712	2.27 J	4.36	34.4	8.97	757	7,550	4.75	8.31	9.56	15.8	27.3	11.0	4.15	405	11.5	1,020	31.5 J	
WC-DG005	Porewater Co-located	Shallow	WC-DG005	8/28/2022	Primary	0.0-1.0	0.380 J	0.899 J	1.74 J	10.8	3.98	219	2,880	1.90	10.2	9.25	17.2	132	22.8	4.43	962	10.7	467	36.8 J	
WC-DG006	Porewater Co-located	Shallow	WC-DG006	8/26/2022	Primary	0.0-1.0	0.120 U	0.200 J	0.432 J	1.43 J	0.624 J	28.4	251	0.555	0.964 J	0.867 J	2.30 J	0.837 J	0.651 J	0.624 J	7.37	1.70 J	24.6	1.75 J	
WC-DG007	Porewater Co-located	Intermediate	WC-DG007	8/29/2022	Primary	0.0-1.0	0.498 J	2.11 J	2.11 J	9.65	3.45 J	96.2	1,030	1.45	1.83 J	6.61	10.5	5.20	5.47	4.39 J	34.9	3.19 J	40.3	10.5 J	
WC-DG008	Porewater Co-located	Intermediate	WC-DG008	8/29/2022	Primary	0.0-1.0	0.559	0.788 J	1.86 J	11.6	3.29	306	3,400	1.63	2.37 J	3.86	9.48	3.22	3.40	2.69	51.3	4.16	129	11.0 J	
WC-DG009	Porewater Co-located	Intermediate	WC-DG009	8/25/2022	Primary	0.0-1.0	0.0391 U	0.134 U	0.332 J	1.21 J	0.333 J	33.5	237	0.0565 U	0.0909 J	0.180 J	0.357 J	0.187 J	0.237 J	0.217 J	5.74	0.373 J	32.2	0.910 J	
WC-DG010	Porewater Co-located	Intermediate	WC-DG010	8/25/2022	Primary	0.0-1.0	1.03	3.49	7.50	54.7	15.2	1,180	13,100	6.67	12.4	20.5	49.0	14.0	15.9	10.5	237	17.2	529	46.8	
WC-DG011	Porewater Co-located	Intermediate	WC-DG011	8/26/2022	Primary	0.0-1.0	0.0531 U	0.253 J	0.683 J	1.82 J	0.948 J	39.3	375	0.185 J	0.249 J	0.353 J	0.633 J	0.293 J	0.398 J	0.284 J	4.37	0.397 J	12.4	1.47 J	
WC-DG012	Porewater Co-located	Intermediate	WC-DG012	8/26/2022	Primary	0.0-1.0	0.0521 U	0.136 J	0.359 J	1.05 J	0.452 J	20.7	234	0.153 J	0.163 J	0.321 J	0.877 J	0.299 J	0.274 J	0.360 J	4.00	0.408 J	12.2	0.971 J	

Table 4-1b
Surface and Subsurface Sediment Results for PCDD/Fs

Notes
Yellow highlight = Result exceeds the referenced ROD Cleanup Level
Orange highlight = Result exceeds the referenced Site-Wide RAL or EPA PQL
Red highlight = Result exceeds the referenced PTW Threshold
BOLD = Detection
-- = Not analyzed or not applicable
1. Per the September 22, 2022, EPA memorandum prepared with subject line “Evaluation of consistently and reliably attainable practical quantification limits for 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD for use in Sediment Management Area delineation at the Portland Harbor Superfund Site,” the practical quantification limit of 1.0 picograms/gram and 2.5 picograms/gram were used for delineation of 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD, respectively.
EPA = U.S. Environmental Protection Agency
ft = foot or feet
HpCDD = heptachlorodibenzo-p-dioxin
HpCDF = heptachlorodibenzofuran
HxCDD = hexachlorodibenzo-p-dioxin
HxCDF = hexachlorodibenzofuran
J- = The result is an estimated quantity, but the result may be biased low.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
OCDD = octachlorodibenzo-p-dioxin
OCDF = octachlorodibenzofuran
PCDD/F: Polychlorinated dibenzo-p-dioxins and furans
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
pg/g = picograms per gram
PQL = Practical Quantitation Limit
PTW = Principal Threat Waste
RAL = Remedial Action Level
RD = remedial design
ROD = Record of Decision
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran
TEQ = toxicity equivalency quotient
U = Result not detected above the referenced laboratory detection limit.
UJ- = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and biased low.

Table 4-1c
Surface and Subsurface Sediment Results for PAHs

Method							Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)																	Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)						
Screening Criteria							2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene	Total LPAH	Total HPAH	cPAHs	Total PAHs	
Sediment Screening Levels																														
Table 17 ROD Cleanup Level							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	774	23,000
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30,000
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	—	—	—	—	—	140,000	—	—	—	—	—	—	774,000	—	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																								
WC-001	Primary	Shallow	WC-S001-0-1	6/29/2022	Primary	0.0-1.0	5,100	4,300	35	760	280	130	150 J+	74	47	58 J+	240	11	2,000	2,700	49	240	41	5,200	1,500	18,000	4,500 J+	190 J+	23,000 J+	
			WC-S001-1-2	6/29/2022	RD Decision	1.0-2.0	11	14	7.1 U	7.1	19	20	25 J+	16	10	8.2 J+	14	7.1 U	30	12	12	39 J	13	28	78	120 J	220 J+	27 J+	330 J+	
			WC-S001-2-3	6/29/2022	RD Decision	2.0-3.0	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	9.2	9 J+	7.1 U	10	8.2 J+	7.1 U	16	7.1 U	7.1 U	13 J+	8.1	7.1 U	7.1 U	13	29	89 J+	14 J+	120 J+	
WC-002	Primary	Shallow	WC-S002-1-2	2/16/2023	Primary	1.0-2.0	330 J	500 J	31 J	120 J	330 J	400 J	490 J+	300 J	230 J	140 J+	440 J	48 J	1,100 J	210 J	240 J	1,000 J	120 J	990 J	1,300 J	3,200 J	4,700 J+	530 J+	7,900 J+	
			WC-S002-2-3	2/16/2023	RD Decision	2.0-3.0	72 J	48 J	43 J	37 J	221 J	362 J	630 J+	330 J	139 J	167 J+	293 J	58 J	260 J	44 J	179 J	300 J	134 J	190 J	320 J	730 J	2,600 J+	490 J+	3,400 J+	
			WC-S002-3-4	2/16/2023	Primary	3.0-4.0	69	52	16 J	21 J	38 J	42 J	47 J+	33 J	46	16 J+	58	20 U	170	45	39 J	220	170	200	170	620 J	640 J+	58 J+	1,300 J+	
			WC-S002-4-4.5	6/29/2022	Primary	4.0-4.5	170	130	68	160	690	980	960 J+	610	660	360 J+	900	150	1,400	99	650	440	330	910	1,800	2,000	8,600 J+	1,300 J+	11,000 J+	
			WC-S002-4.5-5.5	6/29/2022	RD Decision	4.5-5.5	530	440	330 J	600 J	3,150 J	3,950	3,950 J+	2,300	3,150	1,400 J+	2,850	820	4,450 J	345	3,400 J+	2,050 J	835 J	2,450 J	6,000 J	6,700 J	33,000 J+	5,300 J+	40,000 J+	
			WC-S002-5.5-7	6/29/2022	Primary	5.5-7.0	140	130	27	44	95	110	120 J+	72	120	38 J+	76	23	250	62	120 J+	400	61	270	280	1,100	1,200 J+	150 J+	2,300 J+	
			WC-S002-7-8	6/29/2022	Primary	7.0-8.0	84	50	78	49	120	220	200 J+	140	220	73 J+	130	23	220	47	190	450	62	220	360	980	1,800 J+	280 J+	2,700 J+	
			WC-S002-8-9	6/29/2022	Primary	8.0-9.0	45	26	50	30	58	110	99 J+	73	110	32 J+	57	11	130	31	88	320	57	160	280	660	980 J+	140 J+	1,600 J+	
WC-003	Primary	Shallow	WC-S003-1-2	2/16/2023	Primary	1.0-2.0	110 J	91 J	59 J	110 J	300 J	420 J	420 J+	300 J	310 J	120 J+	460 J	88 J	520 J	86 J	290 J	390 J	190 J	770 J	1,600 J	1,600 J	4,500 J+	550 J+	6,100 J+	
			WC-S003-2-3	2/16/2023	Primary	2.0-3.0	30 J	39 J	33 J	88 J	230 J	180 J	170 J+	190 J	140 J	33 J+	320 J	52 J	480 J	43 J	91 J	110 J	110 J	430 J	580 J	770 J	2,300 J+	240 J+	3,000 J+	
			WC-S003-3-4	2/16/2023	Primary	3.0-4.0	10 U	14 U	9.8 J	15 J	42	44	37 J+	34 J	35 J	11 U	57	16 U	61	10 U	26 J	18 J	55	64	89	120 J	410 J+	56 J+	530 J+	
			WC-S003-4-5	2/16/2023	Primary	4.0-5.0	17	78	12 J	18	17	21	20 J+	11 J	14 J	6.0 J+	20	6.6 U	28	39	13 J	34	98	77	49	280 J	190 J+	27 J+	470 J+	
			WC-S003-5-6	6/22/2022	Primary	5.0-6.0	5.2 U	5.6	5.2 U	5.2 U	24	42	47 J+	32	36	17 J+	25	9.8	38	5.7	35	11	47	17	51	47	330 J+	56 J+	370 J+	
			WC-S003-6-7	6/22/2022	Primary	6.0-7.0	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	27	6.1	44
WC-003-A	Porewater Co-Located	Shallow	WC-G003-A	8/29/2022	Primary	0.0-1.0	220	1,200	230	2,000	19,000	27,000	28,000 J+	17,000	23,000	11,000 J+	21,000	5,600	25,000	680	27,000	480	5,900	9,700	29,000	15,000	220,000 J+	36,000 J+	230,000 J+	
WC-004	Primary	Shallow	WC-S004-1-2	2/16/2023	Primary	1.0-2.0	160 J	200 J	170 J	290 J	1,600 J	2,400 J	2,300 J+	1,600 J	1,300 J	700 J+	2,000 J	240 UJ	4,400 J	150 UJ	1,300 J	790 J	650 J	2,000 J	6,600 J	3,700 J	23,000 J+	3,000 J+	26,000 J+	
			WC-S004-2-3	2/16/2023	RD Decision	2.0-3.0	28 J	45 J	35 J	16 J	27 J	50 J	50 J+	32 J	54 J	15 J+	33 J	98 J	19 J	46 J	170 J	81 J	97 J	155 J	410 J	540 J+	65 J+	950 J+		
			WC-S004-3-4	2/16/2023	Primary	3.0-4.0	48	71	64	57	130	190	160 J+	120	180	57 J+	160	42	320	41	150	240	230	300	450	820	1,800 J+	250 J+	2,700 J+	
			WC-S004-4-5	2/16/2023	Primary	4.0-5.0	37 J	46	100	49	67	150	130 J+	97	180	36 J+	110	20 U	320	39 J	140	340	150	280	450	890 J	1,600 J+	190 J+	2,500 J+	
			WC-S004-5-6	6/22/2022	Primary	5.0-6.0	11 J	18	14	16	67	110	100 J+	71	89	35 J+	95	15	140	9.4 J	78	65	51	110	230	240 J	960 J+	140 J+	1,200 J+	
			WC-S004-6-7	6/22/2022	RD Decision	6.0-7.0	5.7 U	5.7 U	5.7 U	5.7 U	24 J	108 J	200 J+	5.7 U	314 J	210 J+	33 J	358 J	5.7 U	5.7 U	254 J	5.7 U	15	5.7 U	5.7 U	5.7 U	1,500 J+	210 J+	1,500 J+	
			WC-S004-7-8	6/22/2022	Primary	7.0-8.0	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	8.3	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	
			WC-S005-0-1	6/21/2022	Primary	0.0-1.0	120	57	12	56	160	130	170 J+	100	74	46 J+	140	23	280	52	78	110	460	300	360	710	1,500 J+	180 J+	2,200 J+	
WC-005	Primary	Shallow	WC-S005-1-2	6/21/2022	Primary	1.0-2.0	88	120	26	60	180	220	240 J+	170	180	60 J+	180	25	380	50	170	410	100	430	570	1,200	2,200 J+	290 J+	3,400 J+	
			WC-S005-2-3	6/21/2022	Primary	2.0-3.0	39	32	56	45	76	77	93 J+	57	52	30 J+	68	11	200	39	56	190	61	210	270	610	930 J+	100 J+	1,500 J+	
WC-007	Primary	Shallow	WC-S007-2-3	6/23/2022	Primary	2.0-3.0	19	120	9.4	42	57	52	54 J+	41	38	18 J+	57	8.2	300	97	39	29	22	730	390	1,000	1,000 J+	70 J+	2,100 J+	
WC-008	Primary	Shallow	WC-S008-1-2	2/15/2023	Primary	1.0-2.0	140 J	43 J	60 J	92 J	910 J	1,300 J	1,200 J+	970 J	1,100 J	390 J+	1,300 J	230 J	1,800 J	82 J	1,000 J	220 J	330 J	1,300 J	2,700 J	1,900 J	12,000 J+	1,700 J+	14,000 J+	
			WC-S008-2-3	2/15/2023	Primary	2.0-3.0	16 J	13 J	12 J	22 J	96 J	220 J	200 J+	120 J	—	52 J+	190 J	31 J	250 J	16 J	190 J	54 J	49 J	220 J	360 J	350 J	1,600 J+A	280 J+	1,900 J+A	
			WC-S008-3-4	2/15/2023	Primary	3.0-4.0	66	72	7.6 U	24 J	56	77	90 J+	68	70	29 J+	78	18 J	130	48	60	200	25 J	150	140	560 J	750 J+	100 J+	1,300 J+	
			WC-S008-4-5	6/23/2022	Primary	4.0-5.0	100	41	96	83	490	420	410 J+	370	230	160 J+	480	76	650	41	250	160	130	620	1,200	1,100	4,400 J+	560 J+	5,500 J+	
			WC-S008-5-6	6/23/2022	Primary	5.0-6.0	330	120	280	310	1,000	860	940 J+	700	310	240 J+	1,100	110	1,100	210	350	390	260	1,400	3,200	3,000	9,200 J+	1,100 J+	12,000 J+	

Table 4-1c
Surface and Subsurface Sediment Results for PAHs

Method							Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)																	Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)						
Screening Criteria							2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Pyrene	Phenanthrene	Pyrene	Total LPAH	Total HPAH	cPAHs	Total PAHs	
Sediment Screening Levels																														
Table 17 ROD Cleanup Level							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	774	23,000
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30,000
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	140,000	—	—	—	—	—	—	774,000	—
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																								
WC-010	Primary	Shallow	WC-S010-1-2	2/15/2023	RD Decision	1.0-2.0	1.9 UJ	2.5 UJ	1.6 UJ	1.3 J	7.6 J	13 J	16 J+	13 J	17 J	5.3 J+	11 J	4.3 J	12 J	1.9 UJ	15 J	2.8 J	5.7 J	6.1 J	18 J	14 J	120 J+	18 J+	130 J+	
			WC-S010-2-3	2/15/2023	Primary	2.0-3.0	2.3 J	2.5 UJ	2.3 J	5.5 J	30 J	81 J	96 J+	78 J	110 J	30 J+	46 J	27 J	47 J	1.9 UJ	110 J	6.0 J	30 J	25 J	67 J	43 J	640 J+	110 J+	690 J+	
			WC-S010-3-4	6/23/2022	RD Decision	3.0-4.0	6.1 U	6.1 U	6.1 U	6.1 U	34 J	35 J	55 J+	34 J	28 J	18 J+	30 J	15 J	40 J	6.1 U	35 J	6.1 U	13	14 J	46 J	32 J	340 J+	51 J+	370 J+	
WC-012	Primary	Shallow	WC-S010-4-5	6/23/2022	Primary	4.0-5.0	6.5 U	6.5 U	6.5 U	6.5 U	21	24	36 J+	24	19	9.8 J+	20	7.5	24	6.5 U	23	6.5 U	6.5 U	8.9	32	28	220 J+	34 J+	250 J+	
			WC-S012-0-1	6/24/2022	Primary	0.0-1.0	8.8 U	10	8.8 U	8.8 U	11	13	15 J+	10	8.8 U	8.8 U	8.9	8.8 U	19	8.8 U	9.0	12	17	8.8 U	26	44	120 J+	17 J+	160 J+	
			WC-S012-1-2	6/24/2022	Primary	1.0-2.0	11	25	8.7 U	11	43	64	77 J+	55	37	23 J+	38	10	49	8.7 U	45	27	32	18	81	100	470 J+	84 J+	570 J+	
WC-013	Porewater Co-Located	Shallow	WC-S013-0-1	6/25/2022	Primary	0.0-1.0	13	18	9.6 U	71	100	69	100 J+	59	30	30 J+	80	9.9	210	17	43	43	77	110	200	280	870 J+	98 J+	1,100 J+	
	Primary	Shallow	WC-S013-1-2	6/25/2022	Primary	1.0-2.0	8.6 U	13	8.6 U	11	73	75	96 J+	51	27	38 J+	47	12	78	8.6 U	44	8.6 U	29	33	78	74	570 J+	100 J+	840 J+	
			WC-S013-2-3	6/25/2022	Primary	2.0-3.0	92	340	9.8 U	29	120	52	90 J+	47	17	27 J+	90	9.8 U	400	41	25	220	51	450	360	1,200	1,200 J+	80 J+	2,400 J+	
WC-014	Primary	Shallow	WC-S014-1-2	6/25/2022	Primary	1.0-2.0	17	51	7.3 U	11	34	22	35 J+	20	10	9.1 J+	25	7.3 U	100	25	13	43	19	100	96	250	350 J+	32 J+	600 J+	
			WC-S014-2-3	6/25/2022	RD Decision	2.0-3.0	7.3 U	11	7.3 U	7.3 U	15	15	22 J+	14	7.7	7.6 J+	14	7.3 U	26 J	7.3 U	11	11	18 J	15 J	28	52 J	150 J+	21 J+	200 J+	
WC-015	Primary	Shallow	WC-S015-1-2	6/25/2022	Primary	1.0-2.0	7.2 U	12	7.2 U	7.2 U	13	12	17 J+	12	7.5	7.2 U	11	7.2 U	30	7.2 U	9.7	7.2 U	11	19	36	49	140 J+	17 J+	190 J+	
			WC-S015-2-3	6/25/2022	Primary	2.0-3.0	6.3 U	11	6.3 U	6.3 U	21	26	38 J+	52	33	9.2 J+	21	7.9	23	6.3 U	38	8.8	30	16	40	48	260 J+	38 J+	310 J+	
WC-016	Primary	Shallow	WC-S016-1-2	6/30/2022	Primary	1.0-2.0	6.7 U	11	6.7 U	6.7 U	8.7	54	53	66 J+	36	36	26 J+	50	12	92	6.7 U	47	6.7 U	11	43	83	68	520 J+	74 J+	590 J+
			WC-S016-2-3	6/30/2022	RD Decision	2.0-3.0	6.9 U	6.9 U	6.9 U	6.9 U	25 J	26	39 J+	22	26	14 J+	23 J	9.2	37 J	6.9 U	32	6.9 U	8.8	21	43 J	42	270 J+	38 J+	320 J+	
WC-017	Primary	Shallow	WC-S017-1-2	6/27/2022	RD Decision	1.0-2.0	20	70 J	7.2 U	7.2 U	20	14	16 J+	9	12	7.2 U	13	7.2 U	62 J	13	14 J+	39 J	12	95 J	61	240 J	220 J+	20 J+	460 J+	
			WC-S017-2-3	6/27/2022	Primary	2.0-3.0	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	7.2	6.9 U	38	6.9 U
WC-018	Porewater Co-Located	Shallow	WC-S018-0-1	6/27/2022	Primary	0.0-1.0	7.6 U	7.6 U	7.6 U	7.6 U	11	9.4	19 J+	12	12	7.6 U	14	7.6 U	25	7.6 U	13 J+	17	9.4	18	46	54	160 J+	15 J+	210 J+	
	Primary	Shallow	WC-S018-1-2	6/27/2022	Primary	1.0-2.0	54	34	17	30	160	160	200 J+	110	120	66 J+	120	36	240	23	150 J+	360	87	110	380	630	1,600 J+	220 J+	2,300 J+	
			WC-S018-2-3	6/27/2022	RD Decision	2.0-3.0	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	14	6.9 U	7.2	13	38	44	6.9 U	83	
WC-019	Primary	Shallow	WC-S019-1-2	6/28/2022	Primary	1.0-2.0	9.9	15	7.6	9.9	35	33	45 J+	26	35	16 J+	29	8.6	67	8.7	36 J+	35	7.9	84	100	170	410 J+	47 J+	580 J+	
WC-019-A	Primary	Shallow	WC-S019-2-3	6/28/2022	RD Decision	2.0-3.0	81	43	55	33	89	94	109 J+	61	93	41 J+	66	30	150 J	37	115 J+	255	66	175 J	215 J	680 J	1,000 J+	130 J+	1,700 J+	
WC-023	Primary	Intermediate	WC-G019-A	6/13/2022	Primary	0.0-1.0	8.8 U	43 J-	12 J-	38 J-	340	570	550 J+	410	370	190 J+	320	91	530	21 J-	360	34 J-	680	170 J-	640	320 J-	4,000 J+	730 J+	4,300 J	
WC-025	Primary	Intermediate	WC-S023-0-1	2/16/2023	Primary	0.0-1.0	41 J	72 J	10 J	35 J	120 J	140 J	160 J+	110 J	100 J	43 J+	130 J	22 J	200 J	29 J	100 J	200 J	120 J	130 J	290 J	520 J	1,300 J+	190 J+	1,800 J+	
WC-025	Primary	Intermediate	WC-S025-3-5	6/30/2022	Primary	3.0-5.0	4.9 U	4.9 U	4.9 U	4.9 U	13	10	12 J+	6.7	7.7	4.9 U	10	4.9 U	18	4.9 U	8.7	15	4.9 U	7.0	25	34	110 J+	14 J+	140 J+	
WC-025-A	Porewater Co-Located	Intermediate	WC-G025-A	6/14/2022	Primary	0.0-1.0	5.6 U	5.6 UJ-	5.6 UJ-	5.6 UJ-	8.1	11	13 J+	9.7	12	6.2 J+	7.8	5.6 U	6.4	5.6 UJ-	12	5.6 UJ-	20	5.6 UJ-	12	5.6 UJ-	91 J+	15 J+	110 J	
WC-030-A	Porewater Co-Located	Intermediate	WC-G030-A	6/13/2022	Primary	0.0-1.0	35	15 J-	8.4 UJ-	20 J-	52	57	76 J+	49	38	30 J+	62	20	160	23 J-	41	60 J-	270	68 J-	150	230 J-	690 J+	80 J+	910 J	
WC-032-A	Porewater Co-Located	Intermediate	WC-G032-A	6/13/2022	Primary	0.0-1.0	14 U	14 UJ-	14 UJ-	32 J-	140	200	310 J+	200	140	91 J+	230	44	450	19 J-	160	14 UJ-	490	130 J-	420	210 J-	2,200 J+	280 J+	2,400 J	
WC-033-A	Porewater Co-Located	Intermediate	WC-G033-A	8/28/2022	Primary	0.0-1.0	360	7,100	63	1,000	350	110	180 J+	81	100	68 J+	270	65	2,500	5,100	140	350	33	7,400	1,700	21,000	5,500 J+	190 J+	27,000 J+	
WC-037-A	Primary	Intermediate	WC-G037-A	6/13/2022	Primary	0.0-1.0	8.5 U	8.5 UJ-	8.5 UJ-	8.5 UJ-	17	21	28 J+	18	16	11 J+	18	8.5 U	49	8.5 UJ-	16	8.5 UJ-	110	18 J-	43	44 J-	220 J+	29 J+	270 J	
WC-041-A	Porewater Co-Located	Intermediate	WC-G041-A	8/28/2022	Primary	0.0-1.0	520	11,000	110	1,800	740	230	370 J+	170	160	150 J+	620	79	4,800	8,600	230	610	63	14,000	3,200	37,000	11,000 J+	390 J+	47,000 J+	
WC-047-A	Primary	Intermediate	WC-C047-A-0-1	3/21/2023	Primary	0.0-1.0	5.0 J	11 J	2.7 U	7.9 J	11	9.7 J	22 J+	12	10 J	6.9 J+	22	5.0 U	51	6.7 J	10 J	10 J	88	19	52	61 J	200 J+	15 J+	260 J+	
WC-048-A-1	Primary	Intermediate	WC-S056-0-1	6/15/2022	Primary	0.0-1.0	6.5 U	6.5 UJ-	6.5 UJ-	6.5 UJ-	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 UJ-	6.5 U	6.5 UJ-	18	6.5 UJ-	6.5 U	6.5 UJ-	6.5 U	6.5 UJ-	6.5 UJ-	
WC-048-A-2	Primary	Intermediate	WC-G048-A-2	6/15/2022	Primary	0.0-1.0	6.6 U	6.6 UJ-	6.6 UJ-	6.6 UJ-	6.6 U	6.6 U	6.6 U	6.																

Table 4-1c
Surface and Subsurface Sediment Results for PAHs

Method							Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)																	Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)										
Screening Criteria							2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene	Total LPAH	Total HPAH	cPAHs	Total PAHs					
Sediment Screening Levels																																		
Table 17 ROD Cleanup Level							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	774	23,000					
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30,000				
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	140,000	—	—	—	—	—	774,000	—					
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																												
WC-065	Step Out	Intermediate	WC-S065-0-1	6/29/2022	Primary	0.0-1.0	150	67	22	40	52	82	78 J+	55	72	29 J+	58	8.8	150	64	66	1,200	50	190	230	1,700	830 J+	110 J+	2,600 J+					
			WC-S065-1-3	6/29/2022	Primary	1.0-3.0	11,000	14,000	120	2,900	1,000	290	450 J+	210	99	170 J+	790	29	8,000	10,000	110	1,600	96	21,000	5,600	61,000	17,000 J+	470 J+	77,000 J+					
			WC-S065-3-5	6/29/2022	RD Decision	3.0-5.0	8,000	8,900	97	2,300	930 J	315 J	505 J+	260	180	160 J+	885	29 J	7,500 J	6,350	180	3,750 J	115	14,500	4,550 J	44,000 J	15,000 J+	500 J+	59,000 J+					
			WC-S065-5-7	6/29/2022	Primary	5.0-7.0	67 J	110 J	43 J	82 J	170 J	250 J	260 J+	200 J	350 J	110 J+	230 J	65 J	610 J	63 J	300 J	280 J	200 J	430 J	800 J	1,100 J	3,100 J+	340 J+	4,200 J+					
WC-069	Primary	Intermediate	WC-S069-1-3	2/15/2023	RD Decision	1.0-3.0	2.7 UJ	3.6 UJ	2.3 UJ	1.3 UJ	140 J	1,000 J	820 J+	2.0 UJ	1,900 J	940 J+	190 J	2,100 J	10 J	2.7 UJ	1,900 J	3.6 UJ	340 J	2.4 UJ	11 J	3.6 UJ	9,000 J+	1,600 J+	9,000 J+					
WC-069-A	Primary	Intermediate	WC-G069-A	6/15/2022	RD Decision	0.0-1.0	5.4 U	5.4 UJ-	5.4 UJ-	5.4 UJ-	15 J	17	21 J+	12	21 J	19 J+	15	32 J	13	5.4 UJ-	21 J	5.4 UJ-	18	6.4 J-	23 J	23 J-	200 J+	28 J+	220 J					
WC-072	Primary	Intermediate	WC-G072	6/15/2022	Primary	0.0-1.0	7.4 U	7.4 UJ-	7.4 UJ-	7.4 UJ-	17	34	33 J+	24	27	13 J+	18	7.9	35	7.4 UJ-	30	16 J-	41	26 J-	41	61 J-	260 J+	44 J+	320 J					
WC-079	Primary	Intermediate	WC-G079	6/15/2022	Primary	0.0-1.0	5.6 U	5.6 UJ-	5.6 UJ-	5.6 UJ-	5.6 U	9.7	10 J+	7.6	7.8	5.6 U	6.8	5.6 U	15	5.6 UJ-	7.3	5.6 UJ-	58	5.6 UJ-	14	5.6 UJ-	79 J+	12 J+	99 J					
			WC-S079-1-3	2/15/2023	Primary	1.0-3.0	1.7 UJ	2.3 UJ	1.5 J	8.2 J	35 J	440 J	310 J+	14 J	880 J	320 J+	46 J	890 J	37 J	1.8 UJ	850 J	2.3 UJ	23 J	35 J	100 J	49 J	3,900 J+	680 J+	4,000 J+					
WC-080	Infill Sampling	Intermediate	WC-S080-0-1	2/13/2023	Primary	0.0-1.0	3.3 J	2.7 UJ	4.0 J	5.4 J	33 J	59 J	56 J+	40 J	53 J	18 J+	41 J	10 J	64 J	2.9 J	52 J	6.3 J	19 J	28 J	87 J	51 J	470 J+	76 J+	520 J+					
			WC-S080-1-3	2/13/2023	Primary	1.0-3.0	1.8 UJ	2.4 UJ	1.5 UJ	6.7 J	26 J	42 J	44 J+	22 J	24 J	14 J+	29 J	5.4 J	56 J	1.9 UJ	30 J	2.4 UJ	10 J	27 J	56 J	39 J	330 J+	54 J+	370 J+					
WC-081	Infill Sampling	Intermediate	WC-S081-0-1	2/16/2023	Primary	0.0-1.0	1,100 J	2,200 J	31 J	470 J	620 J	330 J	540 J+	240 J	150 J	120 J+	720 J	35 J	3,300 J	1,200 J	160 J	1,900 J	94 J	4,900 J	3,100 J	12,000 J	9,100 J+	490 J+	21,000 J+					
			WC-S081-1-3	2/16/2023	RD Decision	1.0-3.0	1,600 J	3,500 J	50 J	560 J	635 J	365 J	440 J+	270 J	185 J	115 J+	655 J	37 J	3,250 J	1,550 J	190 J	3,350 J	125 J	4,700 J	2,750 J	15,000 J	8,600 J+	510 J+	24,000 J+					
WC-082	Infill Sampling	Intermediate	WC-S082-0-1	2/16/2023	Primary	0.0-1.0	380 J	1,200 J	84 J	210 J	1,100 J	1,300 J	1,300 J+	820 J	780 J	340 J+	1,100 J	110 J	1,900 J	320 J	750 J	2,000 J	490 J	840 J	3,900 J	5,000 J	13,000 J+	1,700 J+	18,000 J+					
			WC-S082-1-2	2/16/2023	Primary	1.0-2.0	430 J	1,200 J	55 J	270 J	1,200 J	1,000 J	1,500 J+	820 J	470 J	360 J+	1,700 J	88 J	4,600 J	380 J	470 J	690 J	240 J	3,100 J	5,000 J	6,100 J	16,000 J+	1,400 J+	23,000 J+					
			WC-S082-2-3	2/16/2023	Primary	2.0-3.0	500 J	1,300 J	47 J	230 J	920 J	710 J	840 J+	400 J	320 J	200 J+	1,000 J	62 J	3,000 J	330 J	350 J	2,200 J	250 J	1,700 J	4,600 J	6,300 J	12,000 J+	960 J+	18,000 J+					
	Infill	Intermediate	WC-S082-4-5	2/16/2023	Primary	4.0-5.0	1.6 U	2.1 U	1.3 U	0.81 J	2.7 U	2.6 J	3.2 J+	1.9 J	6.1	1.9 J+	2.9 J	5.5 J	3.5 J	1.6 U	6.0	4.0 J	8.2	2.6 J	5.5 J	11 J	39 J+	4.4 J+	49 J+					
WC-S082-5-6			2/16/2023	Primary	5.0-6.0	1.6 U	2.1 U	1.3 U	0.76 U	2.7 U	1.8 U	2.3 U	1.2 U	2.3 U	1.6 U	2.5 U	0.66 J	1.6 U	3.6 U	2.1 U	1.5 J	1.4 U	0.80 J	2.1 U	10 J	1.8 U	16 J							
WC-083	Infill Sampling	Intermediate	WC-S083-0-1	2/13/2023	Primary	0.0-1.0	1.9 J	2.0 UJ	1.3 UJ	1.7 J	7.1 J	11 J	12 J+	8.1 J	9.1 J	3.7 J+	9.2 J	2.4 UJ	12 J	1.6 UJ	9.2 J	5.5 J	9.6 J	6.8 J	20 J	18 J	95 J+	14 J+	110 J+					
			WC-S083-1-2	2/13/2023	Primary	1.0-2.0	2.6 J	2.3 UJ	1.4 UJ	2.0 J	7.4 J	13 J	13 J+	9.0 J	10 J	4.3 J+	9.6 J	2.7 UJ	12 J	1.7 UJ	9.8 J	7.4 J	12 J	7.4 J	21 J	22 J	100 J+	17 J+	120 J+					
			WC-S083-2-3	2/13/2023	Primary	2.0-3.0	1.6 UJ	2.1 UJ	1.4 UJ	1.0 J	3.7 J	5.5 J	6.3 J+	4.2 J	4.9 J	2.1 J+	4.4 J	2.6 UJ	5.9 J	1.7 UJ	4.9 J	3.2 J	5.1 J	3.9 J	10 J	12 J	49 J+	7.4 J+	61 J+					
			WC-S084-0-1	2/16/2023	RD Decision	0.0-1.0	2,150 J	4,300 J	78 J	635 J	760 J	525 J	635 J+	410 J	280 J	155 J+	925 J	64 J	4,550 J	1,700 J	260 J	8,450 J	155 J	6,100 J	3,750 J	23,000 J	12,000 J+	720 J+	35,000 J+					
WC-084	Infill Sampling	Shallow	WC-S084-1-2	2/16/2023	Primary	1.0-2.0	140 J	190 J	35 J	120 J	480 J	510 J	550 J+	370 J	200 J	170 J+	610 J	78 J	1,300 J	120 J	200 J	310 J	150 J	840 J	1,600 J	1,800 J	5,700 J+	660 J+	7,500 J+					
			WC-S084-2-3	2/16/2023	Primary	2.0-3.0	170 J	25 J	30 J	47 J	190 J	240 J	220 J+	190 J	130 J	62 J+	260 J	43 J	240 J	35 J	110 J	270 J	110 J	230 J	400 J	810 J	1,900 J+	310 J+	2,700 J+					
			WC-S085-0-1	2/14/2023	Primary	0.0-1.0	1.8 UJ	2.5 UJ	1.6 UJ	0.90 UJ	3.2 UJ	2.1 UJ	2.7 UJ	1.4 UJ	2.7 UJ	1.9 UJ	1.5 UJ	2.9 UJ	0.78 UJ	1.9 UJ	4.3 UJ	2.5 UJ	1.6 UJ	1.7 UJ	0.92 UJ	2.5 UJ	4.3 UJ	2.1 UJ	4.3 UJ					
WC-085	Infill Sampling	Intermediate	WC-S085-1-3	2/14/2023	Primary	1.0-3.0	1.6 UJ	2.1 UJ	1.3 UJ	0.77 UJ	2.7 UJ	1.8 UJ	2.3 UJ	1.2 UJ	2.3 UJ	1.6 UJ	1.2 UJ	2.5 UJ	0.66 UJ	1.6 UJ	3.6 UJ	2.1 UJ	1.4 UJ	1.4 UJ	0.78 UJ	2.1 UJ	3.6 UJ	1.8 UJ	3.6 UJ					
			WC-S086-0-1	2/14/2023	Primary	0.0-1.0	1.8 UJ	2.5 UJ	1.6 UJ	0.90 UJ	3.2 UJ	2.1 UJ	2.7 UJ	1.4 UJ	2.7 UJ	1.9 UJ	2.2 J	2.9 UJ	2.2 J	1.9 UJ	4.3 UJ	2.5 UJ	2.2 J	1.7 J	3.2 J	7.3 J	18 J	1.8 J	25 J					
WC-086	Infill Sampling	Intermediate	WC-S086-1-3	2/14/2023	Primary	1.0-3.0	1.6 UJ	2.1 UJ	1.4 UJ	0.78 UJ	2.8 UJ	1.8 UJ	2.3 UJ	1.2 UJ	2.4 UJ	1.7 UJ	1.3 UJ	2.6 UJ	0.68 UJ	1.6 UJ	3.7 UJ	2.2 UJ	1.4 UJ	1.5 UJ	0.79 UJ	2.2 UJ	3.7 UJ	1.8 UJ	3.7 UJ					
			WC-S087-0-1	2/15/2023	Primary	0.0-1.0	2.2 J	2.4 UJ	1.5 UJ	1.3 J	3.8 J	5.2 J	4.8 J+	4.0 J	4.6 J	1.9 UJ	5.9 J	2.8 UJ	7.8 J	1.8 UJ	4.2 J	7.9 J	2.4 J	3.9 J	16 J	18 J	55 J+	6.8 J+	73 J+					
WC-087	Infill Sampling	Intermediate	WC-S087-1-3	2/15/2023	Primary	1.0-3.0	1.7 UJ	2.2 UJ	1.4 UJ	0.82 UJ	2.9 UJ	1.9 UJ	2.5 UJ	1.3 UJ	2.5 UJ	1.7 UJ	1.3 UJ	2.7 UJ	0.71 UJ	1.7 UJ	3.9 UJ	2.3 UJ	1.5 UJ	1.5 UJ	0.83 UJ	2.3 UJ	3.9 UJ	1.9 UJ	3.9 UJ					
			WC-S088-0-1	2/14/2023	Primary	0.0-1.0	1.9 UJ	2.6 UJ	1.6 UJ	0.94 UJ	3.3 UJ	2.2 UJ	2.8 UJ	1.5 UJ	2.8 UJ	2.0 UJ	1.5 UJ	3.1 UJ	0.81 UJ	2.0 UJ	4.4 UJ	3.8 J	1.7 UJ	1.7 UJ	0.95 UJ	9.2 J	4.4 UJ	2.2 UJ	21 J					
WC-088	Infill Sampling	Intermediate	WC-S088-1-3	2/14/2023	RD Decision	1.0-3.0	1.7 UJ	2.2 UJ	1.4 UJ	0.82 UJ	2.9 UJ	1.9 UJ	2.5 UJ	1.3 UJ	2.5 UJ	1.8 UJ	1.3 UJ	2.7 UJ	0.71 UJ	1.7 UJ	3.9 UJ	2.3 UJ	1.5 UJ	1.5 UJ	0.83 UJ	2.3 UJ	3.9 UJ	1.9 UJ	3.9 UJ					
			WC-S089-0-1	2/15/2023	Primary	0.0-1.0	770 J	9,500 J	90 J	1,800 J	650 J	210 J	3																					

Table 4-1c
Surface and Subsurface Sediment Results for PAHs

Method							Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)																	Polycyclic Aromatic Hydrocarbons by EPA 8270C SIM (µg/kg dry)						
Screening Criteria							2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene	Total LPAH	Total HPAH	cPAHs	Total PAHs	
Sediment Screening Levels																														
Table 17 ROD Cleanup Level							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	774	23,000	
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30,000	
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	—	—	—	—	—	140,000	—	—	—	—	—	—	774,000	—	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)																								
WC-DG005	Porewater Co-Located	Shallow	WC-DG005	8/28/2022	Primary	0.0-1.0	32	120	12	100	450	620	700 J+	410	650	250 J+	430	190	760	50	690	130	160	470	830	910	5,600 J+	850 J+	6,500 J+	
WC-DG006	Porewater Co-Located	Shallow	WC-DG006	8/26/2022	Primary	0.0-1.0	6.8 U	6.8 U	10	17	72	90	93 J+	63	100	38 J+	69	38	92	6.8 U	120	15	22	56	100	110	810 J+	130 J+	920 J+	
WC-DG007	Porewater Co-Located	Intermediate	WC-DG007	8/29/2022	Primary	0.0-1.0	12 J-	8.3 J-	3.4 J-	5.8 J-	15 J-	18 J-	21 J+	15 J-	27 J-	7.4 J+	16 J-	9.4 J-	31 J-	4.9 J-	30 J-	57 J-	8.2 J-	15 J-	39 J-	110 J-	210 J	26 J	320 J	
WC-DG008	Porewater Co-Located	Intermediate	WC-DG008	8/29/2022	Primary	0.0-1.0	68 J-	43 J-	9.2 J-	29 J-	81 J-	80 J-	91 J+	55 J-	88 J-	35 J+	110 J-	30 J-	200 J-	40 J-	100 J-	220 J-	21 J-	67 J-	250 J-	480 J-	1,100 J	120 J	1,500 J	
WC-DG009	Porewater Co-Located	Intermediate	WC-DG009	8/25/2022	Primary	0.0-1.0	2.1 J-	4.8 J-	1.7 UJ-	1.2 J-	3.4 UJ-	5.5 J-	4.8 J+	4.6 J-	6.8 J-	2.1 J+	3.9 J-	3.1 UJ-	2.9 J-	2.0 UJ-	7.3 J-	4.1 J-	1.8 J-	2.6 J-	5.6 J-	17 J-	42 J	7.3 J	59 J	
WC-DG010	Porewater Co-Located	Intermediate	WC-DG010	8/25/2022	Primary	0.0-1.0	51	17	25	19	75	150	140 J+	100	240	51 J+	72	63	53	17	260	200	36	34	96	360	1,200 J+	210 J+	1,600 J+	
WC-DG011	Porewater Co-Located	Intermediate	WC-DG011	8/26/2022	Primary	0.0-1.0	3.3 J	2.5 U	3.6 J	2.6 J	7.2	11	11 J+	8.8	16	3.8 J+	8.7	4.8 J	5.4 J	1.9 U	17	5.8 J	3.2 J	3.6 J	11	21 J	96 J+	15 J+	120 J+	
WC-DG012	Porewater Co-Located	Intermediate	WC-DG012	8/26/2022	Primary	0.0-1.0	1.9 U	2.6 U	1.6 U	0.95 U	3.4 U	2.2 U	2.8 U	1.5 U	2.9 U	2.0 U	1.5 U	3.1 U	1.9 J	2.0 U	4.5 U	2.6 U	1.7 U	1.8 U	2.5 J	2.6 U	16 J	2.2 U	22 J	

Table 4-1c
Surface and Subsurface Sediment Results for PAHs

Notes

Yellow highlight = Result exceeds the referenced ROD Cleanup Level
Orange highlight = Result exceeds the referenced Site-Wide RAL

- BOLD** = Detection
- = Not analyzed or not applicable
- EPA = U.S. Environmental Protection Agency
- ft = foot or feet
- J- = The result is an estimated quantity, but the result may be biased low.
- J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ = The result is an estimated quantity, but the result may be biased high.
- PAHs = polycyclic aromatic hydrocarbons
- PTW = Principal Threat Waste
- RAL = Remedial Action Level
- RD = remedial design
- ROD = Record of Decision
- SIM = single ion monitoring
- U = Result not detected above the referenced laboratory detection limit
- µg/kg = micrograms per kilogram
- UJ- = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and biased low.
- UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate.

Table 4-1d
Surface and Subsurface Sediment Results for DDx

Method							Organochlorine Pesticides by EPA 8081A (µg/kg dry)										
Screening Criteria							4,4'-DDD	4,4'-DDE	4,4'-DDT	2,4-DDD	2,4-DDE	2,4-DDT	Total DDD	Total DDE	Total DDT	Total DDx	
Sediment Screening Levels																	
Table 17 ROD Cleanup Level							—	—	—	—	—	—	114	50	246	6.1	
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	160	
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	7,050	
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)											
WC-001	Primary	Shallow	WC-S001-0-1	6/29/2022	Primary	0.0-1.0	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	
			WC-S001-1-2	6/29/2022	RD Decision	1.0-2.0	0.74 U	0.80 U	0.78 U	0.65 U	0.60 U	0.75 U	0.74 U	0.80 U	0.78 U	0.80 U	
WC-002	Primary	Shallow	WC-S001-2-3	6/29/2022	RD Decision	2.0-3.0	0.74 U	0.80 U	0.79 U	0.66 U	0.60 U	0.76 U	0.74 U	0.80 U	0.79 U	0.80 U	
			WC-S002-1-2	2/16/2023	Primary	1.0-2.0	53 U	57 U	56 U	47 U	43 U	54 U	53 U	57 U	56 U	57 U	
			WC-S002-2-3	2/16/2023	RD Decision	2.0-3.0	48 U	52 U	51 U	42 U	39 U	49 U	48 U	52 U	51 U	52 U	
			WC-S002-3-4	2/16/2023	Primary	3.0-4.0	19 U	20 U	20 U	16 U	15 U	19 U	19 U	20 U	20 U	20 U	
			WC-S002-4-4.5	6/29/2022	Primary	4.0-4.5	16 U	17 U	17 U	14 U	13 U	16 U	16 U	17 U	17 U	17 U	
			WC-S002-4.5-5.5	6/29/2022	RD Decision	4.5-5.5	5.5	3.6 U	6.0	3.6 U	3.6 U	3.6 U	7.3	3.6 U	7.8	19	
WC-003	Primary	Shallow	WC-S002-5.5-7	6/29/2022	Primary	5.5-7.0	3.6 J	0.90 U	0.89 U	1.2 J	0.68 U	0.85 U	4.8 J	0.90 U	0.89 U	6.5 J	
			WC-S003-1-2	2/16/2023	Primary	1.0-2.0	140 U	160 U	150 U	130 U	120 U	150 U	140 U	160 U	150 U	160 U	
			WC-S003-2-3	2/16/2023	Primary	2.0-3.0	82 U	89 U	87 U	73 U	66 U	84 U	82 U	89 U	87 U	89 U	
			WC-S003-3-4	2/16/2023	Primary	3.0-4.0	15 U	16 U	16 U	13 U	12 U	15 U	15 U	16 U	16 U	16 U	
			WC-S003-4-5	2/16/2023	Primary	4.0-5.0	16 U	17 U	16 U	14 U	13 U	16 U	16 U	17 U	16 U	17 U	
WC-003-A	Porewater Co-Located	Shallow	WC-S003-5-6	6/22/2022	Primary	5.0-6.0	0.69 U	0.74 U	0.73 U	0.61 U	0.55 U	0.70 U	0.69 U	0.74 U	0.73 U	0.74 U	
			WC-S003-6-7	6/22/2022	Primary	6.0-7.0	0.68 U	0.73 U	0.72 U	0.60 U	0.55 U	0.69 U	0.68 U	0.73 U	0.72 U	0.73 U	
WC-004	Primary	Shallow	WC-G003-A	8/29/2022	Primary	0.0-1.0	0.82 UJ-	0.88 UJ-	0.86 UJ-	0.72 UJ-	0.66 UJ-	0.83 UJ-	0.82 UJ-	0.88 UJ-	0.86 UJ-	0.88 UJ-	
			WC-S004-1-2	2/16/2023	Primary	1.0-2.0	55 U	60 U	58 U	49 U	45 U	56 U	55 U	60 U	58 U	60 U	
			WC-S004-2-3	2/16/2023	RD Decision	2.0-3.0	39 U	42 U	42 U	35 U	32 U	40 U	39 U	42 U	42 U	42 U	
			WC-S004-3-4	2/16/2023	Primary	3.0-4.0	16 U	17 U	17 U	14 U	13 U	17 U	16 U	17 U	17 U	17 U	
			WC-S004-4-5	2/16/2023	Primary	4.0-5.0	19 U	20 U	20 U	17 U	15 U	19 U	19 U	20 U	20 U	20 U	
			WC-S004-5-6	6/22/2022	Primary	5.0-6.0	14 U	15 U	14 U	12 U	11 U	14 U	14 U	15 U	14 U	15 U	
WC-005	Primary	Shallow	WC-S004-6-7	6/22/2022	RD Decision	6.0-7.0	0.79 U	0.85 U	0.83 U	0.70 U	0.64 U	0.80 U	0.79 U	0.85 U	0.83 U	0.85 U	
			WC-S004-7-8	6/22/2022	Primary	7.0-8.0	0.73 U	0.78 U	0.77 U	0.64 U	0.59 U	0.74 U	0.73 U	0.78 U	0.77 U	0.78 U	
WC-007	Primary	Shallow	WC-S005-0-1	6/21/2022	Primary	0.0-1.0	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	
			WC-S005-1-2	6/21/2022	Primary	1.0-2.0	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	
			WC-S005-2-3	6/21/2022	Primary	2.0-3.0	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	
WC-008	Primary	Shallow	WC-S007-2-3	6/23/2022	Primary	2.0-3.0	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	
			WC-S008-1-2	2/15/2023	Primary	1.0-2.0	3.7 U	4.0 U	3.9 U	3.2 U	3.0 U	3.7 U	3.7 U	4.0 U	3.9 U	4.0 U	
			WC-S008-2-3	2/15/2023	Primary	2.0-3.0	3.4 U	3.7 U	3.6 U	3.0 U	2.7 U	3.5 U	3.4 U	3.7 U	3.6 U	3.7 U	
			WC-S008-3-4	2/15/2023	Primary	3.0-4.0	13 U	14 U	14 U	12 U	11 U	14 U	13 U	14 U	14 U	14 U	
			WC-S008-4-5	6/23/2022	Primary	4.0-5.0	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U
WC-010	Primary	Shallow	WC-S008-5-6	6/23/2022	Primary	5.0-6.0	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	
			WC-S010-1-2	2/15/2023	RD Decision	1.0-2.0	0.71 U	0.76 U	0.75 U	0.63 U	0.57 U	0.72 U	0.71 U	0.76 U	0.75 U	0.76 U	
			WC-S010-2-3	2/15/2023	Primary	2.0-3.0	3.5 U	3.8 U	3.7 U	3.1 U	2.8 U	3.6 U	3.5 U	3.8 U	3.7 U	3.8 U	
			WC-S010-3-4	6/23/2022	RD Decision	3.0-4.0	2.7 UJ	2.7 UJ	7.8 J	2.7 UJ	2.7 UJ	2.7 UJ	2.7 UJ	2.7 UJ	9.2 J	15 J	
WC-012	Primary	Shallow	WC-S010-4-5	6/23/2022	Primary	4.0-5.0	2.6 U	2.6 U	11	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	12	17	
			WC-S012-0-1	6/24/2022	Primary	0.0-1.0	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
			WC-S012-1-2	6/24/2022	Primary	1.0-2.0	4.8	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	6.6	3.5 U	3.5 U	14	
WC-013	Porewater Co-Located	Shallow	WC-S012-2-3	6/24/2022	Primary	2.0-3.0	7.7	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	9.6	3.8 U	3.8 U	17	
			WC-S013-0-1	6/25/2022	Primary	0.0-1.0	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U
			WC-S013-1-2	6/25/2022	Primary	1.0-2.0	3.5 UJ-	3.5 UJ	3.5 UJ-	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ	3.5 UJ-	3.5 UJ	3.5 UJ
WC-013	Primary	Shallow	WC-S013-2-3	6/25/2022	Primary	2.0-3.0	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ	3.9 UJ

Table 4-1d
Surface and Subsurface Sediment Results for DDx

Method							Organochlorine Pesticides by EPA 8081A (µg/kg dry)									
Screening Criteria							4,4'-DDD	4,4'-DDE	4,4'-DDT	2,4-DDD	2,4-DDE	2,4-DDT	Total DDD	Total DDE	Total DDT	Total Ddx
Sediment Screening Levels																
Table 17 ROD Cleanup Level							—	—	—	—	—	—	114	50	246	6.1
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	160
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	7,050
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)										
WC-014	Primary	Shallow	WC-S014-1-2	6/25/2022	Primary	1.0-2.0	0.76 U	0.82 U	0.81 U	0.68 U	0.62 U	0.78 U	0.76 U	0.82 U	0.81 U	0.82 U
			WC-S014-2-3	6/25/2022	RD Decision	2.0-3.0	2.9 J	2.3 J	0.80 U	2.2 J	0.61 U	0.77 U	5.1 J	2.6 J	0.80 U	8.5 J
WC-015	Primary	Shallow	WC-S015-1-2	6/25/2022	Primary	1.0-2.0	0.74 U	0.80 U	0.79 U	0.66 U	0.60 U	0.76 U	0.74 U	0.80 U	0.79 U	0.80 U
			WC-S015-2-3	6/25/2022	Primary	2.0-3.0	3.6 J	0.81 U	0.79 U	0.66 U	0.60 U	0.76 U	3.9 J	0.81 U	0.79 U	5.4 J
WC-016	Primary	Shallow	WC-S016-1-2	6/30/2022	Primary	1.0-2.0	0.69 U	0.75 U	0.73 U	0.61 U	0.56 U	0.71 U	0.69 U	0.75 U	0.73 U	0.75 U
			WC-S016-2-3	6/30/2022	RD Decision	2.0-3.0	24 J	7.6	29 J	1.3 J	0.58 U	1.0 J	25 J	7.9	30 J	63 J
WC-017	Primary	Shallow	WC-S017-1-2	6/27/2022	RD Decision	1.0-2.0	0.75 U	0.81 U	0.80 U	0.67 U	0.61 U	0.77 U	0.75 U	0.81 U	0.80 U	0.81 U
			WC-S017-2-3	6/27/2022	Primary	2.0-3.0	0.72 U	0.78 U	0.76 U	0.64 U	0.58 U	0.74 U	0.72 U	0.78 U	0.76 U	0.78 U
WC-018	Porewater Co-Located	Shallow	WC-S018-0-1	6/27/2022	Primary	0.0-1.0	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
			WC-S018-1-2	6/27/2022	Primary	1.0-2.0	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
WC-019	Primary	Shallow	WC-S018-2-3	6/27/2022	RD Decision	2.0-3.0	0.71 U	0.77 U	0.75 U	0.63 U	0.58 U	0.73 U	0.71 U	0.77 U	0.75 U	0.77 U
			WC-S019-1-2	6/28/2022	Primary	1.0-2.0	0.74 U	0.79 U	0.78 U	0.65 U	0.60 U	0.75 U	0.74 U	0.79 U	0.78 U	0.79 U
WC-019	Primary	Shallow	WC-S019-2-3	6/28/2022	RD Decision	2.0-3.0	0.90 U	0.97 U	0.95 U	0.80 U	0.73 U	0.92 U	0.90 U	0.97 U	0.95 U	0.97 U
			WC-G019-A	6/13/2022	Primary	0.0-1.0	4.8 U	4.8 U	9.6 UJ	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	9.6 UJ	9.6 UJ
WC-023	Primary	Intermediate	WC-S023-0-1	2/16/2023	Primary	0.0-1.0	56 U	60 U	59 U	49 U	45 U	57 U	56 U	60 U	59 U	60 U
WC-025	Primary	Intermediate	WC-S025-3-5	6/30/2022	Primary	3.0-5.0	0.57 U	0.62 U	0.61 U	0.51 U	0.46 U	0.58 U	0.57 U	0.62 U	0.61 U	0.62 U
WC-025-A	Porewater Co-Located	Intermediate	WC-G025-A	6/14/2022	Primary	0.0-1.0	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
WC-030-A	Porewater Co-Located	Intermediate	WC-G030-A	6/13/2022	Primary	0.0-1.0	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
WC-032-A	Porewater Co-Located	Intermediate	WC-G032-A	6/13/2022	Primary	0.0-1.0	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U
WC-033-A	Porewater Co-Located	Intermediate	WC-G033-A	8/28/2022	Primary	0.0-1.0	1.1 UJ-	1.2 UJ-	1.1 UJ-	0.96 UJ-	0.88 UJ-	1.1 UJ-	1.1 UJ-	1.2 UJ-	1.1 UJ-	1.2 UJ-
WC-037-A	Primary	Intermediate	WC-G037-A	6/13/2022	Primary	0.0-1.0	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U
WC-041-A	Porewater Co-Located	Intermediate	WC-G041-A	8/28/2022	Primary	0.0-1.0	1.3 UJ-	1.4 UJ-	1.4 UJ-	1.1 UJ-	1.0 UJ-	1.3 UJ-	1.3 UJ-	1.4 UJ-	1.4 UJ-	1.4 UJ-
WC-047-A	Primary	Intermediate	WC-C047-A-0-1	3/21/2023	Primary	0.0-1.0	50 U	54 U	53 U	44 U	40 U	51 U	50 U	54 U	53 U	54 U
WC-048-A-1	Primary	Intermediate	WC-G048-A-1	6/15/2022	Primary	0.0-1.0	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
WC-048-A-2	Primary	Intermediate	WC-G048-A-2	6/15/2022	Primary	0.0-1.0	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
WC-049-A	Primary	Intermediate	WC-G049-A	6/15/2022	Primary	0.0-1.0	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U
WC-053	Step Out	Shallow	WC-G053	6/16/2022	Primary	0.0-1.0	4.0	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	6.0	3.9 U	3.9 U	14
WC-054	Primary	Intermediate	WC-S054-0-1	2/16/2023	Primary	0.0-1.0	120 U	130 U	120 U	100 U	95 U	120 U	120 U	130 U	120 U	130 U
WC-056	Primary	Intermediate	WC-S056-0-1	6/30/2022	RD Decision	0.0-1.0	0.74 U	0.80 U	0.86 J	0.65 U	0.60 U	0.75 U	0.74 U	0.80 U	1.2 J	2.6 J
WC-057	Primary	Intermediate	WC-S057-0-1	2/13/2023	Primary	0.0-1.0	0.75 U	0.81 U	0.79 U	0.66 U	0.60 U	0.76 U	0.75 U	0.81 U	0.79 U	0.81 U
WC-059	Primary	Intermediate	WC-G059	6/14/2022	RD Decision	0.0-1.0	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
			WC-S059-1-3	6/29/2022	RD Decision	1.0-3.0	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
WC-060	Primary	Intermediate	WC-S060-0-1	6/29/2022	Primary	0.0-1.0	0.61 U	0.66 U	0.65 U	0.54 U	0.49 U	0.62 U	0.61 U	0.66 U	0.65 U	0.66 U
			WC-S060-1-3	6/29/2022	RD Decision	1.0-3.0	0.58 U	0.62 U	0.61 U	0.51 U	0.47 U	0.59 U	0.58 U	0.62 U	0.61 U	0.62 U
WC-060-A	Primary	Intermediate	WC-S060-A-0-1	6/30/2022	RD Decision	0.0-1.0	0.74 U	0.80 U	0.78 U	0.65 U	0.60 U	0.75 U	0.74 U	0.80 U	0.78 U	0.80 U
WC-061	Primary	Intermediate	WC-S061-0-1	6/28/2022	Primary	0.0-1.0	0.69 U	0.74 U	1.6 J	0.61 U	0.55 U	0.70 U	0.69 U	0.74 U	2.0 J	3.2 J
			WC-S061-1-3	6/28/2022	RD Decision	1.0-3.0	1.8 J	0.75 J	3.0 J	0.58 U	0.53 U	0.67 U	2.1 J	1.0 J	3.3 J	6.4 J
WC-063	Primary	Intermediate	WC-S063-1-3	6/28/2022	Primary	1.0-3.0	1.4 U	1.5 U	1.5 U	1.2 U	1.1 U	1.4 U	1.4 U	1.5 U	1.5 U	1.5 U
WC-064	Step Out	Intermediate	WC-G064	6/13/2022	Primary	0.0-1.0	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
WC-065	Step Out	Intermediate	WC-S065-0-1	6/29/2022	Primary	0.0-1.0	10	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	12	3.0 U	3.0 U	18
			WC-S065-1-3	6/29/2022	Primary	1.0-3.0	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
WC-069	Primary	Intermediate	WC-S069-1-3	2/15/2023	RD Decision	1.0-3.0	5.0 U	5.4 U	5.3 U	4.4 U	4.0 U	5.1 U	5.0 U	5.4 U	5.3 U	5.4 U
WC-069-A	Primarv	Intermediate	WC-G069-A	6/15/2022	RD Decision	0.0-1.0	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U

Table 4-1d
Surface and Subsurface Sediment Results for DDx

Method							Organochlorine Pesticides by EPA 8081A (µg/kg dry)									
Screening Criteria							4,4'-DDD	4,4'-DDE	4,4'-DDT	2,4-DDD	2,4-DDE	2,4-DDT	Total DDD	Total DDE	Total DDT	Total DDx
Sediment Screening Levels																
Table 17 ROD Cleanup Level							—	—	—	—	—	—	114	50	246	6.1
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	160
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	7,050
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)										
WC-072	Primary	Intermediate	WC-G072	6/15/2022	Primary	0.0-1.0	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
WC-079	Primary	Intermediate	WC-G079	6/15/2022	Primary	0.0-1.0	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
			WC-S079-1-3	2/15/2023	Primary	1.0-3.0	0.64 U	0.69 U	0.68 U	0.57 U	0.52 U	0.66 U	0.64 U	0.69 U	0.68 U	0.69 U
WC-080	Infill Sampling	Intermediate	WC-S080-0-1	2/13/2023	Primary	0.0-1.0	3.8 U	4.0 U	4.0 U	3.3 U	3.0 U	3.8 U	3.8 U	4.0 U	4.0 U	4.0 U
			WC-S080-1-3	2/13/2023	Primary	1.0-3.0	0.68 U	0.73 U	0.71 U	0.60 U	0.55 U	0.69 U	0.68 U	0.73 U	0.71 U	0.73 U
WC-081	Infill Sampling	Intermediate	WC-S081-0-1	2/16/2023	Primary	0.0-1.0	68 U	73 U	72 U	60 U	55 U	69 U	68 U	73 U	72 U	73 U
			WC-S081-1-3	2/16/2023	RD Decision	1.0-3.0	67 U	73 U	71 U	60 U	54 U	69 U	67 U	73 U	71 U	73 U
WC-082	Infill Sampling	Intermediate	WC-S082-0-1	2/16/2023	Primary	0.0-1.0	850 J	250 U	2,800 J	220 J	190 U	260 J	1,100 J	250 U	3,100 J	4,400 J
			WC-S082-1-2	2/16/2023	Primary	1.0-2.0	80 U	86 U	84 U	71 U	64 U	81 U	80 U	86 U	84 U	86 U
			WC-S082-2-3	2/16/2023	Primary	2.0-3.0	740 J	300 U	2,600 J	240 U	220 U	310 J	860 J	300 U	2,900 J	4,000 J
			WC-S082-3-4	2/16/2023	Primary	3.0-4.0	98	16 U	220	44 J	12 U	32 J	140 J	16 U	250 J	410 J
			WC-S082-4-5	2/16/2023	Primary	4.0-5.0	2.6 U	2.8 U	2.8 U	2.3 U	2.1 U	2.7 U	2.6 U	2.8 U	2.8 U	2.8 U
	Infill	Intermediate	WC-S082-5-6	2/16/2023	Primary	5.0-6.0	0.58 U	0.63 U	0.62 U	0.52 U	0.47 U	0.60 U	0.58 U	0.63 U	0.62 U	0.63 U
WC-083	Infill Sampling	Intermediate	WC-S083-0-1	2/13/2023	Primary	0.0-1.0	3.2 U	3.4 U	3.4 U	2.8 U	2.6 U	3.2 U	3.2 U	3.4 U	3.4 U	3.4 U
			WC-S083-1-2	2/13/2023	Primary	1.0-2.0	3.2 U	3.4 U	3.4 U	2.8 U	2.6 U	3.2 U	3.2 U	3.4 U	3.4 U	3.4 U
			WC-S083-2-3	2/13/2023	Primary	2.0-3.0	0.53 U	0.57 U	0.56 U	0.47 U	0.42 U	0.54 U	0.53 U	0.57 U	0.56 U	0.57 U
WC-084	Infill Sampling	Shallow	WC-S084-0-1	2/16/2023	RD Decision	0.0-1.0	525 J	150 U	665 J	210 J	110 U	140 U	740 J	150 U	740 J	1,600 J
			WC-S084-1-2	2/16/2023	Primary	1.0-2.0	37 U	40 U	39 U	33 U	30 U	38 U	37 U	40 U	39 U	40 U
			WC-S084-2-3	2/16/2023	Primary	2.0-3.0	38 U	41 U	40 U	34 U	31 U	39 U	38 U	41 U	40 U	41 U
WC-085	Infill Sampling	Intermediate	WC-S085-0-1	2/14/2023	Primary	0.0-1.0	0.69 U	0.74 U	0.73 U	0.61 U	0.56 U	0.70 U	0.69 U	0.74 U	0.73 U	0.74 U
			WC-S085-1-3	2/14/2023	Primary	1.0-3.0	1.3 J	0.96 J	1.0 J	0.52 U	0.47 U	0.60 U	1.6 J	1.2 J	1.3 J	4.1 J
WC-086	Infill Sampling	Intermediate	WC-S086-0-1	2/14/2023	Primary	0.0-1.0	0.69 U	0.74 U	0.72 U	0.61 U	0.55 U	0.70 U	0.69 U	0.74 U	0.72 U	0.74 U
			WC-S086-1-3	2/14/2023	Primary	1.0-3.0	0.60 U	0.64 U	0.63 U	0.53 U	0.48 U	0.61 U	0.60 U	0.64 U	0.63 U	0.64 U
WC-087	Infill Sampling	Intermediate	WC-S087-0-1	2/15/2023	Primary	0.0-1.0	2.3 J	0.73 J	43	0.82 J	0.54 U	0.68 U	3.1 J	1.0 J	43	47 J
			WC-S087-1-3	2/15/2023	Primary	1.0-3.0	0.56 U	0.61 U	2.8	0.50 U	0.46 U	0.57 U	0.56 U	0.61 U	3.1	4.1
WC-088	Infill Sampling	Intermediate	WC-S088-0-1	2/14/2023	Primary	0.0-1.0	0.62 U	0.66 U	0.65 U	0.54 U	0.50 U	0.63 U	0.62 U	0.66 U	0.65 U	0.66 U
			WC-S088-1-3	2/14/2023	RD Decision	1.0-3.0	0.63 U	0.68 U	0.66 U	0.56 U	0.51 U	0.64 U	0.63 U	0.68 U	0.66 U	0.68 U
WC-089	Infill Sampling	Shallow	WC-S089-0-1	2/15/2023	Primary	0.0-1.0	5.5 U	6.0 U	5.8 U	4.9 U	4.5 U	5.6 U	5.5 U	6.0 U	5.8 U	6.0 U
			WC-S089-1-2	2/15/2023	Primary	1.0-2.0	33	12 J	11 J	12 J	3.7 U	4.7 U	45 J	14 J	13 J	72 J
			WC-S089-2-3	2/15/2023	Primary	2.0-3.0	29	3.9 U	7.8 J	18	3.0 U	3.7 U	47	3.9 U	9.7 J	60 J
WC-090	Infill Sampling	Intermediate	WC-C090-0-1	3/21/2023	Primary	0.0-1.0	51 U	55 U	54 U	45 U	41 U	52 U	51 U	55 U	54 U	55 U
			WC-C090-1-3	3/21/2023	RD Decision	1.0-3.0	54 U	58 U	57 U	48 U	44 U	55 U	54 U	58 U	57 U	58 U
WC-091	Infill Sampling	Shallow	WC-S091-0-1	2/15/2023	Primary	0.0-1.0	4.8 U	5.2 U	5.1 U	4.3 U	3.9 U	4.9 U	4.8 U	5.2 U	5.1 U	5.2 U
			WC-S091-1-2	2/15/2023	RD Decision	1.0-2.0	4.7 U	5.1 U	5.0 U	4.2 U	3.8 U	4.8 U	4.7 U	5.1 U	5.0 U	5.1 U
			WC-S091-2-3	2/15/2023	Primary	2.0-3.0	5.4 U	5.9 U	5.7 U	4.8 U	4.4 U	5.5 U	5.4 U	5.9 U	5.7 U	5.9 U
WC-092	Infill Sampling	Intermediate	WC-S092-0-1	2/14/2023	Primary	0.0-1.0	0.70 U	0.76 U	0.75 U	0.62 U	0.57 U	0.72 U	0.70 U	0.76 U	0.75 U	0.76 U
			WC-S092-1-3	2/14/2023	Primary	1.0-3.0	0.64 U	0.69 U	0.68 U	0.57 U	0.52 U	0.65 U	0.64 U	0.69 U	0.68 U	0.69 U
WC-094	Infill Sampling	Intermediate	WC-S094-0-1	2/14/2023	Primary	0.0-1.0	0.62 U	0.66 U	0.65 U	0.54 U	0.50 U	0.63 U	0.62 U	0.66 U	0.65 U	0.66 U
			WC-S094-1-3	2/14/2023	Primary	1.0-3.0	0.61 U	0.65 U	0.64 U	0.54 U	0.49 U	0.62 U	0.61 U	0.65 U	0.64 U	0.65 U
WC-095	Infill Sampling	Intermediate	WC-S095-0-1	2/16/2023	Primary	0.0-1.0	1.2 U	1.3 U	1.3 U	1.1 U	0.98 U	1.2 U	1.2 U	1.3 U	1.3 U	1.3 U
			WC-S095-1-3	2/16/2023	Primary	1.0-3.0	1.2 U	1.3 U	1.2 U	1.0 U	0.95 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U
WC-DG001	Porewater Co-Located	Shallow	WC-DG001	8/25/2022	Primary	0.0-1.0	0.93 U	1.0 U	0.98 U	0.82 U	0.75 U	0.94 U	0.93 U	1.0 U	0.98 U	1.0 U
WC-DG002	Porewater Co-Located	Intermediate	WC-DG002	8/25/2022	Primary	0.0-1.0	2.0 J-	1.3 U-	1.3 U-	1.1 J-	1.0 U-	1.3 U-	3.1 J-	1.3 U-	1.3 U-	5.5 J-

Table 4-1d
Surface and Subsurface Sediment Results for DDx

Method							Organochlorine Pesticides by EPA 8081A (µg/kg dry)									
Screening Criteria							4,4'-DDD	4,4'-DDE	4,4'-DDT	2,4-DDD	2,4-DDE	2,4-DDT	Total DDD	Total DDE	Total DDT	Total DDx
Sediment Screening Levels																
Table 17 ROD Cleanup Level							—	—	—	—	—	—	114	50	246	6.1
Table 21 Site-Wide RAL							—	—	—	—	—	—	—	—	—	160
Table 21 PTW Threshold							—	—	—	—	—	—	—	—	—	7,050
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)										
WC-DG003	Porewater Co-Located	Intermediate	WC-DG003	8/28/2022	RD Decision	0.0-1.0	1.1 U	1.2 U	1.1 U	0.94 U	0.86 U	1.1 U	1.1 U	1.2 U	1.1 U	1.2 U
WC-DG004	Porewater Co-Located	Shallow	WC-DG004	8/28/2022	Primary	0.0-1.0	1.1 UJ-	1.2 UJ-	1.1 UJ-	0.95 UJ-	0.87 UJ-	1.1 UJ-	1.1 UJ-	1.2 UJ-	1.1 UJ-	1.2 UJ-
WC-DG005	Porewater Co-Located	Shallow	WC-DG005	8/28/2022	Primary	0.0-1.0	0.76 UJ-	0.82 UJ-	0.80 UJ-	0.67 UJ-	0.61 UJ-	0.77 UJ-	0.76 UJ-	0.82 UJ-	0.80 UJ-	0.82 UJ-
WC-DG006	Porewater Co-Located	Shallow	WC-DG006	8/26/2022	Primary	0.0-1.0	0.71 U	0.77 U	0.75 U	0.63 U	0.57 U	0.72 U	0.71 U	0.77 U	0.75 U	0.77 U
WC-DG007	Porewater Co-Located	Intermediate	WC-DG007	8/29/2022	Primary	0.0-1.0	0.87 UJ-	0.94 UJ-	0.92 UJ-	0.77 UJ-	0.71 UJ-	0.89 UJ-	0.87 UJ-	0.94 UJ-	0.92 UJ-	0.94 UJ-
WC-DG008	Porewater Co-Located	Intermediate	WC-DG008	8/29/2022	Primary	0.0-1.0	10	1.1 U	140	1.6 J	0.82 U	1.0 U	12 J	1.1 U	140	150 J
WC-DG009	Porewater Co-Located	Intermediate	WC-DG009	8/25/2022	Primary	0.0-1.0	0.73 U	0.78 U	0.77 U	0.64 U	0.59 U	0.74 U	0.73 U	0.78 U	0.77 U	0.78 U
WC-DG010	Porewater Co-Located	Intermediate	WC-DG010	8/25/2022	Primary	0.0-1.0	1.1 UJ-	1.1 UJ-	1.1 UJ-	0.93 UJ-	0.85 UJ-	1.1 UJ-	1.1 UJ-	1.1 UJ-	1.1 UJ-	1.1 UJ-
WC-DG011	Porewater Co-Located	Intermediate	WC-DG011	8/26/2022	Primary	0.0-1.0	0.71 U	0.76 U	0.75 U	0.63 U	0.57 U	0.72 U	0.71 U	0.76 U	0.75 U	0.76 U
WC-DG012	Porewater Co-Located	Intermediate	WC-DG012	8/26/2022	Primary	0.0-1.0	0.72 U	0.78 U	0.77 U	0.64 U	0.58 U	0.74 U	0.72 U	0.78 U	0.77 U	0.78 U

Table 4-1d
Surface and Subsurface Sediment Results for DDx

Notes

Yellow highlight = Result exceeds the referenced ROD Cleanup Level
Orange highlight = Result exceeds the referenced Site-Wide RAL
Red highlight = Result exceeds the referenced PTW Threshold

- BOLD** = Detection
- = not analyzed or not applicable
- µg/kg = micrograms per kilogram
- DDx = the sum of dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyltrichloroethane (DDT)
- EPA = U.S. Environmental Protection Agency
- ft = foot or feet
- J- = The result is an estimated quantity, but the result may be biased low.
- J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- PTW = Principal Threat Waste
- RAL = Remedial Action Level
- RD = remedial design
- U = Result not detected above the referenced laboratory detection limit
- UJ- = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be biased low.
- UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate.

Table 4-1e
Surface and Subsurface Sediment Results for Metals

Method							Metals by EPA 6020 (mg/kg dry)
Screening Criteria							Arsenic
Sediment Screening Levels							
Table 17 ROD Cleanup Level							3
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)	
WC-001	Primary	Shallow	WC-S001-0-1	6/29/2022	Primary	0.0-1.0	5.4
WC-003-A	Porewater Co-located	Shallow	WC-G003-A	8/29/2022	Primary	0.0-1.0	6.4
WC-005	Primary	Shallow	WC-S005-0-1	6/21/2022	Primary	0.0-1.0	6.8
WC-012	Primary	Shallow	WC-S012-0-1	6/24/2022	Primary	0.0-1.0	3.9
WC-013	Porewater Co-located	Shallow	WC-S013-0-1	6/25/2022	Primary	0.0-1.0	5.6
WC-018	Porewater Co-located	Shallow	WC-S018-0-1	6/27/2022	Primary	0.0-1.0	5.1
WC-019-A	Primary	Shallow	WC-G019-A	6/13/2022	Primary	0.0-1.0	7.0
WC-023	Primary	Intermediate	WC-S023-0-1	2/16/2023	Primary	0.0-1.0	4.3
WC-025-A	Porewater Co-located	Intermediate	WC-G025-A	6/14/2022	Primary	0.0-1.0	4.7
WC-030-A	Porewater Co-located	Intermediate	WC-G030-A	6/13/2022	Primary	0.0-1.0	5.8
WC-032-A	Porewater Co-located	Intermediate	WC-G032-A	6/13/2022	Primary	0.0-1.0	9.2
WC-033-A	Porewater Co-located	Intermediate	WC-G033-A	8/28/2022	Primary	0.0-1.0	6.3
WC-037-A	Primary	Intermediate	WC-G037-A	6/13/2022	Primary	0.0-1.0	6.4
WC-041-A	Porewater Co-located	Intermediate	WC-G041-A	8/28/2022	Primary	0.0-1.0	6.1
WC-047-A	Primary	Intermediate	WC-C047-A-0-1	3/21/2023	Primary	0.0-1.0	4.5
WC-048-A-1	Primary	Intermediate	WC-G048-A-1	6/15/2022	Primary	0.0-1.0	12
WC-048-A-2	Primary	Intermediate	WC-G048-A-2	6/15/2022	Primary	0.0-1.0	5.5
WC-049-A	Primary	Intermediate	WC-G049-A	6/15/2022	Primary	0.0-1.0	7.5
WC-053	Step Out	Shallow	WC-G053	6/16/2022	Primary	0.0-1.0	6.2
WC-054	Primary	Intermediate	WC-S054-0-1	2/16/2023	Primary	0.0-1.0	7.4 J
WC-056	Primary	Intermediate	WC-S056-0-1	6/30/2022	RD Decision	0.0-1.0	5.9
WC-057	Primary	Intermediate	WC-S057-0-1	2/13/2023	Primary	0.0-1.0	6.8
WC-059	Primary	Intermediate	WC-G059	6/14/2022	RD Decision	0.0-1.0	5.3
WC-060	Primary	Intermediate	WC-S060-0-1	6/29/2022	Primary	0.0-1.0	2.5
WC-060-A	Primary	Intermediate	WC-S060-A-0-1	6/30/2022	RD Decision	0.0-1.0	4.8
WC-061	Primary	Intermediate	WC-S061-0-1	6/28/2022	Primary	0.0-1.0	11
WC-064	Step Out	Intermediate	WC-G064	6/13/2022	Primary	0.0-1.0	6.5
WC-065	Step Out	Intermediate	WC-S065-0-1	6/29/2022	Primary	0.0-1.0	9.6
WC-069-A	Primary	Intermediate	WC-G069-A	6/15/2022	RD Decision	0.0-1.0	3.6
WC-072	Primary	Intermediate	WC-G072	6/15/2022	Primary	0.0-1.0	4.3
WC-079	Primary	Intermediate	WC-G079	6/15/2022	Primary	0.0-1.0	4.8
WC-080	Infill Sampling	Intermediate	WC-S080-0-1	2/13/2023	Primary	0.0-1.0	4.7
WC-081	Infill Sampling	Intermediate	WC-S081-0-1	2/16/2023	Primary	0.0-1.0	7.2
WC-082	Infill Sampling	Intermediate	WC-S082-0-1	2/16/2023	Primary	0.0-1.0	11 J
WC-083	Infill Sampling	Intermediate	WC-S083-0-1	2/13/2023	Primary	0.0-1.0	2.5
WC-084	Infill Sampling	Shallow	WC-S084-0-1	2/16/2023	RD Decision	0.0-1.0	6.5
WC-085	Infill Sampling	Intermediate	WC-S085-0-1	2/14/2023	Primary	0.0-1.0	3.5
WC-086	Infill Sampling	Intermediate	WC-S086-0-1	2/14/2023	Primary	0.0-1.0	2.5
WC-087	Infill Sampling	Intermediate	WC-S087-0-1	2/15/2023	Primary	0.0-1.0	2.1
WC-088	Infill Sampling	Intermediate	WC-S088-0-1	2/14/2023	Primary	0.0-1.0	2.2
WC-089	Infill Sampling	Shallow	WC-S089-0-1	2/15/2023	Primary	0.0-1.0	6.4
WC-090	Infill Sampling	Intermediate	WC-C090-0-1	3/21/2023	Primary	0.0-1.0	6.1
WC-091	Infill Sampling	Shallow	WC-S091-0-1	2/15/2023	Primary	0.0-1.0	6.3
WC-092	Infill Sampling	Intermediate	WC-S092-0-1	2/14/2023	Primary	0.0-1.0	2.6
WC-094	Infill Sampling	Intermediate	WC-S094-0-1	2/14/2023	Primary	0.0-1.0	3.3
WC-095	Infill Sampling	Intermediate	WC-S095-0-1	2/16/2023	Primary	0.0-1.0	4.9
WC-DG001	Porewater Co-located	Shallow	WC-DG001	8/25/2022	Primary	0.0-1.0	5.1
WC-DG002	Porewater Co-located	Intermediate	WC-DG002	8/25/2022	Primary	0.0-1.0	6.8
WC-DG003	Porewater Co-located	Intermediate	WC-DG003	8/28/2022	RD Decision	0.0-1.0	6.0
WC-DG004	Porewater Co-located	Shallow	WC-DG004	8/28/2022	Primary	0.0-1.0	6.0
WC-DG005	Porewater Co-located	Shallow	WC-DG005	8/28/2022	Primary	0.0-1.0	5.1
WC-DG006	Porewater Co-located	Shallow	WC-DG006	8/26/2022	Primary	0.0-1.0	4.3
WC-DG007	Porewater Co-located	Intermediate	WC-DG007	8/29/2022	Primary	0.0-1.0	5.0
WC-DG008	Porewater Co-located	Intermediate	WC-DG008	8/29/2022	Primary	0.0-1.0	4.6
WC-DG009	Porewater Co-located	Intermediate	WC-DG009	8/25/2022	Primary	0.0-1.0	6.3
WC-DG010	Porewater Co-located	Intermediate	WC-DG010	8/25/2022	Primary	0.0-1.0	5.4
WC-DG011	Porewater Co-located	Intermediate	WC-DG011	8/26/2022	Primary	0.0-1.0	5.5
WC-DG012	Porewater Co-located	Intermediate	WC-DG012	8/26/2022	Primary	0.0-1.0	3.9

Notes

Yellow highlight = Result exceeds the referenced ROD Cleanup Level

BOLD = Detection

EPA = U.S. Environmental Protection Agency

ft = foot or feet

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

mg/kg = milligrams per kilogram

RD = remedial design

ROD = Record of Decision

U = Result not detected above the referenced laboratory detection limit

Table 4-1f
Surface and Subsurface Sediment for Grain Size

Method							Grain Size by D422M (%)			
Screening Criteria							Gravel (>2.00mm)	Sand (0.063mm - 2.00mm)	Silt (0.005mm < 0.063mm)	Clay (< 0.005 mm)
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)				
WC-002	Primary	Shallow	WC-S002-5.5-7	6/29/2022	Primary	5.5-7.0	5.22	35.2	47.0	12.6
WC-008	Primary	Shallow	WC-S008-6-7	6/23/2022	Primary	6.0-7.0	9.86	78.5	11.0	0.70
WC-013	Primary	Shallow	WC-S013-1-2	6/25/2022	Primary	1.0-2.0	0.49	53.8	34.9	10.8
WC-016	Primary	Shallow	WC-S016-2-3	6/30/2022	Primary	2.0-3.0	8.87	85.8	4.40	1.00
WC-017	Primary	Shallow	WC-S017-6-7	6/27/2022	Primary	6.0-7.0	5.52	65.1	26.8	2.60
WC-049-A	Primary	Intermediate	WC-G049-A	6/15/2022	Primary	0.0-1.0	0.0100 U	5.01	77.9	17.1
WC-059	Primary	Intermediate	WC-G059	6/14/2022	Primary	0.0-1.0	1.50	91.1	5.50	1.90
WC-060	Primary	Intermediate	WC-S060-5-7	6/29/2022	Primary	5.0-7.0	39.0	55.3	5.20	0.60
WC-065	Step Out	Intermediate	WC-S065-0-1	6/29/2022	Primary	0.0-1.0	0.38	51.3	38.9	9.40
WC-077	Step Out	Intermediate	WC-S077-1-3	7/1/2022	Primary	1.0-3.0	7.82	87.1	4.60	0.50
WC-079	Primary	Intermediate	WC-G079	6/15/2022	Primary	0.0-1.0	0.44	72.0	22.6	4.90

Notes

BOLD = Detection

ft = foot or feet

mm = millimeters

U = Result not detected above the referenced laboratory detection limit

Table 4-1g
Surface and Subsurface Sediment Results for Physical Parameters

Method							SM2540G (%)	EPA 9060A (%)
Screening Criteria							Total Solids	Total Organic Carbon
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)		
WC-001	Primary	Shallow	WC-S001-0-1	6/29/2022	Primary	0.0-1.0	59	2.5 J
			WC-S001-1-2	6/29/2022	RD Decision	1.0-2.0	70	0.36 J
			WC-S001-2-3	6/29/2022	RD Decision	2.0-3.0	70	0.072
WC-002	Primary	Shallow	WC-S002-1-2	2/16/2023	Primary	1.0-2.0	49	19
			WC-S002-2-3	2/16/2023	RD Decision	2.0-3.0	51	22
			WC-S002-3-4	2/16/2023	Primary	3.0-4.0	53.5	8.2
			WC-S002-4-4.5	6/29/2022	Primary	4.0-4.5	52.4	5.3
			WC-S002-4.5-5.5	6/29/2022	RD Decision	4.5-5.5	55	7.3 J
			WC-S002-5.5-7	6/29/2022	Primary	5.5-7.0	62	5.4
			WC-S002-7-8	6/29/2022	Primary	7.0-8.0	61	2.9 J
			WC-S002-8-9	6/29/2022	Primary	8.0-9.0	68	1.6 J
WC-003	Primary	Shallow	WC-S003-1-2	2/16/2023	Primary	1.0-2.0	36	12
			WC-S003-2-3	2/16/2023	Primary	2.0-3.0	63	5.9
			WC-S003-3-4	2/16/2023	Primary	3.0-4.0	66.8	1.2
			WC-S003-4-5	2/16/2023	Primary	4.0-5.0	69.7	1.8
			WC-S003-5-6	6/22/2022	Primary	5.0-6.0	68	1.4
			WC-S003-6-7	6/22/2022	Primary	6.0-7.0	76	0. J
WC-003-A	Porewater Co-located	Shallow	WC-G003-A	8/29/2022	Primary	0.0-1.0	64	3.1
WC-004	Primary	Shallow	WC-S004-1-2	2/16/2023	Primary	1.0-2.0	47	12
			WC-S004-2-3	2/16/2023	RD Decision	2.0-3.0	65	1.3
			WC-S004-3-4	2/16/2023	Primary	3.0-4.0	66.3	1.4
			WC-S004-4-5	2/16/2023	Primary	4.0-5.0	59.1	3.8
			WC-S004-5-6	6/22/2022	Primary	5.0-6.0	82.4	1.2
			WC-S004-6-7	6/22/2022	RD Decision	6.0-7.0	66	0.046
			WC-S004-7-8	6/22/2022	Primary	7.0-8.0	71	0.060
WC-005	Primary	Shallow	WC-S005-0-1	6/21/2022	Primary	0.0-1.0	57	2.1
			WC-S005-1-2	6/21/2022	Primary	1.0-2.0	61	1.3
			WC-S005-2-3	6/21/2022	Primary	2.0-3.0	73	2.1
			WC-S005-3-4	6/21/2022	RD Decision	3.0-4.0	75.0	—
WC-007	Primary	Shallow	WC-S007-2-3	6/23/2022	Primary	2.0-3.0	72	0.27
WC-008	Primary	Shallow	WC-S008-1-2	2/15/2023	Primary	1.0-2.0	71	0.24
			WC-S008-2-3	2/15/2023	Primary	2.0-3.0	77	0.31
			WC-S008-3-4	2/15/2023	Primary	3.0-4.0	76.6	1.3
			WC-S008-4-5	6/23/2022	Primary	4.0-5.0	72	0.17
			WC-S008-5-6	6/23/2022	Primary	5.0-6.0	83	0.19
WC-010	Primary	Shallow	WC-S010-1-2	2/15/2023	RD Decision	1.0-2.0	73	0.13 J
			WC-S010-2-3	2/15/2023	Primary	2.0-3.0	74	0.43
			WC-S010-3-4	6/23/2022	RD Decision	3.0-4.0	73	0.36
			WC-S010-4-5	6/23/2022	Primary	4.0-5.0	77	0.24
WC-012	Primary	Shallow	WC-S012-0-1	6/24/2022	Primary	0.0-1.0	57	2.2
			WC-S012-1-2	6/24/2022	Primary	1.0-2.0	58	2.8
			WC-S012-2-3	6/24/2022	Primary	2.0-3.0	52	7.2
			WC-S012-3-4	6/24/2022	Primary	3.0-4.0	59.9	—
			WC-S012-4-5	6/24/2022	RD Decision	4.0-5.0	65.9	—
WC-013	Porewater Co-located	Shallow	WC-S013-0-1	6/25/2022	Primary	0.0-1.0	52	4.2
	Primary	Shallow	WC-S013-1-2	6/25/2022	Primary	1.0-2.0	58	2.2
			WC-S013-2-3	6/25/2022	Primary	2.0-3.0	51	5.5
			WC-S013-5-6	6/25/2022	Primary	5.0-6.0	77.0	—
			WC-S013-6-7	6/25/2022	Primary	6.0-7.0	82.1	—
WC-014	Primary	Shallow	WC-S014-1-2	6/25/2022	Primary	1.0-2.0	68	0.64
			WC-S014-2-3	6/25/2022	RD Decision	2.0-3.0	69	0.99
WC-015	Primary	Shallow	WC-S015-1-2	6/25/2022	Primary	1.0-2.0	70	0.37
			WC-S015-2-3	6/25/2022	Primary	2.0-3.0	70	0.33
WC-016	Primary	Shallow	WC-S016-1-2	6/30/2022	Primary	1.0-2.0	75	0.19
			WC-S016-2-3	6/30/2022	RD Decision	2.0-3.0	72	0.31
WC-017	Primary	Shallow	WC-S017-1-2	6/27/2022	RD Decision	1.0-2.0	68	0.94
			WC-S017-2-3	6/27/2022	Primary	2.0-3.0	72	0.11
WC-018	Porewater Co-located	Shallow	WC-S018-0-1	6/27/2022	Primary	0.0-1.0	66	0.98
	Primary	Shallow	WC-S018-1-2	6/27/2022	Primary	1.0-2.0	50	4.0
			WC-S018-2-3	6/27/2022	RD Decision	2.0-3.0	73	0.15 J
WC-019	Primary	Shallow	WC-S019-1-2	6/28/2022	Primary	1.0-2.0	71	1.1
			WC-S019-2-3	6/28/2022	RD Decision	2.0-3.0	57	3.5
WC-019-A	Primary	Shallow	WC-G019-A	6/13/2022	Primary	0.0-1.0	42	4.5
WC-023	Primary	Intermediate	WC-S023-0-1	2/16/2023	Primary	0.0-1.0	46	20
WC-025	Primary	Intermediate	WC-S025-3-5	6/30/2022	Primary	3.0-5.0	91	0.026
WC-025-A	Porewater Co-located	Intermediate	WC-G025-A	6/14/2022	Primary	0.0-1.0	64	0.31
WC-030-A	Porewater Co-located	Intermediate	WC-G030-A	6/13/2022	Primary	0.0-1.0	43	5.6
WC-032-A	Porewater Co-located	Intermediate	WC-G032-A	6/13/2022	Primary	0.0-1.0	31	10
WC-033-A	Porewater Co-located	Intermediate	WC-G033-A	8/28/2022	Primary	0.0-1.0	48	4.6
WC-037-A	Primary	Intermediate	WC-G037-A	6/13/2022	Primary	0.0-1.0	35	7.7
WC-041-A	Porewater Co-located	Intermediate	WC-G041-A	8/28/2022	Primary	0.0-1.0	40	7.2
WC-047-A	Primary	Intermediate	WC-C047-A-0-1	3/21/2023	Primary	0.0-1.0	44	2.5
WC-048-A-1	Primary	Intermediate	WC-G048-A-1	6/15/2022	Primary	0.0-1.0	68	0.17
WC-048-A-2	Primary	Intermediate	WC-G048-A-2	6/15/2022	Primary	0.0-1.0	67	0.20
WC-049-A	Primary	Intermediate	WC-G049-A	6/15/2022	Primary	0.0-1.0	46	4.1
WC-053	Step Out	Shallow	WC-G053	6/16/2022	Primary	0.0-1.0	56	1.7
WC-054	Primary	Intermediate	WC-S054-0-1	2/16/2023	Primary	0.0-1.0	22	83
WC-056	Primary	Intermediate	WC-S056-0-1	6/30/2022	RD Decision	0.0-1.0	70	0.38
WC-057	Primary	Intermediate	WC-S057-0-1	2/13/2023	Primary	0.0-1.0	69	0.11
WC-059	Primary	Intermediate	WC-G059	6/14/2022	RD Decision	0.0-1.0	67	0.36
			WC-S059-1-3	6/29/2022	RD Decision	1.0-3.0	66	1.8
WC-060	Primary	Intermediate	WC-S060-0-1	6/29/2022	Primary	0.0-1.0	85	0.65
			WC-S060-1-3	6/29/2022	RD Decision	1.0-3.0	90	0.017 J
WC-060-A	Primary	Intermediate	WC-S060-A-0-1	6/30/2022	RD Decision	0.0-1.0	71	0.53
WC-061	Primary	Intermediate	WC-S061-0-1	6/28/2022	Primary	0.0-1.0	76	0.66
			WC-S061-1-3	6/28/2022	RD Decision	1.0-3.0	79	0.021 J
WC-063	Primary	Intermediate	WC-S063-1-3	6/28/2022	Primary	1.0-3.0	76	0.028

Table 4-1g
Surface and Subsurface Sediment Results for Physical Parameters

Method							SM2540G (%)	EPA 9060A (%)
Screening Criteria							Total Solids	Total Organic Carbon
Station Name	Station Type	Region	Sample ID	Sample Date	Sample Type	Depth Interval (ft)		
WC-064	Step Out	Intermediate	WC-G064	6/13/2022	Primary	0.0-1.0	42	5.4
			WC-S064-1-3	6/28/2022	RD Decision	1.0-3.0	64.1	—
			WC-S064-3-5	6/28/2022	Primary	3.0-5.0	80.7	—
WC-065	Step Out	Intermediate	WC-S065-0-1	6/29/2022	Primary	0.0-1.0	66	1.4 J
			WC-S065-1-3	6/29/2022	Primary	1.0-3.0	55	4.7 J
WC-069	Primary	Intermediate	WC-S069-1-3	2/15/2023	RD Decision	1.0-3.0	52	4.9 J
WC-069-A	Primary	Intermediate	WC-G069-A	6/15/2022	RD Decision	0.0-1.0	69	0.24
WC-072	Primary	Intermediate	WC-G072	6/15/2022	Primary	0.0-1.0	67	0.52
WC-079	Primary	Intermediate	WC-G079	6/15/2022	Primary	0.0-1.0	68	0.47
			WC-S079-1-3	2/15/2023	Primary	1.0-3.0	81	0.060
WC-080	Infill Sampling	Intermediate	WC-S080-0-1	2/13/2023	Primary	0.0-1.0	69	0.27
			WC-S080-1-3	2/13/2023	Primary	1.0-3.0	77	0.030
WC-081	Infill Sampling	Intermediate	WC-S081-0-1	2/16/2023	Primary	0.0-1.0	38	26
			WC-S081-1-3	2/16/2023	RD Decision	1.0-3.0	39	23
			WC-S081-3-5	2/16/2023	Primary	3.0-5.0	56.2	—
			WC-S081-5-7	2/16/2023	Primary	5.0-7.0	58.8	—
WC-082	Infill Sampling	Intermediate	WC-S082-0-1	2/16/2023	Primary	0.0-1.0	22	133
			WC-S082-1-2	2/16/2023	Primary	1.0-2.0	33	42
			WC-S082-2-3	2/16/2023	Primary	2.0-3.0	19	132
			WC-S082-3-4	2/16/2023	Primary	3.0-4.0	68.6	2.3
			WC-S082-4-5	2/16/2023	Primary	4.0-5.0	85.0	0.18
	Infill	Intermediate	WC-S082-5-6	2/16/2023	Primary	5.0-6.0	89	0.049
WC-083	Infill Sampling	Intermediate	WC-S083-0-1	2/13/2023	Primary	0.0-1.0	82	0.12
			WC-S083-1-2	2/13/2023	Primary	1.0-2.0	82	0.12
			WC-S083-2-3	2/13/2023	Primary	2.0-3.0	87	0.059
WC-084	Infill Sampling	Shallow	WC-S084-0-1	2/16/2023	RD Decision	0.0-1.0	37	36 J+
			WC-S084-1-2	2/16/2023	Primary	1.0-2.0	63	24
			WC-S084-2-3	2/16/2023	Primary	2.0-3.0	68	16
			WC-S084-3-4	2/16/2023	Primary	3.0-4.0	54.3	—
			WC-S084-4-5	2/16/2023	Primary	4.0-5.0	73.4	—
	Primary		WC-S084-5-6	2/16/2023	Primary	5.0-6.0	61.9	—
WC-085	Infill Sampling	Intermediate	WC-S084-6-7	2/16/2023	Primary	6.0-7.0	57.5	—
			WC-S085-0-1	2/14/2023	Primary	0.0-1.0	75	0.081
WC-086	Infill Sampling	Intermediate	WC-S085-1-3	2/14/2023	Primary	1.0-3.0	89	0.025
			WC-S086-0-1	2/14/2023	Primary	0.0-1.0	76	0.033
WC-087	Infill Sampling	Intermediate	WC-S086-1-3	2/14/2023	Primary	1.0-3.0	87	0.062
			WC-S087-0-1	2/15/2023	Primary	0.0-1.0	78	0.033
WC-088	Infill Sampling	Intermediate	WC-S087-1-3	2/15/2023	Primary	1.0-3.0	83	0.021 J
			WC-S088-0-1	2/14/2023	Primary	0.0-1.0	73	0.028
WC-089	Infill Sampling	Shallow	WC-S088-1-3	2/14/2023	RD Decision	1.0-3.0	83	0.020 J
			WC-S089-0-1	2/15/2023	Primary	0.0-1.0	47	5.3
			WC-S089-1-2	2/15/2023	Primary	1.0-2.0	56	4.2
			WC-S089-2-3	2/15/2023	Primary	2.0-3.0	64	2.6
			WC-S089-3-4	2/15/2023	Primary	3.0-4.0	87.3	—
WC-090	Infill Sampling	Intermediate	WC-S089-4-5	2/15/2023	Primary	4.0-5.0	89.4	—
			WC-C090-0-1	3/21/2023	Primary	0.0-1.0	51	4.8
			WC-C090-1-3	3/21/2023	RD Decision	1.0-3.0	48	9.2
WC-091	Infill Sampling	Shallow	WC-C090-7-9	3/21/2023	Primary	7.0-9.0	67.2	—
			WC-S091-0-1	2/15/2023	Primary	0.0-1.0	54	4.3
			WC-S091-1-2	2/15/2023	RD Decision	1.0-2.0	54	4.2
WC-092	Infill Sampling	Intermediate	WC-S091-2-3	2/15/2023	Primary	2.0-3.0	48	5.1
			WC-S092-0-1	2/14/2023	Primary	0.0-1.0	74	0.045
WC-094	Infill Sampling	Intermediate	WC-S092-1-3	2/14/2023	Primary	1.0-3.0	81	0.048
			WC-S094-0-1	2/14/2023	Primary	0.0-1.0	75	0.021 J
WC-095	Infill Sampling	Intermediate	WC-S094-1-3	2/14/2023	Primary	1.0-3.0	86	0.021 J
			WC-S095-0-1	2/16/2023	Primary	0.0-1.0	75	1.3
WC-DG001	Porewater Co-located	Shallow	WC-S095-1-3	2/16/2023	Primary	1.0-3.0	89	0.089
WC-DG002	Porewater Co-located	Intermediate	WC-DG001	8/25/2022	Primary	0.0-1.0	56	4.5
WC-DG003	Porewater Co-located	Intermediate	WC-DG002	8/25/2022	Primary	0.0-1.0	42	11
WC-DG004	Porewater Co-located	Shallow	WC-DG003	8/28/2022	RD Decision	0.0-1.0	48	4.2
WC-DG005	Porewater Co-located	Shallow	WC-DG004	8/28/2022	Primary	0.0-1.0	48	5.0
WC-DG006	Porewater Co-located	Shallow	WC-DG005	8/28/2022	Primary	0.0-1.0	62	1.4
WC-DG007	Porewater Co-located	Intermediate	WC-DG006	8/26/2022	Primary	0.0-1.0	73	0.16
WC-DG008	Porewater Co-located	Intermediate	WC-DG007	8/29/2022	Primary	0.0-1.0	60	0.77
WC-DG009	Porewater Co-located	Intermediate	WC-DG008	8/29/2022	Primary	0.0-1.0	51	1.7
WC-DG010	Porewater Co-located	Intermediate	WC-DG009	8/25/2022	Primary	0.0-1.0	71	0.19
WC-DG011	Porewater Co-located	Intermediate	WC-DG010	8/25/2022	Primary	0.0-1.0	49	5.9
WC-DG012	Porewater Co-located	Intermediate	WC-DG011	8/26/2022	Primary	0.0-1.0	73	0.35
WC-DG012	Porewater Co-located	Intermediate	WC-DG012	8/26/2022	Primary	0.0-1.0	72	0.39

Notes

BOLD = Detection

— = Not analyzed or not applicable

EPA = U.S. Environmental Protection Agency

ft = foot or feet

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The result is an estimated quantity, but the result may be biased high.

RD = remedial design

ROD = Record of Decision

Table 4-2
Surface Sediment Summary Statistics

Analyte	CUL	Site-Wide RAL	PTW Threshold	Number of Exceedances (Non-detects only; Non-detects not calculated in aggregates)			Number of Exceedances (Detects only)			Number of Samples	Number of Detects	Number of Non-Detects	Maximum Detect		Minimum Detect		Average Detect	Median Detect
				CUL	Site-Wide RAL or PQL ¹	PTW Threshold	CUL	Site-Wide RAL or PQL ¹	PTW Threshold				Concentration	Location	Concentration	Location		
Polychlorinated Biphenyls (µg/kg)																		
Total PCBs	9	75	200	—	—	—	35	10	1	59	35	24	11684	WC-S006-0-1	12.2	WC-S061-0-1	388	53.6
PCDD/Fs (pg/g)																		
1,2,3,4,7,8-HxCDF	0.4	—	400	1	—	—	48	—	—	60	53	7	156	WC-S084-0-1	0.193	WC-S086-0-1	18	6.48
1,2,3,7,8-PeCDD	0.2	2.5	100	6	—	—	37	13	3	60	42	18	16.3	WC-G019-A	0.136	WC-DG012	2.7	1.365
2,3,4,7,8-PeCDF	0.3	200	200	—	—	—	43	—	—	60	49	11	40.8	WC-G041-A	0.12	WC-S087-0-1	8.2	3.86
2,3,7,8-TCDD	0.2	1	10	2	—	—	33	8	—	60	34	26	3.89	WC-G041-A	0.111	WC-S060-0-1	0.95	0.737
2,3,7,8-TCDF	0.40658	—	600	—	—	—	36	—	—	60	46	14	16.9	WC-G041-A	0.138	WC-G048-A-2	3	1.955
2,3,7,8-TCDD TEQ	10	—	—	—	—	—	29	—	—	60	60	—	110	WC-G041-A	0.175	WC-S057-0-1	19	7.51
Organochlorine Pesticides (µg/kg)																		
Total DDx	6.1	160	7,050	8	—	—	6	2	—	58	9	49	4350	WC-S082-0-1	2.6	WC-S056-0-1	688	18
Polycyclic Aromatic Hydrocarbons (µg/kg)																		
cPAHs	774	—	774,000	—	—	—	5	—	—	58	51	7	36270	WC-G003-A	1.8	WC-S086-0-1	955	106
Total PAHs	23,000	30,000	—	—	—	—	5	4	—	58	53	5	230110	WC-G003-A	21	WC-S088-0-1	10320	920
Naphthalene	—	—	140,000	—	—	—	—	—	—	58	42	16	8450	WC-S084-0-1	3.8	WC-S088-0-1	536	120
Conventionals (%)																		
Total Organic Carbon ²	—	—	—	—	—	—	—	—	—	58	58	—	83	WC-S082-0-1	0.021	WC-S094-0-1	5	1.4
Total Solids	—	—	—	—	—	—	—	—	—	58	58	—	85	WC-S060-0-1	22	WC-S054-0-1, WC-S082-0-1	58	61

Notes

¹ Per the September 22, 2022, EPA memorandum prepared with subject line “Evaluation of consistently and reliably attainable practical quantification limits for 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD for use in Sediment Management Area delineation at the Portland Harbor Superfund Site,” the practical quantification limit of 1.0 picograms/gram and 2.5 picograms/gram were used for delineation of 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD, respectively.

² One surface sediment sample (WC-S082-0-1) had a reported Total Organic Carbon result of 133 percent. This result was likely caused by a low Total Solids result of 22 percent, which affected the wet-to-dry weight conversion. This result is not included in the maximum, average, or median concentration calculations.

— = not applicable

µg/kg = micrograms per kilogram

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

CUL = Cleanup Level

DDx = the sum of dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyltrichloroethane (DDT)

HxCDF = hexachlorodibenzofuran

PAHs = Polycyclic Aromatic Hydrocarbons

PCBs = polychlorinated biphenyls

PCDD/Fs = dibenzo-p-dioxins and dibenzofurans

PeCDD = pentachlorodibenzo-p-dioxin

PeCDF = pentachlorodibenzofuran

pg/g = picograms per gram

PQL = Practical Quantitation Limit

PTW = Principal Threat Waste

RAL = Remedial Action Level

TCDD = tetrachlorodibenzo-p-dioxin

TCDF = tetrachlorodibenzofuran

TEQ = toxicity equivalency quotient

Table 4-3
Subsurface Sediment Summary Statistics

Analyte	CUL	Site-Wide RAL	PTW Threshold	Number of Exceedances (Non-detects only; Non-detects not calculated in aggregates)			Number of Exceedances (Detects only)			Number of Samples	Number of Detects	Number of Non-Detects	Maximum Detect			Minimum Detect			Average Detect	Median Detect
				CUL	Site-Wide RAL or PQL ¹	PTW Threshold	CUL	Site-Wide RAL or PQL ¹	PTW Threshold				Concentration	Location	Depth Range (ft)	Concentration	Location	Depth Range (ft)		
Polychlorinated Biphenyls (µg/kg)																				
Total PCBs	9	75	200	—	—	—	52	13	4	104	54	50	888	WC-S006-1-2, WC-C090-5-7	1.0-2.0, 5.0-7.0	0.0826	WC-S006-3-4, WC-S089-3-4	3.0-4.0, 3.0-4.0	82	40.7
PCDD/Fs (pg/g)																				
1,2,3,4,7,8-HxCDF	0.4	—	400	1	—	—	91	—	1	139	96	43	475	WC-S014-9-10	9.0-10.0	0.126	WC-S017-2-3	2.0-3.0	27	10.45
1,2,3,7,8-PeCDD	0.2	2.5	10	21	—	—	77	43	23	139	83	56	18400	WC-S014-9-10	9.0-10.0	0.126	WC-S001-2-3	2.0-3.0	365	2.64
2,3,4,7,8-PeCDF	0.3	200	200	—	—	—	89	1	1	139	95	44	266	WC-S014-9-10	9.0-10.0	0.0452	WC-S080-1-3	1.0-3.0	17	8.4
2,3,7,8-TCDD	0.2	1	10	4	—	—	72	37	14	139	74	65	339	WC-S014-9-10	9.0-10.0	0.15	WC-S084-2-3	2.0-3.0	12	0.99
2,3,7,8-TCDF	0.40658	—	600	1	—	—	75	—	—	139	91	48	37.1	WC-S013-2-3	2.0-3.0	0.0749	WC-S010-1-2	1.0-2.0	4.2	1.93
Organochlorine Pesticides (µg/kg)																				
Total DDx	6.1	160	7,050	19	—	—	13	2	—	80	16	64	4030	WC-S082-2-3	2.0-3.0	4.1	WC-S087-1-3, WC-S085-1-3	1.0-3.0, 1.0-3.0	297	16
Polycyclic Aromatic Hydrocarbons (µg/kg)																				
cPAHs	774	—	774,000	—	—	—	9	—	—	83	71	12	5251	WC-S002-4.5-5.5	4.5-5.5	1.8	WC-S063-1-3	1.0-3.0	390	125
Total PAHs	23,000	30,000	—	—	—	—	7	3	—	83	74	9	77158	WC-S065-1-3	1.0-3.0	16	WC-S082-5-6	5.0-6.0	6401	1590.5
Naphthalene	—	—	140,000	—	—	—	—	—	—	83	60	23	3750	WC-S065-3-5	3.0-5.0	2.8	WC-S010-1-2	1.0-2.0	420	195
Conventionals (%)																				
Total Organic Carbon	—	—	—	—	—	—	—	—	—	82	82	—	42	WC-S082-2-3	2.0-3.0	0	WC-S003-6-7	6.0-7.0	4	1.1
Total Solids	—	—	—	—	—	—	—	—	—	98	98	—	91	WC-S025-3-5	3.0-5.0	19	WC-S082-2-3	2.0-3.0	68	68.8

Notes

¹ Per the September 22, 2022, EPA memorandum prepared with subject line “Evaluation of consistently and reliably attainable practical quantification limits for 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD for use in Sediment Management Area delineation at the Portland Harbor Superfund Site,” the practical quantification limit of 1.0 picograms/gram and 2.5 picograms/gram were used for delineation of 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD, respectively.

² One subsurface sediment sample (WC-S082-2-3) had a reported TOC result of 132 percent. This result was likely caused by a low TS result of 19 percent, which affected the wet-to-dry weight conversion. This result is not included in the average, maximum, or median concentration calculations.

— = not applicable
µg/kg = micrograms per kilogram
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
CUL = Cleanup Level
DDx = the sum of dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyltrichloroethane (DDT)
HxCDF = hexachlorodibenzofuran
PAHs = Polycyclic Aromatic Hydrocarbons
PCBs = polychlorinated biphenyls
PCDD/Fs = dibenzo-p-dioxins and dibenzofurans
PeCDD = pentachlorodibenzo-p-dioxin
PeCDF = pentachlorodibenzofuran
pg/g = picograms per gram
PQL = Practical Quantitation Limit
PTW = Principal Threat Waste
RAL = Remedial Action Level
TCDD = tetrachlorodibenzo-p-dioxin
TCDF = tetrachlorodibenzofuran

Table 4-4
PDI and SPDI Combined Surface Sediment Summary Statistics

Analyte	CUL	Site-Wide RAL	PTW Threshold	Number of Exceedances (Non-detects only; Non-detects not calculated in aggregates)			Number of Exceedances (Detects only)			Number of Samples PDI	Number of Samples SPDI	Number of Samples	Number of Detects	Number of Non-Detects	Maximum Detect		Minimum Detect		Average Detect	Median Detect
				CUL	Site-Wide RAL or PQL ¹	PTW Threshold	CUL	Site-Wide RAL or PQL ¹	PTW Threshold						Concentration	Location	Concentration	Location		
Polychlorinated Biphenyls (µg/kg)																				
Total PCBs	9	75	200	2	—	—	67	14	2	54	59	113	67	46	11684	WC-S006-0-1	12.2	WC-S061-0-1	224	42.8
PCDD/Fs (pg/g)																				
1,2,3,4,7,8-HxCDF	0.4	—	400	1	—	—	93	—	—	58	60	118	104	14	164	WC-G025	0.177	WC-G020	14	2.9
1,2,3,7,8-PeCDD	0.2	2.5	10	13	—	—	74	20	5	58	60	118	80	38	225	WC-G014	0.136	WC-DG012	5	1.295
2,3,4,7,8-PeCDF	0.3	200	200	1	—	—	86	—	—	58	60	118	101	17	40.8	WC-G041-A	0.0867	WC-G050	6	2.15
2,3,7,8-TCDD	0.2	1	10	10	—	—	60	14	—	58	60	118	67	51	7.76	WC-G014	0.09	WC-G020	0.84	0.514
2,3,7,8-TCDF	0.40658	—	600	—	—	—	72	—	—	58	60	118	92	26	16.9	WC-G041-A	0.0902	WC-G052	2.4	0.993
2,3,7,8-TCDD TEQ	10	—	—	—	—	—	43	—	—	58	60	118	118	—	481	WC-G014	0.175	WC-S057-0-1	18	4.555
Organochlorine Pesticides (µg/kg)																				
Total DDx	6.1	160	7,050	10	—	—	16	2	—	49	58	107	22	85	4350	WC-S082-0-1	2.6	WC-S056-0-1	294	17.1
Polycyclic Aromatic Hydrocarbons (µg/kg)																				
cPAHs	774	—	774,000	—	—	—	5	—	—	54	58	112	105	7	109080	WC-G014	0.813	WC-G020	2147	76
Total PAHs	23,000	30,000	—	—	—	—	12	10	—	54	58	112	107	5	1668942	WC-G014	12.8	WC-G020	26951	651
Naphthalene	—	—	140,000	—	—	—	—	—	—	54	58	112	96	16	8450	WC-S084-0-1	2.18	WC-G020	361	52.35
Conventionals (%)																				
Total Organic Carbon ²	—	—	—	—	—	—	—	—	—	58	58	116	116	—	83	WC-S082-0-1	0.021	WC-S094-0-1	3	0.98
Total Solids	—	—	—	—	—	—	—	—	—	58	58	116	116	—	99.3	WC-G016	22	WC-S082-0-1, WC-S054-0-1	61	64

Notes

¹ Per the September 22, 2022, EPA memorandum prepared with subject line “Evaluation of consistently and reliably attainable practical quantification limits for 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD for use in Sediment Management Area delineation at the Portland Harbor Superfund Site,” the practical quantification limit of 1.0 picograms/gram and 2.5 picograms/gram were used for delineation of 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD, respectively.

² One surface sediment sample (WC-S082-0-1) had a reported Total Organic Carbon result of 133 percent. This result was likely caused by a low Total Solids result of 22 percent, which affected the wet-to-dry weight conversion. This result is not included in the maximum, average, or median concentration calculations.

— = not applicable

µg/kg = micrograms per kilogram

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

CUL = Cleanup Level

DDx = the sum of dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyltrichloroethane (DDT)

HxCDF = hexachlorodibenzofuran

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PeCDF = pentachlorodibenzofuran

pg/g = picograms per gram

PQL = Practical Quantitation Limit

PTW = Principal Threat Waste

RAL = Remedial Action Level

TCDD = tetrachlorodibenzo-p-dioxin

TCDF = tetrachlorodibenzofuran

TEQ = toxicity equivalency quotient

Table 4-5
PDI and SPDI Combined Subsurface Sediment Summary Statistics

Analyte	CUL	Site-Wide RAL	PTW Threshold	Number of Exceedances (Non-detects only; Non-detects not calculated in aggregates)			Number of Exceedances (Detects only)			Number of Samples PDI	Number of Samples SPDI	Number of Samples	Number of Detects	Number of Non-Detects	Maximum Detect			Minimum Detect			Average Detect	Median Detect
				CUL	Site-Wide RAL or PQL ¹	PTW Threshold	CUL	Site-Wide RAL or PQL ¹	PTW Threshold						Concentration	Location	Depth Range (ft)	Concentration	Location	Depth Range (ft)		
Polychlorinated Biphenyls (µg/kg)																						
Total PCBs	9	75	200	4	—	—	132	53	10	130	104	234	134	100	888	WC-S006-1-2, WC-C090-5-7	1.0-2.0, 5.0-7.0	0.0826	WC-S006-3-4, WC-S089-3-4	3.0-4.0, 3.0-4.0	87	63.5
PCDD/Fs (pg/g)																						
1,2,3,4,7,8-HxCDF	0.4	—	400	3	—	—	169	—	1	120	139	259	180	79	475	WC-S014-9-10	9.0-10.0	0.103	WC-S055-2-3	2.0-3.0	27	9.235
1,2,3,7,8-PeCDD	0.2	2.5	10	48	4	—	140	83	25	120	139	259	148	111	18400	WC-S014-9-10	9.0-10.0	0.113	WC-S057-1-3	1.0-3.0	206	2.97
2,3,4,7,8-PeCDF	0.3	200	200	1	—	—	168	1	1	120	139	259	180	79	266	WC-S014-9-10	9.0-10.0	0.0452	WC-S080-1-3	1.0-3.0	15	7.635
2,3,7,8-TCDD	0.2	1	10	18	7	—	122	72	14	120	139	259	129	130	339	WC-S014-9-10	9.0-10.0	0.086	WC-C029-5-7	5.0-7.0	8	1.19
2,3,7,8-TCDF	0.40658	—	600	9	—	—	137	—	—	120	139	259	163	96	37.1	WC-S013-2-3	2.0-3.0	0.0749	WC-S010-1-2	1.0-2.0	4.9	2.21
Organochlorine Pesticides (µg/kg)																						
Total DDx	6.1	160	7,050	19	—	—	32	2	—	50	80	130	35	95	4030	WC-S082-2-3	2.0-3.0	4.1	WC-S085-1-3, WC-S087-1-3	1.0-3.0, 1.0-3.0	147	14.8
Polycyclic Aromatic Hydrocarbons (µg/kg)																						
cPAHs	774	—	774,000	—	—	—	9	—	—	83	83	166	146	20	5251	WC-S002-4.5- 5.5	4.5-5.5	0.675	WC-S047-1-3	1.0-3.0	472	138
Total PAHs	23,000	30,000	—	—	—	—	27	22	—	83	83	166	153	13	442986	WC-S049-1-3, WC-S040-5-7	3.0-5.0	6.9	WC-S049-1-3, WC-S040-5-7	1.0-3.0, 5.0-7.0	24628	1720
Naphthalene	—	—	140,000	—	—	—	—	—	—	83	83	166	134	32	9420	WC-C033-7-9	7.0-9.0	1.06	WC-S068-1-3	1.0-3.0	703	167.5
Conventionals (%)																						
Total Organic Carbon	—	—	—	—	—	—	—	—	—	145	82	227	223	4	42	WC-S082-2-3	2.0-3.0	0	WC-S003-6-7	6.0-7.0	2	1.4
Total Solids	—	—	—	—	—	—	—	—	—	145	98	243	243	—	92.6	WC-C075-1-2	1.0-2.0	19	WC-S082-2-3	2.0-3.0	66	66.8

Notes

¹ Per the September 22, 2022, EPA memorandum prepared with subject line "Evaluation of consistently and reliably attainable practical quantification limits for 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD for use in Sediment Management Area delineation at the Portland Harbor Superfund Site," the practical quantification limit of 1.0 picograms/gram and 2.5 picograms/gram were used for delineation of 2,3,7,8-TCDD and 1,2,3,7,8-PeCDD, respectively.

² One subsurface sediment sample (WC-S082-2-3) had a reported TOC result of 132 percent. This result was likely caused by a low TS result of 19 percent, which affected the wet-to-dry weight conversion. This result is not included in the average, maximum, or median concentration calculations.

— = not applicable

µg/kg = micrograms per kilogram

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

CUL = Cleanup Level

DDx = the sum of dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyltrichloroethane (DDT)

HxCDF = hexachlorodibenzofuran

PAHs = Polycyclic Aromatic Hydrocarbons

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pg/g = picograms per gram

PQL = Practical Quantitation Limit

PTW = Principal Threat Waste

RAL = Remedial Action Level

TCDD = tetrachlorodibenzo-p-dioxin

TCDF = tetrachlorodibenzofuran

TEQ = toxicity equivalency quotient

Station Cell	Station Type (Primary or Step-out)	Region (Shallow or Intermediate)	Grab Sample Location ID	Sampling Method	Centroid Coordinates ^a				Total Number of Attempts	Discrete Grab Sub-Sample Location ID	Actual Coordinates ^a				Surface Elevation ^b (ft NAVD 88)	Recovery		Description	Grain Size Distribution		
					Latitude	Longitude	Easting	Northing			Latitude	Longitude	Easting	Northing		(cm)	(%)		G (%)	S (%)	F (%)
1	Primary	Shallow	G001	Hand	45.583078	-122.756186	7624531.64	706743.07	3	G001_1	45.583072	-122.756181	7624532.72	706741.04	8.0	21	70	(0-14 cm): Well graded sand with silt and gravel (SP-SM). 5 YR 4/6 (rust colored). Sand is coarse, gravels are 10 to 40 mm. Loose, moist. (14 - 21 cm): Well graded silty sand (SM), Gley 2 4/4(gray), coarse grained. Loose, moist.	45	45	10
										G001_2	45.583082	-122.756181	7624533.06	706744.65	8.6	20	67	(0-5 cm): Poorly graded sand (SP). 5 YR 4/6 (rust colored). Coarse grained. Loose, moist. (5-12 cm): Poorly graded sand with gravel (SP). 5 YR 4/6. Coarse grained, gravels are 10 to 40 mm and subangular. Loose, moist. (12-20 cm):Silty sand (SP). Gley 2 4/4. Coarse grained and mottled appearance. Loose, moist.	45	45	10
										G001_3	45.583079	-122.756196	7624529.13	706743.52	8.1	21	70	(0-15 cm): Silty sand with gravel (SM). 5 YR 4/6 (rust colored). Coarse grained, gravel are 10 to 40 mm and subangular. Loose, moist. (15-21 cm): Silty sand with gravel (SM). Gley 2 4/4 (grey). Poorly graded. Loose, moist (moister than 0-15 cm interval).	20	55	25
2	Primary	Shallow	G002	Hand	45.582808	-122.755597	7624679.72	706640.31	3	G002_1	45.582805	-122.75558	7624684.00	706639.33	7.1	21	70	Well graded sand with gravel (SW). 5Y 2.5/1. Medium to coarse grained sand, gravel are 0.5 to 8 cm in size and subrounded to angular. Loose, moist.	45	55	0
										G002_2	45.582809	-122.755613	7624675.44	706641.04	7.0	20	67	Well graded sand with gravel (SW). 5Y 2.5/1. Coarse grained sand, gravel are 0.5 to 12 cm in size and subrounded to angular (few are rounded). Loose, wet.	40	55	5
										G002_3	45.582808	-122.755594	7624680.25	706640.36	7.1	23	77	Silty sand with gravel (SM). 5Y 2.5/1. Fine to medium grained sand, gravel are 1 to 5 cm in size and subrounded to angular. Loose, wet.	10	75	15
3	Primary	Shallow	G003	Hand	45.582655	-122.755225	7624773.22	706582.21	3	G003_1	45.582651	-122.755221	7624774.18	706580.49	6.3	25	83	Well graded sand with gravel (SW). 5 YR 2.5/1. Medium to coarse grained, gravel are subrounded to rounded. A few angular basalt gravel. Loose, wet.	25	70	5
										G003_2	45.582657	-122.755219	7624774.84	706582.91	8.3	24	80	Well graded gravel with sand (GW). 5 Y 2.5/1. Medium sand, gravels are rounded to angular. Loose, wet.	70	30	0
										G003_3	45.582658	-122.755235	7624770.64	706583.22	7.1	25	83	Well graded gravel with silt and sand (GW-GM). 5 YR 2.5/1. Medium to coarse grained sand and small to medium rounded to angular gravel. Loose, wet. Between approximately 20 to 25 cm depth, is gray sandy silt layer.	60	30	10
4	Primary	Shallow	G004	Hand	45.582449	-122.754774	7624886.65	706503.87	3	G004_1	45.582442	-122.754764	7624889.02	706501.22	6.2	28	93	Well graded sand with silt and gravel (SW-SM). 5 Y 3/1 (dark brown). Gravel are 20 mm to 40 mm and subangular. Very loose, wet. Wood debris in top 2 cm. Sheen noted when digging.	25	65	10
										G004_2	45.582454	-122.754768	7624888.13	706505.49	6.7	24	80	Silty sand with gravel (SM). 5Y 2.5/1. Fine to medium sand, gravels are 10 to 40 mm and subangular. Very loose, wet. Trace wood debris.	25	50	25
										G004_3	45.582452	-122.754789	7624882.82	706504.89	6.4	23	77	Well graded sand with gravel (SW). 2.5 Y 2.5/1 (dark brown/grey). Gravels are 0.5 mm to 40 mm and subangular. Loose, wet. Trace wood debris and sheen	40	55	5
5	Primary	Shallow	G005	No Samples Collected																	
6	Primary	Shallow	G006	Hand	45.582017	-122.75362	7625177.55	706337.90	3	G006_1	45.582018	-122.75361	7625180.20	706338.25	8.6	30	100	Poorly graded sand (SP). 5Y 2.5/1 (brown). Medium grained. Loose, moist. Alluvium	0	100	0
										G006_2	45.582018	-122.753622	7625177.11	706338.51	8.0	30	100	Poorly graded sand (SP). 5Y 2.5/1 (brown). Medium grained with trace gravel (5 mm to 20 mm in size). Loose, moist. Alluvium	0	100	0
										G006_3	45.582012	-122.75363	7625174.91	706336.41	7.1	26	87	Poorly graded sand (SP). 5Y 2.5/1 (brown). Medium grained. Loose, wet. Alluvium	0	100	0
7	Primary	Shallow	G007	Hand	45.581769	-122.753046	7625321.84	706243.58	3	G007_1	45.581763	-122.753032	7625325.35	706241.44	6.9	30	100	(0-10 cm): Poorly graded sand (SP). 7.5 YR 3/2. Medium grained. Loose, wet. (10-15 cm): Sandy silt (ML). 5Y 2.5/1. Soft, wet. (15 to 30 cm): Poorly graded sand (SP). 5 Y 2.5/1 (grey). Loose, wet. Trace gravel 5 to 50 mm in size. Trace petroleum hydrocarbon-like blebs.	0	90	10
										G007_2	45.58177	-122.753043	7625322.66	706243.95	7.0	28	93	(0-10 cm): Poorly graded sand (SP). 7.5 YR 3/2. Medium to coarse grained. Loose, wet. (10-20 cm): Sandy silt (ML). 5Y 2.5/1 (grey). Soft, wet. (20 to 28 cm): Poorly graded sand (SP). 5 Y 2.5/1 (grey). Medium grained. Loose, wet. Trace gravel and wood debris, 5 to 50 mm in size. Trace petroleum hydrocarbon-like blebs.	0	90	10
										G007_3	45.581772	-122.75306	7625318.33	706244.69	6.7	30	100	(0-10 cm): Poorly graded sand (SP). 7.5 YR 3/2. Medium to coarse grained. Loose, wet. (10-13 cm): Sandy silt (ML). 5Y 2.5/1. Soft, wet. (13 to 30 cm): Poorly graded sand (SP). 5 Y 2.5/1 (grey). Loose, wet. Trace gravel 5 to 50 mm in size. Trace petroleum hydrocarbon-like blebs.	0	95	5
8	Primary	Shallow	G008	Hand	45.581631	-122.752552	7625446.83	706189.63	3	G008_1	45.581637	-122.752568	7625442.90	706192.07	11.5	30	100	Poorly graded sand (SP). 7.5 YR 3/2. Medium grained, gravel are rounded to subrounded with a few angular pieces of basalt. Loose, damp.	0	90	0
										G008_2	45.581619	-122.75255	7625447.45	706185.33	11.3	26	87	Poorly graded sand with gravel (SP). 7.5 YR 3/2. Medium grained, gravel are rounded to subrounded. Loose, damp.	15	85	0
										G008_3	45.581636	-122.75254	7625450.13	706191.50	11.9	29	97	Poorly graded sand with gravel (SP). 7.5 YR 3/2. Medium grained, gravel are subrounded to angular and 2 to 8 cm in size. Loose, damp.	15	85	0
9	Primary	Shallow	G009	Hand	45.581515	-122.752056	7625572.74	706143.87	3	G009_1	45.581524	-122.752066	7625570.25	706147.14	12.1	26	87	Poorly graded sand (SP). 5 YR 3/1. Medium grained, trace subrounded gravel. Very loose, damp.	<2	98	0
										G009_2	45.581515	-122.752036	7625577.84	706143.93	12.0	29	97	Poorly graded sand (SP). 5 YR 3/1. Medium grained, trace subrounded to rounded gravel. Loose, damp.	<2	98	0
										G009_3	45.581505	-122.752066	7625570.12	706140.54	11.1	26	87	Poorly graded sand (SP). 5 YR 3/1. Medium grained, trace subrounded to rounded gravel. Loose, damp.	<2	98	0
10	Primary	Shallow	G010	Hand	45.581302	-122.751573	7625694.09	706062.96	3	G010_1	45.581328	-122.751599	7625687.81	706072.46	4.8	29	97	Well graded sand with silt and gravel (SW-SM). 10 YR 3/1. Medium grained, gravel are rounded and 2.5 to 5 cm in diameter. Loose, wet.	20	70	10
										G010_2	45.581291	-122.751586	7625690.85	706059.00	0.5	28	93	Poorly graded sand with silt and gravel (SP-SM). 7.5 YR 4/6. Medium grained, gravel are well rounded and are 1 to 6 cm in size. Loose, moist.	25	65	10
										G010_3	45.581288	-122.751536	7625703.61	706057.43	0.9	29	97	(0-10 cm): Poorly graded sand with silt (SP-SM). 7.5 YR 4/6. Medium grained. Loose, wet. (10 - 29 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Loose, wet.	10	80	10
11	Primary	Shallow	G011	Hand	45.581242	-122.750916	7625861.65	706036.46	3	G011_1	45.581256	-122.750956	7625851.73	706041.75	9.3	Missing Log					
										G011_2	45.581238	-122.750912	7625862.64	706034.76	8.0	Missing Log					
										G011_3	45.581234	-122.750877	7625871.56	706033.30	8.0	Missing Log					
12	Primary	Shallow	G012	No samples collected due to the presence of rip rap																	
13	Primary	Shallow	G013	No samples collected due to the presence of rip rap																	
14	Primary	Shallow	G014	Hand	45.581038	-122.749184	7626302.83	705949.57	2	G014_1	45.581034	-122.749158	7626309.64	705947.80	8.0	Missing Log					
										G014_2	45.581046	-122.749211	7626296.01	705952.72	7.1	Missing Log					
15	Primary	Shallow	G015	Hand	45.580903	-122.74877	7626407.41	705897.40	3	G015_1	45.58091	-122.748822	7626394.28	705900.37	6.8	Missing Log					
										G015_2	45.580903	-122.74877	7626407.60	705897.52	7.0	Missing Log					
										G015_3	45.580895	-122.748719	7626420.53	705894.13	6.9	Missing Log					
16	Primary	Shallow	G016	Hand	45.580815	-122.748134	7626569.35	705861.02	3	G016_1	45.580828	-122.748192	7626554.62	705865.94	9.8	Missing Log					
										G016_2	45.580814	-122.748137	7626568.49	705860.58	9.0	Missing Log					
										G016_3	45.580806	-122.748076	7626584.07	705857.32	8.2	Missing Log					
17	Primary	Shallow	G017	Hand	45.580817	-122.747556	7626717.44	705857.58	3	G017_1	45.580814	-122.747593	7626707.89	705856.55	8.1	Missing Log					
										G017_2	45.580823	-122.747525	7626725.23	705859.48	9.2	Missing Log					
18	Primary	Shallow	G018	No samples collected due to the presence of rip rap																	

Station Cell	Station Type (Primary or Step-out)	Region (Shallow or Intermediate)	Grab Sample Location ID	Sampling Method	Centroid Coordinates ^a				Total Number of Attempts	Discrete Grab Sub-Sample Location ID	Actual Coordinates ^a				Surface Elevation ^b (ft NAVD 88)	Recovery		Description	Grain Size Distribution			
					Latitude	Longitude	Easting	Northing			Latitude	Longitude	Easting	Northing		(cm)	(%)		G (%)	S (%)	F (%)	
19	Primary	Shallow	G019	Hand	45.580832	-122.746398	7627013.92	705854.71	2	G019_1	45.580852	-122.746364	7627022.79	705861.67	12.5	Missing Log						
										G019_2	45.580813	-122.746438	7627003.36	705848.15	4.5	Missing Log						
20	Primary	Shallow	G020	Hand	45.580741	-122.745793	7627167.82	705817.17	3	G020_1	45.580736	-122.745775	7627172.25	705815.35	6.3	29	97	Well graded sand with silt and gravel (SW-SM). 10 YR 3/1. Sand is medium and gravel are coarse and well rounded (1-2 inches diameter). Loose, wet.	20	70	10	
										G020_2	45.58075	-122.745799	7627166.23	705820.51	6.7	28	93	Poorly graded sand with silt and gravel (SP-SM). 7.5 YR 4/6. Sand is medium and gravel are fine to coarse and well rounded. Loose, moist.	25	65	10	
										G020_3	45.580737	-122.745804	7627164.97	705815.67	6.5	29	97	(0-1 cm): Poorly graded sand with silt (SP-SM). 7.5 YR 4/6. Medium sand. Loose, wet. (1-29 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Loose, wet.	10	80	10	
21	Primary	Shallow	G021	Hand	45.580661	-122.745201	7627318.42	705783.78	3	G021_1	45.580659	-122.745187	7627322.16	705783.04	6.0	30	100	Well graded sand (SW). 10 YR 3/1. Medium grained. Very loose, wet. Trace subrounded gravel and wood debris. Sheen observed on water.	<5	90	5	
										G021_2	45.580668	-122.745205	7627317.53	705786.47	5.9	29	97	Poorly graded sand (SP). 10 YR 3/1. Medium grained. Very loose wet. Wood debris throughout sample. Sheen observed on water.	<5	90	5	
										G021_3	45.580655	-122.745212	7627315.57	705781.83	5.5	26	87	Poorly graded sand (SP). 10 YR 3/1. Medium grained. Very loose wet. Wood debris throughout sample (but less than attempts #1 and #2). Piece of orange brick in sample.	0	95	5	
22	Primary	Shallow	G022	Hand	45.580312	-122.744578	7627474.44	705652.14	3	G022_1	45.580327	-122.744567	7627477.40	705657.75	7.7	28	93	Poorly graded sand (SP). 5 YR 3/2. Medium grained. Loose, moist. Trace wood debris and leaves throughout sample.	0	100	0	
										G022_2	45.580308	-122.744598	7627469.27	705650.76	6.5	30	100	(0-10 cm): Poorly graded sand (SP). 5 YR 3/2. Medium grained. Loose, moist. (10 to 30 cm): Poorly graded sand (SP). Gley 1 3/N. Medium to coarse grained. Loose, moist.	0	100	0	
										G022_3	45.5803	-122.744569	7627476.63	705647.92	7.2	29	97	(0 to 10 cm): Poorly graded sand with silt (SP-SM). Gley 1 2.5/N. Medium grained. Loose, moist. (10-29 cm). Poorly graded sand (SP). 7.5 YR 3/1. Coarse grained. Loose, wet. Sheen noted.	5	65	30	
23	Primary	Intermediate	G023	No acceptable samples collected																		
24	Primary	Intermediate	G024	Power Grab	45.582353	-122.755457	7624710.93	706473.57	9	G024-3	45.582353	-122.755457	7624710.93	706473.57	-16.9	24	80	Sandy silt at surface (ML). 10 YR 3/1. Very soft, wet. Under surface is poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Loose, wet. Trace wood debris.	0	70	30	
25	Primary	Intermediate	G025	Power Grab	45.582135	-122.754949	7624838.66	706390.57	7	G025-3	45.582144	-122.754946	7624839.53	706393.99	-18.6	25	83	Silt with sand (ML). Gley 1 2.5/10Y. Fine to medium grained sand. Stiff, wet. Some organic debris (sticks). Some sheen noted. Initial layer...	0	30	70	
										G025-4	45.582125	-122.754953	7624837.36	706387.00	-19.8	23	77	Poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Loose, wet. Small pieces of waterlogged wood. Alluvium. Initial layer...	0	98	2	
										G025-7	45.582135	-122.754947	7624839.10	706390.73	-19.1	21	70	Sand with silt (SP-SM). Gley 1 2.5/10Y. Fine to medium grained sand. Gravel are subangular to subrounded. Loose, wet, Initial silt layer, 5 YR 2/5/2. Alluvium	10	70	10	
26	Primary	Intermediate	G026	Power Grab	45.580446	-122.74876	7626405.39	705730.93	4	G026-2	45.580445	-122.748774	7626401.94	705730.71	-11.0	29	97	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Minor amounts of wood debris at surface. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G026-3	45.580456	-122.748741	7626410.29	705734.20	-11.1	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Minor amounts of wood debris at surface. No evidence of biological activity. One tiny bleb of sheen. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G026-4	45.580438	-122.748765	7626403.94	705727.87	-11.2	28.5	95	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Minor amounts of wood debris at surface. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1. Trace wood debris at surface.	0	10	90	
27	Primary	Intermediate	G027	Power Grab	45.580409	-122.748165	7626557.35	705713.22	4	G027-2	45.580432	-122.748182	7626553.21	705721.50	-22.8	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Traces leaves and debris at surface. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G027-3	45.580406	-122.748145	7626562.51	705711.79	-23.1	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Traces leaves and debris at surface. Red worm observed in upper 10 cm of sample. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G027-4	45.580391	-122.748168	7626556.34	705706.38	-22.8	29.5	98	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. No surface debris observed. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	10	90	
28	Primary	Intermediate	G028	Power Grab	45.580389	-122.747574	7626708.45	705701.69	5	G028-3	45.580378	-122.747585	7626705.51	705697.84	-25.5	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Two clamshells at surface. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G028-4	45.580377	-122.747564	7626710.92	705697.18	-25.5	29	97	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1. One tiny bleb of sheen (<2 mm).	0	10	90	
										G028-5	45.580412	-122.747573	7626708.93	705710.06	-26.0	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	10	90	
29	Primary	Intermediate	G029	Power Grab	45.580373	-122.747007	7626853.41	705691.70	3	G029-1	45.580368	-122.746993	7626856.86	705689.85	-26.5	29	97	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	8	92	
										G029-2	45.580385	-122.747015	7626851.39	705696.13	-26.6	29	97	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G029-3	45.580366	-122.747012	7626851.99	705689.12	-26.4	30	100	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. No evidence of biological activity. Under surface veneer, color is 10 YR 3/1.	0	10	90	
30	Primary	Intermediate	G030	Power Grab	45.580315	-122.746416	7627003.91	705666.49	6	G030-3	45.580327	-122.746439	7626998.33	705671.07	-24.1	24	80	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. Wood debris throughout sampler (bark, branches, leaves). Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G030-5	45.580305	-122.746386	7627011.62	705662.38	-23.2	27	90	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. Very little wood debris. Under surface veneer, color is 10 YR 3/1.	0	10	90	
										G030-6	45.580314	-122.746425	7627001.78	705666.03	-24.0	30	100	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. Under surface veneer, color is 10 YR 3/1. Trace wood debris. No evidence of biological activity.	0	10	90	
31	Primary	Intermediate	G031	Power Grab	45.580303	-122.745779	7627166.84	705657.38	6	G031-4	45.580317	-122.745786	7627165.31	705662.56	-8.8	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Under surface veneer, color is 10 YR 3/1. Very little wood debris. No evidence of biological activity.	0	10	90	
										G031-5	45.580294	-122.745794	7627163.02	705654.37	-9.5	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Under surface veneer, color is 10 YR 3/1. Very little wood debris.	0	10	90	
										G031-6	45.580297	-122.745758	7627172.20	705655.22	-9.8	30	100	Silt (ML). 10 YR 3/2. Sand is very fine and poorly graded. Very soft, wet. Under surface veneer, color is 10 YR 3/1. No evidence of biological activity.	0	10	90	
32	Primary	Intermediate	G032	Power Grab	45.580303	-122.745254	7627301.18	705653.57	4	G032-1	45.580296	-122.745246	7627303.23	705651.07	-6.4	29	97	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. Under surface veneer, color is 10 YR 3/1. No debris of biological material.	0	10	90	
										G032-3	45.580295	-122.745265	7627298.44	705650.75	-6.9	23	77	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. Under surface veneer, color is 10 YR 3/1. Silt change from very soft to moderate density at bottom of sampler.	0	10	90	
										G032-4	45.580317	-122.745252	7627301.86	705658.90	-7.1	26	87	Silt (ML). 10 YR 3/2. Sand is very fine. Very soft, wet. Under surface veneer, color is 10 YR 3/1. Small reflective particles in silt (mica, metallic?). Fine wood fibers throughout.	0	10	90	
33	Primary	Intermediate	G033	Power Grab	45.580028	-122.748801	7626390.72	705578.60	3	G033-1	45.580022	-122.748787	7626394.08	705576.48	-23.7	28	93	Silty sand (SM). Sand is very fine and poorly graded. Very soft, wet. 10 YR 3/2 at surface and 10 YR 3/1 below surface layer. At 10 cm becomes moist. Trace wood debris throughout.	0	60	40	
										G033-2	45.580029	-122.748813	7626387.53	705579.07	-24.4	27	90	Silty sand (SM). Sand is very fine and poorly graded. Very soft, wet. 10 YR 3/2 at surface and 10 YR 3/1 below surface layer. At 10 cm becomes moist. Trace wood debris throughout.	0	60	40	
										G033-3	45.580032	-122.748802	7626390.55	705580.25	-23.9	23	77	Silty sand (SM) at surface, then sandy silt below (ML). 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. Trace wood debris throughout. Sheen in small blebs (<0.5 cm).	0	60	40	
34	Primary	Intermediate	G034	Power Grab	45.580009	-122.748198	7626544.91	705567.48	3	G034-1	45.579998	-122.74821	7626541.72	705563.58	-27.5	29	97	Silt (ML). 10 YR 3/2. Very soft, wet. Under surface, color is 10 YR 3/1. No noted organic material or evidence of biological activity.	0	10	90	
										G034-2	45.580011	-122.74818	7626549.33	705568.31	-27.7	29	97	Silt (ML). 10 YR 3/2. Very soft, wet. Under surface, color is 10 YR 3/1. No noted organic material or evidence of biological activity.	0	12	88	
										G034-3	45.580017	-122.748203	7626543.67	705570.54	-27.2	30	100	Silt (ML). 10 YR 3/2. Very soft, wet. Under surface, color is 10 YR 3/1. No evidence of biological activity. Minimal wood debris (< 2 cm diameter).	0	12	88	

Station Cell	Station Type (Primary or Step-out)	Region (Shallow or Intermediate)	Grab Sample Location ID	Sampling Method	Centroid Coordinates ^a				Total Number of Attempts	Discrete Grab Sub-Sample Location ID	Actual Coordinates ^a				Surface Elevation ^b (ft NAVD 88)	Recovery		Description	Grain Size Distribution		
					Latitude	Longitude	Easting	Northing			Latitude	Longitude	Easting	Northing		(cm)	(%)		G (%)	S (%)	F (%)
35	Primary	Intermediate	G035	Power Grab	45.579988	-122.74761	7626695.17	705555.57	3	G035-1	45.579981	-122.747633	7626689.20	705553.16	-25.2	30	100	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Very soft, wet. Sand is fine grained. No evidence of biological activity. Very little wood debris.	0	10	90
										G035-2	45.57998	-122.747586	7626701.09	705552.78	-25.1	30	100	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity.	0	10	90
										G035-3	45.580002	-122.74761	7626695.23	705560.78	-25.1	29	97	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity.	0	10	90
36	Primary	Intermediate	G036	Power Grab	45.579981	-122.747023	7626845.15	705548.83	3	G036-1	45.579967	-122.74704	7626840.68	705544.03	-25.2	30.5	102	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity. Trace wood debris throughout.	0	10	90
										G036-2	45.579999	-122.747035	7626842.34	705555.55	-25.3	28	93	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No wood debris or evidence of biological activity.	0	10	90
										G036-3	45.579976	-122.746995	7626852.42	705546.90	-25.3	24	80	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No wood debris or evidence of biological activity. A few small blebs of sheen (<2 mm).	0	10	90
37	Primary	Intermediate	G037	Power Grab	45.579937	-122.74644	7626994.03	705528.90	3	G037-1	45.579952	-122.746441	7626993.87	705534.24	-25.3	30	100	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity. Trace wood debris.	0	10	90
										G037-2	45.57993	-122.746413	7627000.83	705526.02	-24.9	28	93	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity. Trace wood debris.	0	10	90
										G037-3	45.57993	-122.746466	7626987.39	705526.43	-25.4	24	80	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity.	0	10	90
38	Primary	Intermediate	G038	Power Grab	45.579902	-122.745876	7627137.91	705512.09	3	G038-1	45.579911	-122.745858	7627142.79	705514.98	-13.6	30	100	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity or wood debris.	0	10	90
										G038-2	45.57991	-122.745899	7627132.32	705514.93	-14.7	30	100	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity or wood debris.	0	10	90
										G038-3	45.579887	-122.745873	7627138.62	705506.35	-13.7	30	100	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity or wood debris.	0	10	90
39	Primary	Intermediate	G039	Power Grab	45.57989	-122.745278	7627290.86	705503.27	3	G039-1	45.579898	-122.74526	7627295.54	705506.04	-3.7	29	97	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is fine grained and poorly graded. Very soft, wet. No evidence of biological activity or organic debris.	0	8	92
										G039-2	45.579872	-122.745279	7627290.55	705496.91	-3.8	29	97	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is very fine grained and poorly graded. Very soft, wet. No evidence of biological activity or organic debris. There are several light colored particles in the silt that sparkle (mica, metallic?).	0	8	92
										G039-3	45.579899	-122.745296	7627286.50	705506.86	-4.6	25	83	Silt (ML). 10 YR 3/2. Under surface, color is 10 YR 3/1. Sand is very fine grained and poorly graded. Very soft, wet. Silt changed from very soft to soft approximately 15 cm down.	0	10	90
40	Primary	Intermediate	G040	Power Grab	45.579637	-122.748815	7626383.02	705436.39	4	G040-1	45.57962	-122.748836	7626377.60	705430.31	-39.7	23	77	Silt at surface (ML). 10 YR 3/2. Very soft, wet. Below is silty sand (SM). Gley 1 2.5/N. Very loose, moist. Sand is medium grained and poorly graded. No wood debris or evidence of biological activity.	10	70	30
										G040-3	45.57965	-122.748798	7626387.62	705441.12	-38.3	26	87	(0-13 cm): SILT (ML), 10 YR 3/2. Very soft, wet. (13-26 cm): Poorly graded sand (SP). Gley 1 2.5/N. Sand is medium and has salt & pepper coloration. Loose, moist. Small (<0.5 cm) blebs of sheen.	0	50	50
										G040-4	45.579641	-122.748812	7626383.84	705437.73	-38.9	25	83	Silty sand (SM). Gley 1 2.5/N. Sand is medium grained and poorly graded. Very soft, wet. Small (<0.5 cm) blebs of sheen.	0	60	40
41	Primary	Intermediate	G041	Power Grab	45.579605	-122.748275	7626521.08	705420.93	9	G041-2	45.579619	-122.748272	7626521.95	705425.84	-33.4	27	90	Silt (ML). 10 YR 3/2. Very soft, wet. Little blebs of sheen and wood debris throughout.	0	10	90
										G041-6	45.579584	-122.748284	7626518.45	705413.34	-33.4	23	77	Silt (ML). 10 YR 3/2. Very soft, wet. Wood debris throughout. Sheen as small blebs (<0.5 cm).	0	10	90
42	Primary	Intermediate	G042	Power Grab	45.579549	-122.747857	7626627.31	705397.41	3	G042-1	45.579561	-122.747847	7626627.91	705392.73	-28.6	29	97	Silt (ML). 10 YR 3/2. Below surface, color is 10 YR 3/1. Very soft, wet. Wood debris and trace gravel throughout. Small blebs of sheen throughout.	2	12	86
										G042-2	45.579536	-122.747855	7626623.87	705397.88	-29.2	26	87	Silt (ML) at surface. 10 YR 3/2. Very soft, wet. (Below surface to 15 cm): poorly graded sand (SP). Gley 1 2.5/N. Loose, wet. (15 to 26 cm): Sandy silt (ML). 10 YR 3/2. Very soft, wet. Trace gravel, wood debris and shell fragments throughout, although more concentrated in sand portion.	0	30	70
										G042-3	45.57955	-122.747871	7626835.96	705422.58	-29.2	26	87	(0-10 cm): Silt (ML (0% gravel, 10% sand, 90% fines)). 10 YR 3/2. Very soft, wet. (10 to 26 cm): Silty sand (SM (0% gravel, 85% sand, 15% fines)). 10 YR 3/1. Medium grained sand. Loose, wet. Trace wood debris and gravel throughout.	0	35	65
43	Primary	Intermediate	G043	Power Grab	45.579639	-122.747044	7626836.38	705424.59	4	G043-2	45.579634	-122.747046	7626835.96	705422.58	-20.8	30	100	Silt (ML). 10 YR 3/2. Very soft, wet. No observed debris or evidence of biological activity.	0	10	90
										G043-3	45.579641	-122.747055	7626833.52	705425.25	-21.0	29	97	Silt (ML). 10 YR 3/2. Below surficial layer, color is 10 YR 3/1. Sand is fine and well sorted. Very soft, wet. No wood debris or evidence of biological activity.	0	10	90
										G043-4	45.579643	-122.747032	7626839.67	705425.95	-20.9	29	97	Silt (ML). 10 YR 3/2. Below surficial layer, color is 10 YR 3/1. Sand is fine and well sorted. Very soft, wet. No wood debris or evidence of biological activity.	0	10	90
44	Primary	Intermediate	G044	Power Grab	45.579555	-122.746464	7626983.95	705389.77	3	G044-1	45.579537	-122.74647	7626982.38	705383.11	-14.9	26	87	Silt (ML): 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. No organic debris or evidence of biological activity.	0	10	90
										G044-2	45.579573	-122.746488	7626978.07	705396.44	-16.2	28	93	Silt (ML): 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. No wood debris or evidence of biological activity.	0	10	90
										G044-3	45.579556	-122.746435	7626991.39	705389.77	-14.6	29	97	Silt (ML): 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. No wood debris or evidence of biological activity.	0	10	90
45	Primary	Intermediate	G045	Power Grab	45.579524	-122.745897	7627128.92	705374.39	5	G045-2	45.579505	-122.745902	7627127.43	705367.54	-2.5	27	90	Silt (ML): 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. Trace shell fragments. No wood or other debris noted.	0	10	90
										G045-4	45.579528	-122.745911	7627125.35	705375.77	-3.2	20	67	Silt (ML): 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. Some wood debris throughout.	0	10	90
										G045-5	45.579539	-122.745877	7627133.98	705379.85	-3.2	25	83	Silt (ML): 10 YR 3/2 at surface and 10 YR 3/1 below. Very soft, wet. Trace small wood debris throughout. Silt is moist and blocky at bottom of sample.	0	10	90

Station Cell	Station Type (Primary or Step-out)	Region (Shallow or Intermediate)	Grab Sample Location ID	Sampling Method	Centroid Coordinates ^a				Total Number of Attempts	Discrete Grab Sub-Sample Location ID	Actual Coordinates ^a				Surface Elevation ^b		Recovery		Description	Grain Size Distribution		
					Latitude	Longitude	Easting	Northing			Latitude	Longitude	Easting	Northing	(ft NAVD 88)	(cm)	(%)	G (%)		S (%)	F (%)	
46	Primary	Intermediate	G046	Power Grab	45.57919	-122.748252	7626522.71	705269.33	4	G046-2	45.579197	-122.748243	7626525.11	705271.93	-39.4	26	87	(0-1 cm): Silt (ML). 10 YR 3/2. Very soft, wet. Clam shell at surface. Below is a mix of sand and silt lenses as follows. Poorly graded sand (SP). Gley 1 2.5/N (salt and pepper coloration). Medium grained, loose, wet. Sandy silt (ML). 10 YR 3/2. Loose, wet. Trace shell and wood debris throughout.	0	60	40	
										G046-3	45.579188	-122.748244	7626524.82	705268.75	-39.3	24	80	(0-1 cm): Silt (ML). 10 YR 3/2. Very soft, wet. Clam shell at surface. Below is a mix of sand and silt lenses as follows. Poorly graded sand (SP). Gley 1 2.5/N (salt and pepper coloration). Medium grained, loose, wet. Sandy silt (ML). 10 YR 3/2. Loose, wet. Similar to attempt #2, but less wood debris and shell fragments.	0	65	35	
										G046-4	45.579184	-122.748269	7626518.21	705267.32	-39.6	26	87	(0-2 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (2 - 10 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium sand. Loose, wet. (10-20 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (20 - 26 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium sand. Loose, wet. Shell fragments observed in both sand layers.	0	60	40	
47	Primary	Intermediate	G047	No acceptable samples collected																		
48	Primary	Intermediate	G048	Power Grab	45.578806	-122.748876	7626359.09	705133.92	3	G048-1	45.5788	-122.748887	7626356.17	705131.67	-38.2	26	87	(0-15 cm): Sandy silt(ML). 10 YR 3/2. Very soft, wet.(16-26 cm): Poorly graded sand (SP). Gley 1 2.5/N (Black). Medium grained sand. Loose, wet. Small blebs of sheen <0.5 cm.	0	60	40	
										G048-2	45.578815	-122.748871	7626360.53	705137.02	-38.7	25	83	(0-2 cm): Silt (ML (0% Gravel, 10% sand, 90% fines)). 10 YR 3/2. Very soft, wet. Very fluffy. (2 - 20 cm): Sandy silt (ML). 10 YR 3/1. Soft, wet. (20-25 cm): Poorly graded sand (SP). Gley 1 2.5/N (black). Medium grained. Loose, wet. Many small blebs of sheen (<0.5 cm).	0	20	80	
										G048-3	45.578804	-122.74887	7626360.56	705133.06	-38.4	27	90	Silt (ML) at surface. 10 YR 3/2. Soft, wet. Fluffy. Under surface is sand silt (ML). 10 YR 3/1. Sand is fine to medium. Soft, wet. (25-27 cm): Poorly graded sand (SP). Black. Medium grained. Loose, wet.	0	20	80	
49	Primary	Intermediate	G049	Power Grab	45.578779	-122.748234	7626523.18	705119.39	5	G049-2	45.578778	-122.748227	7626525.01	705118.94	-40.4	24	80	(Top < 1 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (1 - 24 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained with trace rounded gravels throughout. Loose, wet.	0	95	5	
										G049-4	45.578767	-122.748229	7626524.26	705115.07	-40.5	27	90	(Top < 1 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (1 - 27 cm): Poorly graded sand (SP (%100 sand)). Gley 1 2.5/N (salt and pepper coloration). Medium grained. Very loose, wet. Trace rounded gravel fragments and shell fragments throughout (quartz, agate?).	0	95	5	
										G049-5	45.578792	-122.748246	7626520.27	705124.17	-40.4	23	77	(Top < 1 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (1 - 23 cm): Poorly graded sand (SP (%100 sand)). Gley 1 2.5/N (salt and pepper coloration). Medium grained. Very loose, wet. Trace small rounded gravel throughout (quartz, agate?).	0	95	5	
50	Primary	Intermediate	G050	Power Grab	45.578331	-122.747756	7626641.05	704952.75	6	G050-1	45.578343	-122.747743	7626644.26	704957.07	-40.2	22	73	(0-1 cm): Silt (ML). 10 YR 3/2. Soft, wet. (1 - 22 cm): Poorly graded sand (SP (%100 sand)). Gley 1 2.5/N. Medium grained. Very loose, wet. A few clam shells and shell debris noted in the top 10 cm of sample. A few small agates throughout the sand layer. In the sand is an approximate 8 cm layer that appears oxidized (rust colored).	<1	95	5	
										G050-3	45.578326	-122.747772	7626636.70	704951.23	-39.9	21	70	(0-1 cm): Silt (ML). 10 YR 3/2. Soft, wet. (1 - 12 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Loose, wet. From 12 to 21 cm the sand appears stratified and oxidized, 5 YR 3/3 (rust colored).	5	90	5	
										G050-6	45.578323	-122.747751	7626642.20	704949.95	-39.8	20	67	(0-1 cm): Silt (ML). 10 YR 3/2. Soft, wet. (1 - 22 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Loose, wet. From 12 to 21 cm the sand appears stratified with alternating black (Gley1 2.5/N) and 5 YR 3/3 (rust colored) layers. Some subrounded gravel throughout.	5	90	5	
51	Primary	Intermediate	G051	Power Grab	45.578244	-122.747342	7626746.07	704918.30	9	G051-1	45.578236	-122.747303	7626755.93	704914.85	-39.9	24	80	Thin veneer of Silt (ML) at surface. 10 YR 3/2. Soft, wet. Remainder of sample is poorly graded sand (SP). Gley 1 2.5/N (black) mottled with 5 YR 3/3 (rust colored). Medium grained. Loose, wet. Some small subrounded gravels throughout (agate).	5	90	5	
										G051-5	45.57828	-122.747353	7626743.44	704931.45	-40.3	24	80	(0 -2 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (2 - 24 cm): poorly graded sand (SP). Gley 1 2.5/N (black) with stratified layers of brown sand (5 YR 3/3). Medium grained. Loose, wet. 2 cm bleb of sheen noted in sample.	0	90	10	
										G051-9	45.578217	-122.747369	7626738.83	704908.60	-39.8	22	73	(0-2 cm): Sandy silt (ML). 10 YR 3/2. Very soft, wet. (2-22 cm): Poorly graded sand (SP). Gley 1 2.5/N with lenses of 5 YR 3/3. Medium grained. Loose, wet.	3	82	15	
52	Primary	Intermediate	G052	Power Grab	45.577864	-122.74657	7626939.83	704774.31	9	G052-2	45.577859	-122.746589	7626934.91	704772.57	-41.5	21	70	(0-3 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (3-21 cm): Poorly graded sand (SP: 100% sand). Gley 1 2.5/N (black). Coarse-grained sand. Loose, wet. Wood fragments present throughout sand. Very few shell fragments noted in sand.	<1	90	10	
										G052-6	45.577868	-122.746558	7626942.86	704775.67	-40.7	21	70	Thin veneer of silt (ML) at surface. 10 YR 3/2. Very soft, wet. Below is portly graded sand (SP). Gley 1 2.5/N (black). Coarse grained. Very soft, wet. At very bottom of sampler, sand is the same consistency but brown. Some wood debris throughout.	0	95	5	
53	Step-Out	Shallow	G053	Hand	45.583308	-122.756674	7624409.10	706830.28	3	G053_1	45.583311	-122.756687	7624405.74	706831.56	7.3	20	67	Well graded sand with silt and gravel (SW-SM). 2.5Y 3/1. Medium to coarse sand. Medium dense, wet. Sand appears volcanic. Some wood fibers and debris. Alluvium.	15	75	10	
										G053_2	45.583301	-122.756665	7624411.41	706827.83	7.0	20	67	Poorly graded sand with silt and gravel (SP-SM). 2.5Y 3/2. Medium to coarse sand, subrounded to subangular. Medium dense, wet. Sand appears volcanic. Gravel are fine to medium, subrounded to subangular. Trace fine wood debris. Thin (2 cm) layer of dark gray silty sand within sample. Alluvium.	20	70	10	
										G053_3	45.583311	-122.75667	7624410.16	706831.44	7.1	21	70	Poorly graded sand with silt and gravel (SP-SM). 10 YR 3/3. Medium to coarse subrounded sand. Medium dense, damp. Sand appears volcanic. Gravel are fine to medium and subrounded to well rounded and bright orange. Thin gray silt layer (approx. 1 cm) within sample. Alluvium.	20	70	10	
54	Primary	Intermediate		No acceptable samples collected																		
55	Step-Out	Shallow	G055	Power Grab	45.581915	-122.754576	7624931.79	706307.67	9	G055-1	45.581902	-122.75453	7624943.42	706302.83	-22.0	20	67	Poorly graded sand (SP). 7/5 YR 2.5/1. Medium to fine sand, subrounded, volcanic. Loose, wet. 2 % scattered silt inclusions (10 YR 3/2). Some organic wood debris, sticks and leaves. Alluvium.	0	98	2	
										G055-8	45.581918	-122.754612	7624922.57	706309.00	-22.1	20	67	Silty sand (SM). 7.5 YR 3/1. Medium sand. Very loose, wet. Silt clasts throughout and fine silt layer at surface (10 YR 4/6). Alluvium.	0	85	15	
										G055-9	45.581924	-122.754586	7624929.39	706311.18	-21.7	23	77	(0-1 cm): Silt (ML). 10 YR 4/6. (1-23 cm): Poorly graded sand (SP). 7/5 YR 2.5/1. Medium sand, subrounded, multicolored clasts. Volcanic. Loose, wet. Some white fibers in sand, like from clothing or nylon rope.	0	99	1	
56	Step-Out	Intermediate	G056	Power Grab	45.582309	-122.756353	7624481.12	706464.17	9	G056-3	45.582301	-122.756361	7624478.96	706461.23	-38.2	23	77	Silt at surface (ML). 10 YR 3/2. Very soft, wet. Then silty sand (SM). 10 YR 3/2. Medium sand. Loose, wet. No gravel, wood debris, or evidence of biological activity.	0	30	70	
										G056-5	45.582312	-122.756355	7624480.65	706465.07	-37.6	22	73	Sandy silt at surface (ML). 10 YR 3/2. Very soft, wet. Below is poorly graded sand with silt (10% silt, 90% sand). 10 YR 3/2. Medium grained sand. Loose, wet.	0	50	50	
										G056-9	45.582313	-122.756344	7624483.27	706465.26	-37.1	21	70	(0-3 cm) Silt (ML). 10 YR 3/2. Very soft, wet. (3-21 cm): Sandy Silt (ML). 10 YR 3/1. Soft, wet.	0	40	60	

Station Cell	Station Type (Primary or Step-out)	Region (Shallow or Intermediate)	Grab Sample Location ID	Sampling Method	Centroid Coordinates ^a				Total Number of Attempts	Discrete Grab Sub-Sample Location ID	Actual Coordinates ^a				Surface Elevation ^b (ft NAVD 88)	Recovery		Description	Grain Size Distribution		
					Latitude	Longitude	Easting	Northing			Latitude	Longitude	Easting	Northing		(cm)	(%)		G (%)	S (%)	F (%)
57	Step-Out	Intermediate			No acceptable samples collected																
58	Step-Out	Intermediate	G058	Power Grab	45.581767	-122.755392	7624721.44	706259.75	7	G058-5	45.581773	-122.755319	7624725.04	706259.99	-39.0	23	77	Poorly graded sand (SP). 5 YR 2.5/1. Medium to coarse sand. Sand appears variegated/ multi-colored. Loose, damp. Silt rip-up clasts throughout (7.5 YR 3/1). Alluvium.	0	100	0
										G058-6	45.581759	-122.755394	7624720.83	706256.88	-39.1	20	67	(0-3 cm): Silt (ML). 2.5 Y 3/3. Soft, wet. (3-20 cm): Poorly graded sand (SP). 2.5 YR 2.5/1. Medium to coarse sand, variegated/multicolored, volcanic. Loose, damp. Alluvium.	0	90	0
										G058-7	45.581774	-122.755404	7624718.46	706262.37	-39.1	22	73	(0-5 cm): Sandy Silt (ML). 7.5 YR 4/1. Soft, wet. (5-22 cm): Poorly graded sand (SP). 2.5 YR 2.5/1. Medium to coarse sand, appears variegated/multicolored, volcanic. Trace subangular gravel. Loose, damp. Alluvium.	1	90	9
59	Step-Out	Shallow	G059	Power Grab	45.581344	-122.753407	7625225.17	706091.44	8	G059-4	45.581339	-122.753384	7625231.02	706089.19	-30.1	21	70	(0 - 0.5 cm): Silt (ML). 10 YR 3/2 (brown). (0.5 to 10 cm): Poorly graded sand (SP). 10 YR 3/2. Medium grained. Loose, moist. (10-21 cm): Same sand as above with color change to gray (7.5 YR 2.5/1. Some variegation. Alluvium.	0	95	5
										G059-6	45.581349	-122.75343	7625219.31	706093.19	-29.5	20	67	(0 - 1 cm): Silt (ML). 10 YR 3/2 (brown). (1 to 10 cm): Poorly graded sand (SP). 10 YR 3/2. Medium grained. Loose, moist. (10-20 cm): Same sand as above with color change to gray (7.5 YR 2.5/1). Some variegation. Alluvium.	0	95	5
										G059-8	45.581345	-122.753408	7625224.99	706091.76	-29.9	20	67	(0 - 1 cm): Silt (ML). 10 YR 3/2 (brown). (1 to 10 cm): Poorly graded sand (SP). 10 YR 3/2. Medium grained. Loose, moist. (10-20 cm): Same sand as above with color change to gray (7.5 YR 2.5/1). Some variegation. Alluvium.	0	95	5
60	Step-Out	Shallow	G060	Power Grab	45.581309	-122.752859	7625365.12	706074.77	9	G060-6	45.58131	-122.75285	7625367.40	706074.97	-23.8	20	67	Poorly graded sand with silt (SP-SM). 2.5 Y 3/2. Medium to coarse, multicolored grains, subrounded to subangular and volcanic in appearance. Dense, wet. Some organic debris and trace gravel. Alluvium.	0	90	10
										G060-7	45.581305	-122.752861	7625364.50	706073.18	-24.4	20	67	Poorly graded sand (SP). 10 YR 3/2. Fine to medium sand. Multicolored, subrounded to subangular grains, volcanic in appearance. Medium dense, wet. Trace red, rounded gravels. Alluvium.	0	95	5
										G060-9	45.581313	-122.752866	7625363.46	706076.15	-23.9	20	67	Well graded sand (SW). 10 YR 3/1. Fine to coarse, subrounded, multicolored, grains. Volcanic in appearance. Medium dense, wet.	0	95	5
61	Step-Out	Shallow			No acceptable samples collected																
62	Step-Out	Shallow			No acceptable samples collected																
63	Step-Out	Shallow	G063	Power Grab	45.580913	-122.751125	7625804.95	705918.02	3	G063-1	45.580918	-122.751118	7625806.78	705919.73	-16.7	30	100	Silt with sand (ML). 2.5 Y 2.5/1. Slow dilatency. Sand is fine. Soft, wet. Significant wood debris in first 5 cm (fibers and sticks). Sheen in wood debris, no odor. Alluvium.	0	20	80
										G063-2	45.580917	-122.751135	7625802.43	705919.37	-17.3	25	83	Silt with sand (ML). 2.5 Y 2.5/1. Slow dilatency. Sand is fine. Soft, wet. Significant wood debris in first 5 cm (fibers and sticks). Sheen and petroleum like odor. Alluvium.	0	20	80
										G063-3	45.580905	-122.751122	7625805.64	705914.97	-18.0	27	90	Silt (ML). 2.5 Y 2.5/1. Slow dilatency. Sand is fine. Soft, wet. Significant wood debris (fibers and sticks). Slight sheen, no odor. Alluvium.	0	10	90
64	Step-Out	Shallow	G064	Power Grab	45.580784	-122.750554	7625949.64	705866.76	3	G064-1	45.58079	-122.750564	7625947.13	705869.14	-16.6	27	90	(0 -1 cm): Silt (ML). Very soft, wet. (1- 27 cm): Silt with sand (ML). 2.5 Y 2.5/1. Slow dilatency. Sand is fine. Soft, wet. Significant wood debris. Alluvium.	0	20	80
										G064-2	45.580776	-122.750558	7625948.64	705863.77	-17.2	28	93	(0-1 cm): Silt (ML). 10 YR 3/6. Very soft, wet. (1-28 cm): Sandy silt (ML). 2.5 Y 2.5/1. Slow dilatency. Sand is fine. Soft, wet. Significant wood debris. Alluvium.	0	35	65
										G064-3	45.580786	-122.750541	7625953.15	705867.38	-16.5	22	73	(0-0.5 cm): Silt (ML). 2.5 Y 4/2. Very soft, wet. (0.5 - 22 cm): Sandy silt (ML). 2.5 Y 3/1. Slow dilatency. Sand is fine. Soft to firm, wet. Significant wood debris. Alluvium.	0	35	65
65	Step-Out	Shallow	G065	Power Grab	45.580633	-122.750024	7626083.76	705808.09	3	G065-1	45.580645	-122.750022	7626084.38	705812.42	-13.2	30	100	(0 -1 cm): Silt (ML). Very soft, wet. (1-30 cm): Sandy silt (ML). 2.5 Y 2.5/1. Fine sand. Slow dilatency. Soft to stiff, wet. Alluvium.	0	40	60
										G065-2	45.580627	-122.750012	7626086.79	705805.84	-13.3	30	100	(0 -3 cm): Silt (ML). Very soft, wet. Some organic debris. (3-30 cm): Sandy silt (ML). 2.5 Y 2.5/1. Fine sand. Slow dilatency. Stiff, wet. Alluvium.	0	40	60
										G065-3	45.580627	-122.750038	7626080.11	705806.01	-13.4	22	73	(0 -7 cm): Silt (ML).2.5Y 3/3. Very soft, wet. (7-22 cm): Sandy silt (ML). 2.5 Y 3/1. Fine sand. Slow dilatency. Stiff, wet. Alluvium.	0	40	60
66	Step-Out	Shallow	G066	Power Grab	45.580459	-122.749238	7626283.15	705738.88	3	G066-1	45.580453	-122.749221	7626287.58	705736.49	-11.2	28	93	Sandy Silt (ML). 10 YR 3/2 at surface and 10 YR 3/1 below surface. Very soft, wet. Some very tiny shiny fragments, possibly shell fragments. One small (<0.5 cm) bleb of sheen at surface.	0	10	90
										G066-2	45.580451	-122.749246	7626281.08	705736.18	-11.3	30	100	Sandy Silt (ML). 10 YR 3/2 at surface and 10 YR 3/1 below surface. Sand is very fine and poorly graded. Very soft, wet.	0	10	90
										G066-3	45.580473	-122.749248	7626280.78	705743.97	-10.9	28	93	Sandy Silt (ML). 10 YR 3/2 at surface and 10 YR 3/1 below surface. Sand is very fine and poorly graded. Very soft, wet. Tiny blebs of sheen (<0.5 cm).	0	10	90
67	Step-Out	Intermediate	G067	Power Grab	45.580034	-122.749263	7626272.52	705584.39	4	G067-1	45.580042	-122.749271	7626270.64	705587.20	-33.2	25	83	Sandy silt (ML) . 10 YR 3/2 at surface and 10 YR 3/1 below the surface. Sand is fine to medium grained and well sorted. Very loose, wet. At approximately 10 cm down, becomes moist. Trace pieces of small wood fibers throughout. Petroleum like odor. Small sheen blebs (<1 cm).	0	25	75
										G067-3	45.580032	-122.749265	7626272.00	705583.44	-33.2	25	83	Silty sand (SM). Sand is fine to medium grained. Very loose, wet. Toward bottom of sampler, there is more silt (very soft, moist). From approximately 5 - 10 cm below surface are shell fragments. Trace wood debris throughout. No odor, small (<0.5 cm) blebs of sheen).	0	60	40
										G067-4	45.58003	-122.749253	7626274.93	705582.54	-34.0	27	90	Sandy silt (ML) . 10 YR 3/2 at surface and 10 Yr. 3/1 below the surface. Sand is fine to medium grained and well sorted. Very loose, wet. At approximately 15 cm down, becomes moist. Trace pieces of small wood fibers throughout. Sheen observed in small blebs throughout.	0	40	60
		S067	Sonic	NA					S067	45.580081	-122.749264	7626272.72	705601.44	NA							
68	Step-Out	Intermediate	G068	Power Grab	45.579629	-122.749318	7626254.37	705436.94	5	G068-2	45.579612	-122.749314	7626255.28	705430.68	-40.9	21	70	(0-5 cm): Silt (ML). 10 YR 3/2. Soft, wet. (5-21 cm): Poorly graded sand (SP: 100% sand). Black and white (salt and pepper coloration). Sand is medium grained. Loose, moist.	0	80	20
										G068-3	45.579632	-122.749311	7626256.02	705437.93	-40.7	26	87	(0-8 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (8-21 cm): Poorly graded sand (SP: 100% sand). Black, white and red sand (overall coloration is Gley 1 2.5/N). Sand is medium grained. Very loose, moist. One 2.5 cm clam shell at surface.	0	70	30
										G068-5	45.579643	-122.749328	7626251.82	705442.21	-40.6	20	67	(0-5 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (5-20 cm): Poorly graded sand (SP). Gley 1 2.5/N (black and white). Sand is medium grained. Very loose, moist.	0	80	20

Station Cell	Station Type (Primary or Step-out)	Region (Shallow or Intermediate)	Grab Sample Location ID	Sampling Method	Centroid Coordinates ^a				Total Number of Attempts	Discrete Grab Sub-Sample Location ID	Actual Coordinates ^a				Surface Elevation ^b (ft NAVD 88)	Recovery		Description	Grain Size Distribution		
					Latitude	Longitude	Easting	Northing			Latitude	Longitude	Easting	Northing		(cm)	(%)		G (%)	S (%)	F (%)
69	Step-Out	Intermediate	G069	Power Grab	45.579185	-122.748745	7626396.34	7052711.28	3	G069-1	45.579198	-122.748747	7626396.00	705275.93	-40.6	21	70	(0-1 cm): Silt (ML). 10 YR 3/2. Soft (fluffy), wet. (1-21 cm): Poorly graded sand (SP). Salt and pepper colored (Gley 1 2.5/N). Medium grained with occasional gravel and agate. Very loose, wet. Trace wood debris noted. Tiny sheen spots (1-2 mm).	3	92	5
										G069-2	45.579172	-122.748739	7626397.99	705266.26	-40.6	22	73	(0-2 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (2-22 cm): Poorly graded sand (SP). Salt and pepper colored (Gley 1 2.5/N). Medium sand, trace gravel. Very loose, wet. Tiny (3 mm) sheen blebs.	3	92	5
										G069-3	45.579186	-122.748751	7626395.03	705271.66	-40.6	24	80	(0-1 cm): Silt (ML). 10 YR 3/2.Very soft, wet. (1-24 cm): Poorly graded sand (SP). Salt and pepper colored (Gley 1 2.5/N). Medium sand. Very loose, wet. Trace organic material. Tiny (2 mm) sheen blebs.	0	95	5
70	Step-Out	Intermediate	G070	Power Grab	45.578832	-122.749356	7626236.48	705146.92	3	G070-1	45.578824	-122.749355	7626236.75	705143.85	-38.5	26	87	Thin veneer (<0.5 cm) of silt at surface (ML). 10 YR 3/2. Below is poorly graded sand (SP). Gley 1 2.5/N. Sand is black with some lighter grains. Medium grained. Very loose, wet.	0	95	5
										G070-2	45.578837	-122.749348	7626238.57	705148.44	-38.5	25	83	Thin veneer (<0.5 cm) of silt at surface (ML). 10 YR 3/2. Below is poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Very loose, wet.	0	95	5
										G070-3	45.578836	-122.749365	7626234.12	705148.47	-38.5	30	100	(0-1 cm): Silt (ML). 10 YR 3/2. Soft, wet. (1-30 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained. Very loose, wet.	0	95	5
71	Step-Out	Intermediate	G071	Power Grab	45.578758	-122.74771	7626657.12	705107.99	5	G071-2	45.578743	-122.747735	7626650.55	705102.75	-39.8	20	67	Thin veneer (< 1 cm) of silt (ML) at surface. 10 YR 3/2. Very soft, wet. Below is poorly graded sand (SP). Gley 1 2.5/N. Sand is medium to coarse grained. Some subrounded gravel throughout - quartz agate or possibly quartzite. Loose, wet. White shells observed to total depth of 20 cm.	3	92	5
										G071-3	45.578773	-122.747704	7626658.70	705113.60	-39.6	22	73	Thin veneer (< 1 cm) of silt (ML) at surface. 10 YR 3/2. Very soft, wet. Below is poorly graded sand (SP). Gley 1 2.5/N (salt and pepper) . Sand is medium to coarse grained. Some subrounded gravel throughout - yellow and white in color. Loose, wet. Clams and shell fragments observed throughout top 10 cm of sandy interval.	8	88	4
										G071-5	45.578757	-122.74769	7626662.10	705107.62	-39.4	20	67	Thin veneer (< 1 cm) of silt (ML) at surface. 10 YR 3/2. Soft, wet. Below is poorly graded sand (SP). Gley 1 2.5/N (salt and pepper) . Sand is coarse grained. Some small rounded to subrounded gravel. Loose, wet. Shells and shell fragments in upper 8 to 10 cm.	15	83	2
72	Step-Out	Intermediate	G072	Power Grab	45.57843	-122.748326	7626496.17	704993.12	3	G072-1	45.578424	-122.748331	7626494.63	704990.79	-40.1	24	80	(0-3 cm): Silt (ML). 10 Yr. 3/2. Very soft, wet. (3 - 24 cm): Poorly graded sand (SP). Gley 1 2.5/N. Medium grained sand with <5% subrounded gravels. Loose, wet. Small sheen blebs noted (< 0.5 cm).	<5	85	10
										G072-2	45.578441	-122.748333	7626494.42	704997.00	-40.2	25	83	Thin veneer (< 1 cm) of silt (ML) at surface. 10 YR 3/2. Soft, wet. Below is poorly graded sand (SP). Gley 1 2.5/N. Sand is medium grained. Loose, wet. One shell noted (< 1 cm diameter).	0	95	5
										G072-3	45.578426	-122.748313	7626499.45	704991.56	-40.3	25	83	Thin veneer (< 1 cm) of silt (ML) at surface. 10 YR 3/2. Soft, wet. Below is poorly graded sand (SP). Gley 1 2.5/N (black). Sand is medium grained. Loose, wet. One sand concretion noted.	0	95	5
73	Step-Out	Intermediate	G073	Power Grab	45.577966	-122.747128	7626797.85	704815.20	9	G073-4	45.577974	-122.747118	7626800.59	704818.07	-41.2	25	83	Large chunks of silt at surface (unique from what we have seen in this area). 10 YR 4/1. Medium stiff, moist. Silt overlies poorly graded sand (SP; 95% sand, 5% gravel). Gley 1 2.5/N (black). Coarse sand. Gravel throughout. Loose, wet. Shells throughout.	5	50	45
										G073-6	45.57796	-122.747162	7626789.25	704813.18	-40.4	25	83	Thin veneer (< 0.5 cm) of silt (ML) at surface. 10 YR 3/2. Soft, wet. Below is poorly graded sand (SP; 95% sand, 5% gravel). Gley 1 2.5/N (black). Sand is coarse with rounded gravel throughout. Loose, wet. Clamshells throughout.	10	85	5
										G073-7	45.577964	-122.747106	7626803.70	704814.35	-41.5	25	83	Thin veneer (< 0.5 cm) of silt (ML) at surface. 10 YR 3/2. Soft, wet. Below is poorly graded sand (SP). Gley 1 2.5/N (black). Sand is coarse with trace gravel. Loose, wet. Shells throughout. Slight sheen.	tr	95	5
74	Primary	Intermediate	G074	Power Grab	45.581659	-122.754044	7625065.41	706210.49	7	G074-3	45.581652	-122.754047	7625064.63	706208.18	-26.1	25	83	(0-1 cm): Silt (ML). (1-21 cm): Poorly graded sand with silt (SP-SM). 7.5 YR 3/2. Sand is medium grained and appears volcanic. Loose, wet. 2.5 cm long clam noted. Alluvium.	0	90	10
										G074-5	45.581663	-122.754038	7625066.95	706212.11	-25.9	25	83	Silty sand (SM). 10 YR 3.2. Medium grained with trace gravel. Very loose, wet. Sand appears volcanic and increases with depth. Alluvium.	0	70	30
										G074-7	45.58166	-122.754047	7625064.65	706211.18	-26.0	25	83	(0-1 cm): Silt (ML). 10 YR 3/2. Very soft, wet. (1 - 18 cm): Sand with Silt (SP-SM). 7.5 YR 2.5/1. Medium grained sand with medium subrounded to subangular gravel. Percent gravel increases with depth. Very soft, wet. (18-21 cm): Silt (ML). Gley 1 2.5/N. Medium stiff, wet.	5	80	15
75	Primary	Shallow	G075	Hand	45.580598	-122.744712	7627443.11	705757.23	3	G075_1	45.580606	-122.744736	7627437.03	705760.63	10.8	25	83	Poorly graded sand (SP). 5 YR 3/2. Medium grained. Loose, moist. Trace wood debris throughout with more in top 10 cm than below.	0	100	0
										G075_2	45.580579	-122.74471	7627443.24	705750.59	10.5	25	83	Poorly graded sand (SP). 5 YR 3/2. Medium grained. Loose, moist. Trace wood debris.	0	100	0
										G075_3	45.580607	-122.744689	7627449.06	705760.46	12.2	25	83	Poorly graded sand (SP). 5 YR 3/2. Medium grained with trace small gravels. Loose, moist. Some wood debris.	0	100	0
76	Step-Out	Intermediate	G076	Sonic			NA			S076	45.580111	-122.749932	7626102.119	705617.1614	-42.431	30		NA			
S076																					
See last page of Table 2-3 for Notes.																					

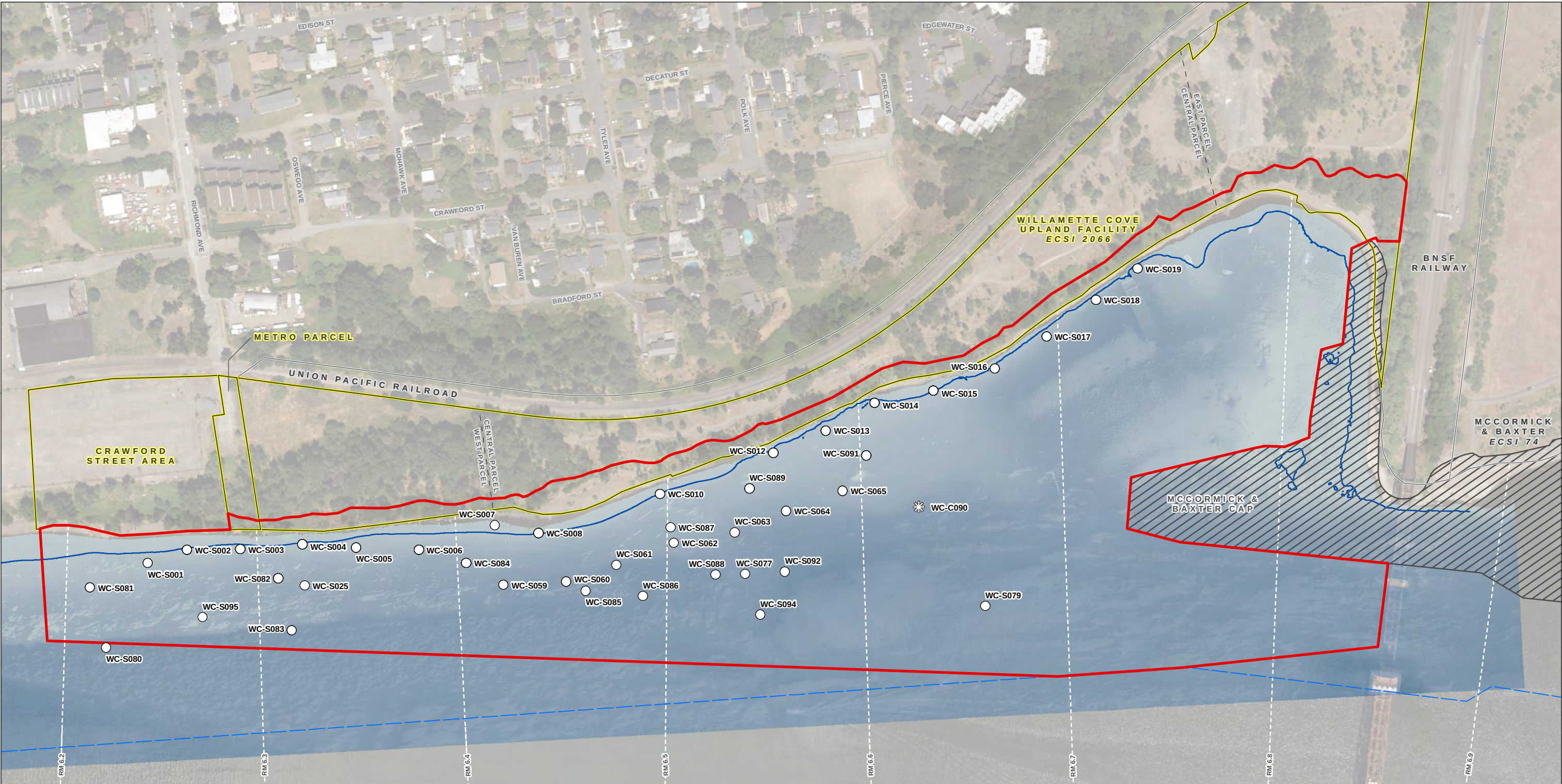
Notes

NA: Not Available

a: Coordinates are projected in NAD 1983 (2011) State Plane Oregon North FIPS 3601 (Intl Feet). Latitude and longitude values are presented in decimal degrees. Easting and Northing values are presented using international feet.

b: Surface elevations were derived from the 2020 bathymetric survey when possible. Surface elevations in the uplands were derived from a previous LiDAR survey and will be updated when a LiDAR survey of the uplands is completed in 2021.

c: A surface elevation for this location could not be derived from the bathymetric survey or LiDAR survey. Elevations should be close to 6.0 feet NAVD88.



LEGEND

Sample Method

Sonic Core

Vibracore

Bathymetry

10 feet

-66 feet

All Other Features

Project Area Boundary

Adjacent Upland Parcel

Adjacent Upland Subparcel

Upland Parcel

Capped Area

Navigation Channel

3.2 feet NAVD 88 (-2 feet CRD)

River Mile (RM)

NOTES

1. The riverward boundary of the Crawford Street Area is at ordinary low water, as defined by USACE (2017).

2. The 3.2 feet NAVD 88 (-2 feet CRD) contour is generated from 2021 site bathymetry, Solmar Hydro.

3. The Project Area boundary line adjacent to the Willamette Cove Upland Facility is based on the 2022 Supplemental Pre-Design Investigation top of bank field survey.

4. Figure includes only sample locations where analyses were conducted.

CRD: Columbia River Datum

ECSI: Environmental Cleanup Site Information

NAVD 88: North American Vertical Datum of 1988

USACE: U.S. Army Corps of Engineers

Date: October 12, 2023

Data Sources: City of Portland 2019, METRO 2022, ESRI, USACE 2014, Aerial City of Portland 2020

FIGURE 2-2

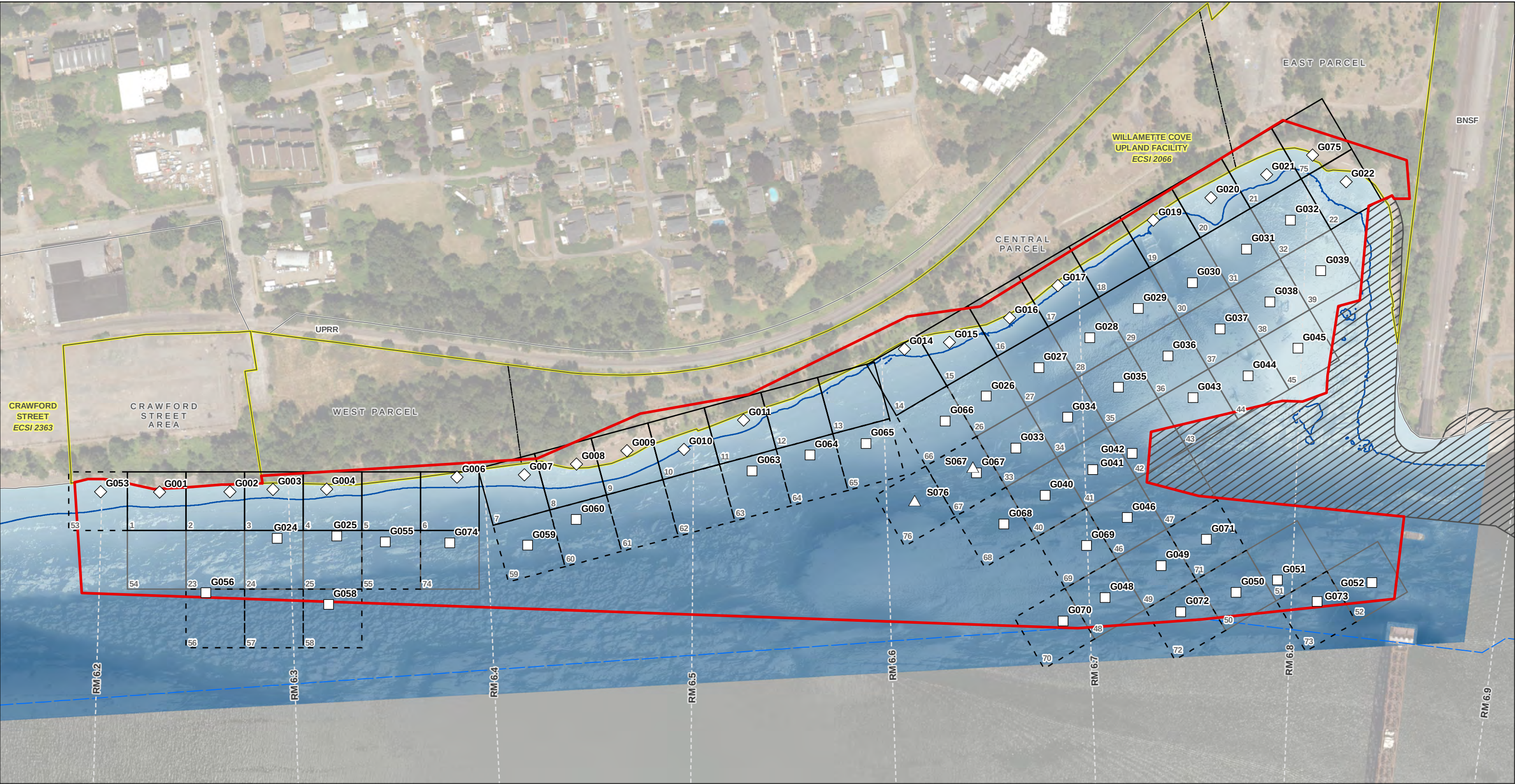
Subsurface Sediment Sampling Locations

Supplemental Pre-Design Investigation Evaluation Report

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feet

Document Path: Y:\0115_POP_WillametteCove\Source_Figures\2023\SPDI_Data_Eval_Report\Figure2-2_Subsurface_Sediment_Locs.mxd, npalmer



LEGEND

- ◇ Hand Auger/Stainless Steel Spoon Sampling Centroid
- Power Grab Centroid Location
- △ Sonic Coring Location
- Sample Cell**
- Shallow Region
- Intermediate Region
- - - Step-Out

All Other Features

- Project Area Boundary
- Upland Parcel
- Upland Subparcel
- Adjacent Parcel
- Capped Area
- Navigation Channel

- 3.2' NAVD88 (-2' CRD)
- River Mile (RM)
- Bathymetry**
- 20'
- 66'

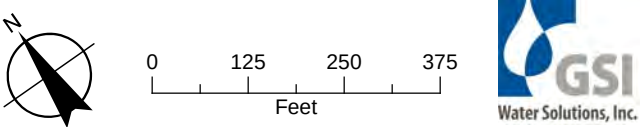
NOTES

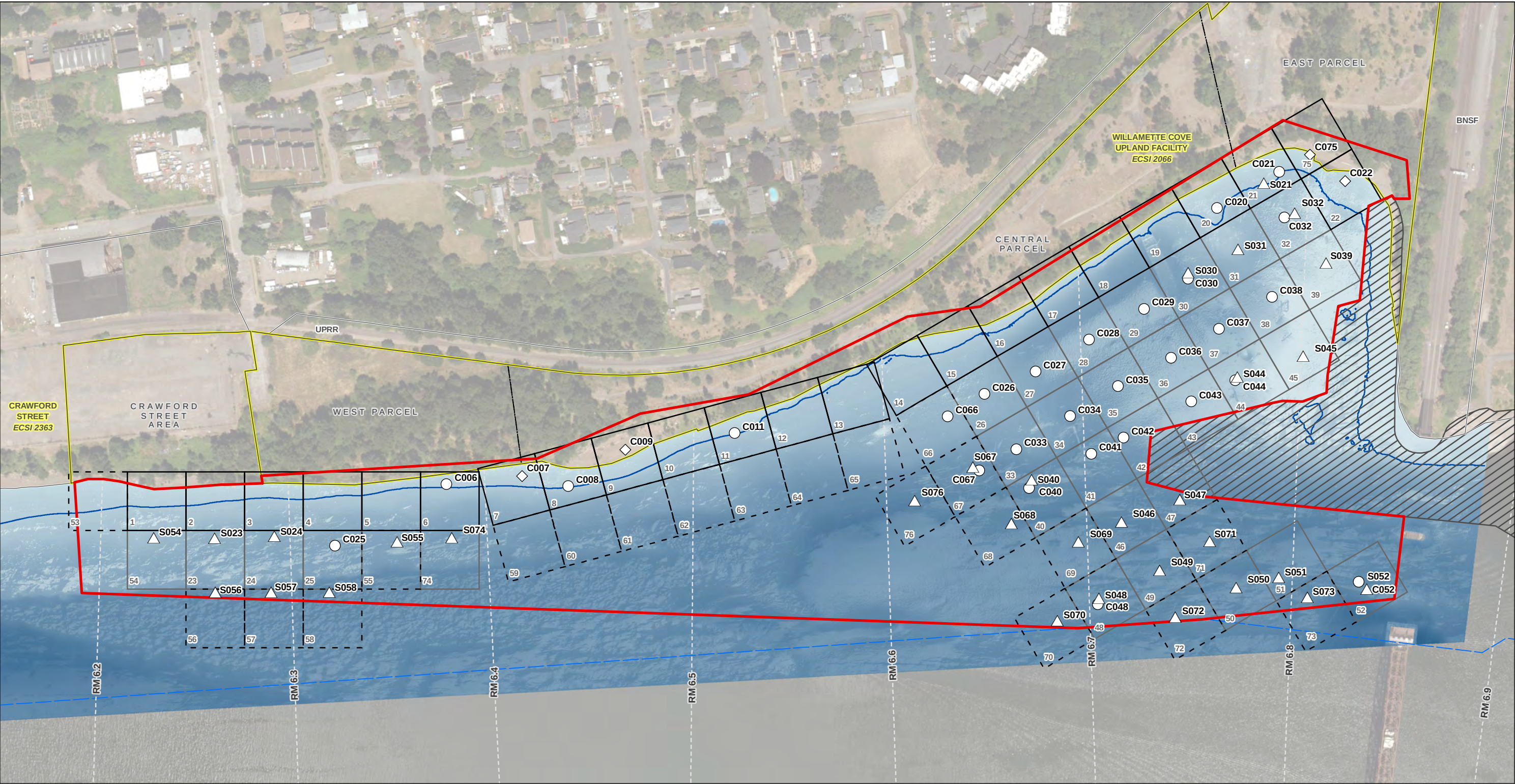
- 3.2' NAVD88 (-2' CRD) was generated from 2021 site bathymetry, Solmar Hydro.
- BNSF: Burlington Northern Santa Fe Railway
- CRD: Columbia River Datum
- ECSI: Environmental Cleanup Site Information
- NAVD88: North American Vertical Datum of 1988
- UPRR: Union Pacific Railroad
- USACE: U.S. Army Corps of Engineers

Date: May 3, 2021
Data Sources: City of Portland 2019, METRO 2020, USACE 2014, Bathymetry from Solmar Hydro, Aerial City of Portland 2020

FIGURE 2-2

Surface Sediment Sampling Locations
Pre-Design Investigation Evaluation Report





LEGEND

- ◇ Shoreline Geoprobe/Hand Auger Location
- △ Sonic Coring Location
- Vibracore Location
- Sample Cell**
- Shallow Region
- Intermediate Region
- - - Step-Out

All Other Features

- Project Area
- Upland Parcel
- Upland Subparcel
- Adjacent Parcel
- Capped
- Navigation Channel
- 3.2' NAVD88 (-2' CRD)

--- River Mile (RM)

Bathymetry

20'

-66'

NOTES

1. 3.2' NAVD88 (-2' CRD) was generated from 2021 site bathymetry, Solmar Hydro.

BNSF: Burlington Northern Santa Fe Railway

CRD: Columbia River Datum

ECSI: Environmental Cleanup Site Information

NAVD88: North American Vertical Datum of 1988

UPRR: Union Pacific Railroad

USACE: U.S. Army Corps of Engineers

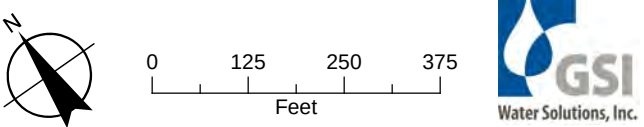
Date: May 3, 2021

Data Sources: City of Portland 2019, METRO 2020, USACE 2014, Bathymetry from Solmar Hydro, Aerial City of Portland 2020

FIGURE 2-3

Subsurface Sediment Sampling Locations

Pre-Design Investigation Evaluation Report





LEGEND

- 2' Elevation Contours (NAVD88)
- 10' Elevation Contours (NAVD88)
- 3.2' NAVD88 (-2' CRD)
- Navigation Channel
- River Mile (RM)

All Other Features

- Project Area Boundary
- Upland Parcel
- Upland Subparcel
- Adjacent Parcel
- Capped Area

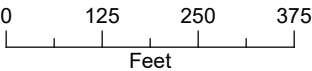
NOTES

1. 3.2' NAVD88 (-2' CRD), 2' and 10' Elevation Contour (NAVD88) are generated from 2021 site bathymetry and LiDAR, Solmar Hydro.
BNSF: Burlington Northern Santa Fe Railway
CRD: Columbia River Datum
ECSI: Environmental Cleanup Site Information
NAVD88: North American Vertical Datum of 1988
UPRR: Union Pacific Railroad
USACE: U.S. Army Corps of Engineers

Date: May 3, 2021
Data Sources: City of Portland 2019, METRO 2020,
USACE 2014, Bathymetry from Solmar Hydro, Aerial City of Portland 2020

FIGURE 4-1

Bathymetric and LiDAR Contours
Pre-Design Investigation Evaluation Report



Appendix D

Pre-Design and Supplemental Pre-Design Porewater Data

(From GSI Water Solutions, 2023)

Station Cell	Porewater Location ID	Sample Region	Actual Coordinates ^a				Surface Elevation (ft NAVD 88)
			Latitude	Longitude	Easting	Northing	
1	P001	Shallow	45.58297	-122.756297	7624502.24	706704.68	0.1
23	P002	Intermediate	45.582591	-122.755997	7624574.92	706564.34	-13.5
3	P003	Shallow	45.582573	-122.755282	7624757.85	706552.43	0.0
25	P004	Intermediate	45.582137	-122.754996	7624826.52	706391.68	-19.3
6	P005	Shallow	45.581984	-122.753763	7625140.65	706327.22	2.2
7	P006	Shallow	45.581669	-122.753162	7625291.23	706208.02	-2.3
14	P007	Shallow	45.580955	-122.749231	7626289.9	705919.69	1.1
28	P008	Intermediate	45.580398	-122.747564	7626711.1	705704.85	-25.8
32	P009	Intermediate	45.580294	-122.745243	7627304.03	705650.33	-6.2
45	P010	Intermediate	45.579504	-122.745896	7627128.93	705366.98	-2.5
49	P011	Intermediate	45.578789	-122.748286	7626510.02	705123.64	-40.1

Notes

PRC: Performance reference compound

a: Coordinates are projected in NAD 1983 (2011) State Plane Oregon North FIPS 3601 (Intl Feet). Latitude and longitude values are presented in decimal degrees. Easting and Northing values are presented using international feet.

Table 4-11
Porewater Results

Porewater Location ID				WC-P003A		WC-P009A		WC-P012		WC-P015		WC-P016		WC-P017		WC-P018			
Region				Shallow		Intermediate		Intermediate		Shallow		Intermediate		Intermediate		Shallow			
Sample Date				10/4/2022		10/4/2022		10/5/2022		10/4/2022		10/4/2022		10/4/2022		10/4/2022			
Depth Interval (ft)				0.5-1.0		1.5-2.0		0.5-1.0		1.5-2.0		0.5-1.0		1.5-2.0		0.5-1.0		1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level															
PCDD/Fs																			
1,2,3,4,6,7,8-HpCDD	pg/L	E1613B	—	1.69 U	0.118 J+	1.68 U	1.63 U	0.0222 J+	1.62 U	0.0588 J+	1.64 U	0.286 J	0.306 J	0.132 J	0.114 J+	0.0507 J	0.0586 J		
1,2,3,4,6,7,8-HpCDF	pg/L	E1613B	—	0.150 UJ+	0.242 UJ+	0.149 UJ+	0.145 UJ+	6.20 U	5.97 U	0.148 UJ+	0.145 UJ+	0.141 UJ+	0.203 UJ+	0.190 UJ+	5.86 U	0.144 UJ+	0.141 UJ+		
1,2,3,4,7,8,9-HpCDF	pg/L	E1613B	—	0.0447 UJ+	0.123 J+	0.0776 UJ+	0.0433 UJ+	2.85 U	2.75 U	0.0545 UJ+	0.0435 UJ+	0.0583 UJ+	2.71 U	2.80 U	2.70 U	0.0431 UJ+	0.0423 UJ+		
1,2,3,4,7,8-HxCDD	pg/L	E1613B	—	0.121 UJ+	0.117 UJ+	0.120 UJ+	0.117 UJ+	0.0589 UJ+	0.0567 UJ+	0.120 UJ+	0.117 UJ+	0.114 UJ+	0.114 UJ+	0.118 UJ+	0.114 UJ+	0.116 UJ+	0.114 UJ+		
1,2,3,4,7,8-HxCDF	pg/L	E1613B	—	7.91 U	7.69 U	7.87 U	7.65 U	7.87 U	7.58 U	7.83 U	7.69 U	7.44 U	7.48 U	7.72 U	7.44 U	7.62 U	7.48 U		
1,2,3,6,7,8-HxCDD	pg/L	E1613B	—	0.0390 UJ+	0.0404 UJ+	0.0476 UJ+	0.0374 UJ+	3.13 U	3.02 U	0.0573 UJ+	0.0465 UJ+	2.96 U	0.0452 UJ+	0.0664 UJ+	2.96 U	0.0836 UJ+	0.0369 UJ+		
1,2,3,6,7,8-HxCDF	pg/L	E1613B	—	9.29 U	0.126 J+	9.24 U	8.98 U	9.24 U	8.90 U	9.20 U	0.144 J+	8.74 U	8.78 U	9.07 U	8.74 U	8.94 U	8.78 U		
1,2,3,7,8,9-HxCDD	pg/L	E1613B	—	0.0868 UJ+	0.0942 UJ+	0.0864 UJ+	0.0840 UJ+	3.13 U	3.02 U	0.0860 UJ+	0.0905 UJ+	0.0817 UJ+	0.0821 UJ+	0.116 UJ+	0.0817 UJ+	0.0376 UJ+	0.0821 UJ+		
1,2,3,7,8,9-HxCDF	pg/L	E1613B	—	7.91 U	7.69 U	7.87 U	7.65 U	7.87 U	7.58 U	7.83 U	7.69 U	7.44 U	0.150 J+	7.72 U	7.44 U	7.62 U	7.48 U		
1,2,3,7,8-PeCDD	pg/L	E1613B	—	7.55 U	0.197 UJ+	0.129 J+	7.31 U	7.52 U	0.0347 UJ+	0.192 J+	0.0499 UJ+	0.242 J+	0.111 UJ+	0.195 J+	7.11 U	0.177 J+	7.14 U		
1,2,3,7,8-PeCDF	pg/L	E1613B	—	21.0 U	20.4 U	20.9 U	20.3 U	20.9 U	20.1 U	0.264 UJ+	20.4 U	19.7 U	19.8 U	20.5 U	19.7 U	20.2 U	19.8 U		
2,3,4,6,7,8-HxCDF	pg/L	E1613B	—	7.91 U	7.69 U	7.87 U	7.65 U	7.87 U	7.58 U	7.83 U	7.69 U	7.44 U	7.48 U	7.72 U	7.44 U	7.62 U	7.48 U		
2,3,4,7,8-PeCDF	pg/L	E1613B	—	19.0 U	18.4 U	18.9 U	18.4 U	18.9 U	18.2 U	18.8 U	18.4 U	17.9 U	17.9 U	18.5 U	17.9 U	18.3 U	17.9 U		
2,3,7,8-TCDD	pg/L	E1613B	—	2.12 U	2.06 U	2.11 U	2.05 U	2.11 U	2.03 U	2.10 U	2.06 U	1.99 U	2.00 U	2.07 U	0.0203 J+	2.04 U	2.00 U		
2,3,7,8-TCDF	pg/L	E1613B	—	7.75 U	0.166 J+	0.0910 J+	0.129 J+	7.71 U	7.42 U	7.67 U	0.0768 J+	0.138 J+	7.32 U	0.0681 J+	7.29 U	7.46 U	0.105 J+		
OCDD	pg/L	E1613B	—	0.0894 UJ+	0.310 J+	0.178 J+	0.182 J+	0.0349 UJ+	0.0300 UJ+	0.126 UJ+	0.146 J+	0.481 J+	0.483 J+	0.237 J+	0.264 J+	0.0891 UJ+	0.160 J+		
OCDF	pg/L	E1613B	—	0.0740 UJ+	0.139 J+	0.0736 UJ+	0.0572 UJ+	2.63 U	2.53 U	0.0586 UJ+	0.0575 UJ+	0.0557 UJ+	0.0699 UJ+	0.0877 UJ+	0.0557 UJ+	0.0570 UJ+	0.0559 UJ+		
2,3,7,8-TCDD TEQ	pg/L	E1613B	—	7.55 U	5.40 J+	6.00 J+	9.37 J+	10.3 J+	18.2 U	6.10 J+	5.32 J+	5.94 J+	5.64 J+	5.97 J+	8.67 J+	6.22 J+	9.14 J+		
Metals																			
Arsenic	µg/L	E200.8	0.018	3.77 U	0.967	3.76 U	2.93 U	0.605 U	0.605 U	2.93 U	2.95 U	2.93 U	3.38 U	2.93 U	2.93 U	7.50 U	8.90 U		
Chromium	µg/L	E200.8	11	—	—	1.38 U	1.38 U	—	—	—	—	3.27 U	1.38 U	—	—	1.38 U	1.38 U		
Copper	µg/L	E200.8	2.74	—	—	1.67 U	1.79 U	—	—	—	—	1.52 U	1.70 U	—	—	1.73 U	1.80 U		
Zinc	µg/L	E200.8	36.5	—	—	3.33 U	3.57 U	—	—	—	—	3.04 U	3.41 U	—	—	3.46 U	3.60 U		
PAHs																			
1-Methylnaphthalene	ng/L	ID-0016	—	1,977 U	1,921 U	1,967 U	1,912 U	1,967 U	1,894 U	1,958 U	1,921	204,598	164,426	65,626	174,838	1,903 U	1,868 U		
2-Methylnaphthalene	ng/L	ID-0016	2,100	1,977 U	1,921 U	1,967 U	1,912 U	1,967 U	1,894 U	1,958 U	1,921 U	7,812	71,002	1,930 U	20,832	1,903 U	1,868 U		
Acenaphthene	ng/L	ID-0016	23,000	1,480 U	1,439 U	1,473 U	1,432 U	1,473 U	1,419 U	1,466 U	1,554	211,720	229,477	124,309	189,433	1,425 U	1,399 U		
Acenaphthylene	ng/L	ID-0016	—	2,606 U	2,533 U	2,593 U	2,521 U	2,593 U	2,497 U	2,581 U	2,533 U	4,610	4,581	2,697	3,089	2,509 U	2,463 U		
Anthracene	ng/L	ID-0016	730	530 U	515 U	527 U	512 U	527 U	507 U	524 U	515 U	6,178	9,509	4,550	5,580	510 U	500 U		
Benz(a)anthracene	ng/L	ID-0016	1.2	85.5 U	83.1 U	85.1 U	82.7 U	85.1 U	82.0 U	84.7 U	83.1 U	161	178	145	161	82.4 U	80.8 U		
Benzo(a)pyrene	ng/L	ID-0016	0.12	26.9 U	26.1 U	26.8 U	26.0 U	26.8 U	25.8 U	26.6 U	26.1 U	25.3 U	25.4 U	26.3 U	25.3 U	25.9 U	25.4 U		
Benzo(b)fluoranthene	ng/L	ID-0016	1.2	27.5 U	26.7 U	27.4 U	26.6 U	27.4 U	26.4 U	27.3 U	26.7 U	25.9 U	26.0 U	26.9 U	25.9 U	26.5 U	26.0 U		
Benzo(e)pyrene	ng/L	ID-0016	—	26.9 U	26.1 U	26.8 U	26.0 U	26.8 U	25.8 U	26.6 U	26.1 U	25.3 U	25.4 U	26.3 U	25.3 U	25.9 U	25.4 U		
Benzo(g,h,i)perylene	ng/L	ID-0016	400	13.8 U	13.4 U	13.7 U	13.3 U	13.7 U	13.2 U	13.6 U	13.4 U	12.9 U	13.0 U	13.4 U	12.9 U	13.2 U	13.0 U		
Benzo(k)fluoranthene	ng/L	ID-0016	1.3	31.2 U	30.3 U	31.0 U	30.2 U	31.0 U	29.9 U	30.9 U	30.3 U	29.3 U	29.5 U	30.5 U	29.3 U	30.0 U	29.5 U		
Chrysene	ng/L	ID-0016	1.3	78.0 U	75.8 U	77.6 U	75.5 U	77.6 U	74.8 U	77.3 U	75.8 U	126	133	105	119	75.1 U	73.7 U		
Dibenz(a,h)anthracene	ng/L	ID-0016	0.12	8.11 U	7.88 U	8.07 U	7.85 U	8.07 U	7.77 U	8.03 U	7.88 U	7.63 U	7.67 U	7.92 U	7.63 U	7.81 U	7.67 U		
Fluoranthene	ng/L	ID-0016	6,200	280	280	214 U	208 U	214 U	206 U	213 U	209 U	5,261	7,724	4,620	4,856	207 U	203 U		
Fluorene	ng/L	ID-0016	3,900	1,176 U	1,143 U	1,170 U	1,137 U	1,170 U	1,127 U	1,165 U	1,143 U	95,152	117,815	59,705	92,939	1,132 U	1,111 U		
Indeno(1,2,3-cd)pyrene	ng/L	ID-0016	1.2	13.8 U	13.4 U	13.7 U	13.3 U	13.7 U	13.2 U	13.6 U	13.4 U	12.9 U	13.0 U	13.4 U	12.9 U	13.2 U	13.0 U		
Naphthalene	ng/L	ID-0016	12,000	4,282 U	4,161 U	4,261 U	4,141 U	4,261 U	4,103 U	4,241 U	4,161 U	4,029 U	4,047 U	4,181 U	4,029 U	4,122 U	4,047 U		
Perylene	ng/L	ID-0016	—	26.9 U	26.1 U	26.8 U	26.0 U	26.8 U	25.8 U	26.6 U	26.1 U	25.3 U	25.4 U	26.3 U	25.3 U	25.9 U	25.4 U		
Phenanthrene	ng/L	ID-0016	6,300	483 U	469 U	481 U	467 U	481 U	463 U	478 U	469 U	42,712	67,555	33,950	43,621	465 U	456 U		
Pyrene	ng/L	ID-0016	10,000	357	355	214 U	208 U	214 U	206 U	213 U	209 U	3,319	4,472	2,814	2,995	207 U	203 U		
cPAHs	ng/L	ID-0016	0.12	26.9 U	26.1 U	26.8 U	26.0 U	26.8 U	25.8 U	26.6 U	26.1 U	33.8	35.6	32.6	33.7	25.9 U	25.4 U		
Total LPAH	ng/L	ID-0016	—	4,280 U	4,160 U	4,260 U	4,140 U	4,260 U	4,100 U	4,240 U	6,920	370,000	502,000	228,000	358,000	4,120 U	4,050 U		
Total HPAH	ng/L	ID-0016	—	779	774	214 U	208 U	214 U	206 U	213 U	209 U	8,920	12,600	7,740	8,190	207 U			

Table 4-11
Porewater Results

Porewater Location ID				WC-P019		WC-P020		WC-P021		WC-P022		WC-P023		WC-P024		WC-P025		
Region				Intermediate		Shallow		Intermediate		Intermediate		Shallow		Shallow		Shallow		
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022		10/4/2022		
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level														
PCDD/Fs																		
1,2,3,4,6,7,8-HpCDD	pg/L	E1613B	—	1.66 U	0.0262 J	1.72 U	1.74 U	0.0618 J	0.0932 J+	0.0299 J+	0.0354 J+	0.0932 J	0.114 J+	1.61 U	0.0308 J+	1.77 U	1.75 U	
1,2,3,4,6,7,8-HpCDF	pg/L	E1613B	—	6.14 U	6.06 U	0.152 UJ+	0.154 UJ+	0.0322 UJ+	0.0270 UJ+	0.0469 UJ+	0.0315 UJ+	0.0319 UJ+	5.86 U	0.0380 UJ+	0.0923 J+	6.55 U	6.45 U	
1,2,3,4,7,8,9-HpCDF	pg/L	E1613B	—	2.83 U	2.79 U	2.92 U	0.0461 UJ+	2.85 U	2.83 U	2.70 U	0.0123 UJ+	2.83 U	2.70 U	0.00591 J+	2.72 U	3.01 U	2.97 U	
1,2,3,4,7,8-HxCDD	pg/L	E1613B	—	0.0583 UJ+	0.0599 UJ+	0.123 UJ+	0.124 UJ+	0.0864 UJ+	0.0670 UJ+	0.0651 UJ+	0.0648 UJ+	0.0558 UJ+	0.0557 UJ+	0.0600 UJ+	0.0562 UJ+	0.0820 UJ+	0.0612 UJ+	
1,2,3,4,7,8-HxCDF	pg/L	E1613B	—	7.80 U	7.69 U	8.07 U	8.15 U	7.87 U	7.80 U	7.44 U	7.69 U	7.80 U	7.44 U	7.55 U	7.51 U	8.31 U	8.19 U	
1,2,3,6,7,8-HxCDD	pg/L	E1613B	—	0.0100 UJ+	0.0196 UJ+	3.21 U	0.0402 UJ+	0.0121 J+	3.10 U	0.0110 J+	3.06 U	0.0149 J+	0.0189 J	0.00768 UJ+	0.0120 UJ+	3.31 U	3.26 U	
1,2,3,6,7,8-HxCDF	pg/L	E1613B	—	9.15 U	9.02 U	9.47 U	9.56 U	9.24 U	9.15 U	8.74 U	9.02 U	0.0439 J+	8.74 U	8.86 U	8.82 U	9.76 U	9.61 U	
1,2,3,7,8,9-HxCDD	pg/L	E1613B	—	3.10 U	3.06 U	0.0886 UJ+	0.0894 UJ+	0.0213 UJ+	0.0211 UJ+	0.0225 UJ+	3.06 U	0.0223 UJ+	2.96 U	0.0228 UJ+	2.99 U	3.31 U	3.26 U	
1,2,3,7,8,9-HxCDF	pg/L	E1613B	—	7.80 U	7.69 U	8.07 U	8.15 U	7.87 U	7.80 U	7.44 U	0.0461 UJ+	7.80 U	7.44 U	7.55 U	7.51 U	8.31 U	8.19 U	
1,2,3,7,8-PeCDD	pg/L	E1613B	—	0.0447 UJ+	7.34 U	7.70 U	7.78 U	0.0752 UJ+	0.0566 UJ+	0.0398 UJ+	7.34 U	0.0447 UJ+	0.0625 UJ+	0.0432 UJ+	7.17 U	7.94 U	0.0782 UJ+	
1,2,3,7,8-PeCDF	pg/L	E1613B	—	20.6 U	20.4 U	21.4 U	21.6 U	20.9 U	20.6 U	19.7 U	20.4 U	20.6 U	19.7 U	20.0 U	19.9 U	22.0 U	21.7 U	
2,3,4,6,7,8-HxCDF	pg/L	E1613B	—	7.80 U	7.69 U	8.07 U	0.104 J+	7.87 U	7.80 U	7.44 U	7.69 U	7.80 U	7.44 U	7.55 U	7.51 U	8.31 U	8.19 U	
2,3,4,7,8-PeCDF	pg/L	E1613B	—	18.7 U	18.4 U	19.4 U	19.5 U	18.9 U	18.7 U	17.9 U	18.4 U	18.7 U	17.9 U	18.1 U	18.0 U	19.9 U	19.6 U	
2,3,7,8-TCDD	pg/L	E1613B	—	2.09 U	2.06 U	2.16 U	0.0567 J+	2.11 U	2.09 U	1.99 U	2.06 U	2.09 U	1.99 U	2.02 U	2.01 U	2.22 U	2.19 U	
2,3,7,8-TCDF	pg/L	E1613B	—	7.64 U	7.53 U	7.90 U	7.98 U	7.71 U	7.64 U	7.29 U	7.53 U	7.64 U	7.29 U	7.39 U	7.36 U	8.14 U	8.02 U	
OCDD	pg/L	E1613B	—	0.0245 UJ+	0.0245 UJ+	0.127 UJ+	0.0953 UJ+	0.121 J+	0.195 J+	0.0330 UJ+	0.0558 J+	0.113 J+	0.243 J+	0.0289 UJ+	0.0424 J+	0.0228 UJ+	0.0268 UJ+	
OCDF	pg/L	E1613B	—	0.0213 UJ+	0.0210 UJ+	0.0603 UJ+	0.0609 UJ+	0.0168 UJ+	0.0156 UJ+	0.0149 UJ+	0.0298 UJ+	0.0198 UJ+	0.0234 UJ+	0.0207 UJ+	0.0206 UJ+	2.78 U	2.73 U	
2,3,7,8-TCDD TEQ	pg/L	E1613B	—	18.7 U	9.95 J+	7.70 U	8.93 J+	6.29 J+	6.37 J+	5.93 J+	9.68 J+	5.76 J+	6.11 J+	6.00 J+	9.69 J+	7.94 U	19.6 U	
Metals																		
Arsenic	µg/L	E200.8	0.018	4.41	2.79 U	2.93 U	11.7 U	4.13	3.71	8.12	3.89	0.717 U	0.890 U	2.93 U	9.54 U	13.8 U	17.6	
Chromium	µg/L	E200.8	11	1.48 U	1.48 U	1.38 U	1.38 U	1.48 U	1.48 U	—	—	—	—	—	—	—	—	
Copper	µg/L	E200.8	2.74	1.58 U	1.64 U	1.63 U	1.70 U	1.67 U	1.73 U	—	—	—	—	—	—	—	—	
Zinc	µg/L	E200.8	36.5	15.2 U	10.1 U	3.26 U	4.24 J	10.1 U	3.46 U	—	—	—	—	—	—	—	—	
PAHs																		
1-Methylnaphthalene	ng/L	ID-0016	—	1,949 U	1,921 U	2,016 U	2,036 U	1,967 U	1,949 U	1,860 U	4,611	1,949 U	1,860 U	1,886 U	1,877 U	3,407	4,501	
2-Methylnaphthalene	ng/L	ID-0016	2,100	1,949 U	1,921 U	2,016 U	2,036 U	1,967 U	1,949 U	1,860 U	1,921 U	1,949 U	1,860 U	1,886 U	1,877 U	2,077 U	2,046 U	
Acenaphthene	ng/L	ID-0016	23,000	1,459 U	1,439 U	1,510 U	1,525 U	1,650	1,459 U	2,451	83,443	1,459 U	1,393 U	1,666	2,390	1,556 U	3,677	
Acenaphthylene	ng/L	ID-0016	—	2,569 U	2,533 U	2,657 U	2,684 U	2,593 U	2,569 U	2,452 U	2,533 U	2,569 U	2,452 U	2,486 U	2,474 U	2,738 U	2,697 U	
Anthracene	ng/L	ID-0016	730	522 U	515 U	540 U	545 U	527 U	522 U	498 U	823	522 U	498 U	505 U	503 U	556 U	548 U	
Benz(a)anthracene	ng/L	ID-0016	1.2	84.3 U	83.1 U	87.2 U	88.1 U	85.1 U	84.3 U	80.5 U	83.1 U	84.3 U	80.5 U	81.6 U	81.2 U	89.9 U	88.5 U	
Benzo(a)pyrene	ng/L	ID-0016	0.12	26.5 U	26.1 U	27.4 U	27.7 U	26.8 U	26.5 U	25.3 U	26.1 U	26.5 U	25.3 U	25.6 U	25.5 U	28.3 U	27.8 U	
Benzo(b)fluoranthene	ng/L	ID-0016	1.2	27.1 U	26.7 U	28.0 U	28.3 U	27.4 U	27.1 U	25.9 U	26.7 U	27.1 U	25.9 U	26.2 U	26.1 U	28.9 U	28.5 U	
Benzo(e)pyrene	ng/L	ID-0016	—	26.5 U	26.1 U	27.4 U	27.7 U	26.8 U	26.5 U	25.3 U	26.1 U	26.5 U	25.3 U	25.6 U	25.5 U	28.3 U	27.8 U	
Benzo(g,h,i)perylene	ng/L	ID-0016	400	13.6 U	13.4 U	14.0 U	14.2 U	13.7 U	13.6 U	12.9 U	13.4 U	13.6 U	12.9 U	13.1 U	13.1 U	14.4 U	14.2 U	
Benzo(k)fluoranthene	ng/L	ID-0016	1.3	30.7 U	30.3 U	31.8 U	32.1 U	31.0 U	30.7 U	29.3 U	30.3 U	30.7 U	29.3 U	29.8 U	29.6 U	32.8 U	32.3 U	
Chrysene	ng/L	ID-0016	1.3	76.9 U	75.8 U	79.6 U	80.3 U	77.6 U	76.9 U	73.4 U	75.8 U	76.9 U	73.4 U	74.4 U	74.1 U	82.0 U	80.8 U	
Dibenz(a,h)anthracene	ng/L	ID-0016	0.12	8.00 U	7.88 U	8.27 U	8.35 U	8.07 U	8.00 U	7.63 U	7.88 U	8.00 U	7.63 U	7.74 U	7.70 U	8.52 U	8.40 U	
Fluoranthene	ng/L	ID-0016	6,200	212 U	209 U	219 U	221 U	214 U	212 U	202 U	397	212 U	202 U	205 U	204 U	226 U	223 U	
Fluorene	ng/L	ID-0016	3,900	1,159 U	1,143 U	1,199 U	1,211 U	1,170 U	1,159 U	1,106 U	38,854	1,159 U	1,106 U	1,122 U	1,117 U	1,236 U	1,217 U	
Indeno(1,2,3-cd)pyrene	ng/L	ID-0016	1.2	13.6 U	13.4 U	14.0 U	14.2 U	13.7 U	13.6 U	12.9 U	13.4 U	13.6 U	12.9 U	13.1 U	13.1 U	14.4 U	14.2 U	
Naphthalene	ng/L	ID-0016	12,000	4,220 U	4,161 U	4,366 U	4,409 U	4,261 U	4,220 U	4,029 U	4,161 U	4,220 U	4,029 U	4,084 U	4,065 U	4,499 U	4,431 U	
Perylene	ng/L	ID-0016	—	26.5 U	26.1 U	27.4 U	27.7 U	26.8 U	26.5 U	25.3 U	26.1 U	26.5 U	25.3 U	25.6 U	25.5 U	28.3 U	27.8 U	
Phenanthrene	ng/L	ID-0016	6,300	476 U	469 U	492 U	497 U	481 U	476 U	454 U	7,040	476 U	454 U	461 U	917	507 U	500 U	
Pyrene	ng/L	ID-0016	10,000	212 U	209 U	219 U	221 U	214 U	212 U	202 U	230	212 U	202 U	205 U	204 U	226 U	223 U	
cPAHs	ng/L	ID-0016	0.12	26.5 U	26.1 U	27.4 U	27.7 U	26.8 U	26.5 U	25.3 U	26.1 U	26.5 U	25.3 U	25.6 U	25.5 U	28.3 U	27.8 U	
Total LPAH	ng/L	ID-0016	—	4,220 U	4,160 U	4,370 U	4,410 U	7,150	4,220 U	7,650	134,000	4,220 U	4,030 U	6,940	8,330	4,500 U	9,400	
Total HPAH	ng/L	ID-0016	—	212 U	209 U	219 U	221 U	214 U	212 U	202 U	765	212 U	202 U	205 U	204 U	226 U	223 U	
Total PAHs	ng/L	ID-0016	—	4,220 U	4,160 U	4,370 U	4,410 U	7,510	4,220 U	7,990	135,000							

Table 4-11
Porewater Results

Porewater Location ID				WC-P026		WC-P027		WC-P028		WC-P029		WC-P030		WC-P031	
Region				Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate	
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022	
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0
Screening Criteria	Reporting Units	Analytical Method	Table 17 ROD Cleanup Level												
PCDD/Fs															
1,2,3,4,6,7,8-HpCDD	pg/L	E1613B	—	0.0213 J+	0.0500 J+	0.0325 J+	0.0455 J+	0.0247 J+	0.0574 J+	0.0431 J+	1.79 U	1.70 U	1.61 U	1.64 U	1.66 U
1,2,3,4,6,7,8-HpCDF	pg/L	E1613B	—	0.0285 UJ+	0.0284 UJ+	6.11 U	5.92 U	0.0272 UJ+	0.0536 UJ+	6.11 U	0.0291 UJ+	0.0275 UJ+	5.94 U	6.06 U	6.11 U
1,2,3,4,7,8,9-HpCDF	pg/L	E1613B	—	0.0131 UJ+	2.72 U	2.81 U	2.72 U	2.84 U	2.94 U	2.81 U	0.0134 UJ+	2.88 U	2.73 U	2.79 U	2.81 U
1,2,3,4,7,8-HxCDD	pg/L	E1613B	—	0.0732 UJ+	0.0502 UJ+	0.0593 UJ+	0.0562 UJ+	0.0486 UJ+	0.0580 UJ+	0.0519 UJ+	0.0561 UJ+	0.0519 UJ+	0.0432 UJ+	0.0575 UJ+	0.0679 UJ+
1,2,3,4,7,8-HxCDF	pg/L	E1613B	—	7.55 U	7.51 U	7.76 U	7.51 U	7.83 U	8.11 U	7.76 U	8.40 U	7.95 U	7.55 U	7.69 U	7.76 U
1,2,3,6,7,8-HxCDD	pg/L	E1613B	—	0.0112 J+	2.99 U	3.09 U	2.99 U	3.12 U	0.0206 J	0.0119 J	3.34 U	0.0109 J+	0.0114 J+	0.00783 UJ+	3.09 U
1,2,3,6,7,8-HxCDF	pg/L	E1613B	—	8.86 U	8.82 U	9.11 U	8.82 U	9.20 U	9.52 U	9.11 U	9.86 U	9.33 U	0.0283 J+	9.02 U	9.11 U
1,2,3,7,8,9-HxCDD	pg/L	E1613B	—	3.00 U	0.0203 UJ+	3.09 U	2.99 U	0.0212 UJ+	3.22 U	3.09 U	0.0281 UJ+	0.0215 UJ+	0.0204 UJ+	0.0232 UJ+	3.09 U
1,2,3,7,8,9-HxCDF	pg/L	E1613B	—	0.0423 UJ+	7.51 U	7.76 U	7.51 U	7.83 U	0.0357 UJ+	7.76 U	8.40 U	0.0413 UJ+	7.55 U	0.0369 UJ+	7.76 U
1,2,3,7,8-PeCDD	pg/L	E1613B	—	0.0346 UJ+	0.0373 UJ+	0.0623 UJ+	0.0516 UJ+	0.0479 UJ+	0.0650 UJ+	0.0800 UJ+	0.0417 UJ+	0.0729 J+	7.21 U	7.34 U	0.0445 UJ+
1,2,3,7,8-PeCDF	pg/L	E1613B	—	20.0 U	19.9 U	20.5 U	19.9 U	20.8 U	21.5 U	20.5 U	22.2 U	21.0 U	20.0 U	20.4 U	20.5 U
2,3,4,6,7,8-HxCDF	pg/L	E1613B	—	7.55 U	7.51 U	7.76 U	7.51 U	7.83 U	8.11 U	7.76 U	8.40 U	7.95 U	7.55 U	7.69 U	7.76 U
2,3,4,7,8-PeCDF	pg/L	E1613B	—	18.1 U	18.0 U	18.6 U	18.0 U	18.8 U	0.0568 J+	18.6 U	20.1 U	19.1 U	18.1 U	18.4 U	18.6 U
2,3,7,8-TCDD	pg/L	E1613B	—	2.02 U	2.01 U	2.08 U	2.01 U	2.10 U	2.17 U	2.08 U	2.25 U	2.13 U	2.02 U	2.06 U	2.08 U
2,3,7,8-TCDF	pg/L	E1613B	—	0.0813 J+	7.36 U	7.60 U	7.36 U	7.67 U	7.94 U	2.13 J+	0.263 J+	7.78 U	7.39 U	7.53 U	7.60 U
OCDD	pg/L	E1613B	—	0.0241 UJ+	0.0546 J+	0.0438 J+	0.0849 J+	0.0240 UJ+	0.173 J+	0.0720 J+	0.0542 J+	0.0260 UJ+	0.0201 UJ+	0.0254 UJ+	0.0266 UJ+
OCDF	pg/L	E1613B	—	0.0151 UJ+	0.0150 UJ+	0.0212 UJ+	0.0206 UJ+	2.62 U	0.0336 UJ+	0.0155 UJ+	0.0168 UJ+	0.0202 UJ+	0.0151 UJ+	0.0210 UJ+	0.0212 UJ+
2,3,7,8-TCDD TEQ	pg/L	E1613B	—	5.41 J+	6.13 J+	6.53 J+	6.31 J+	6.40 J+	3.32 J+	6.22 J+	6.46 J+	5.99 J+	9.19 J+	7.34 U	18.6 U
Metals															
Arsenic	µg/L	E200.8	0.018	1.28 U	3.08	2.93 U	2.93 U	1.16	0.839 U	1.17 U	1.41 U	13.6	10.3	3.02 U	2.93 U
Chromium	µg/L	E200.8	11	—	—	—	—	—	—	—	—	—	—	—	—
Copper	µg/L	E200.8	2.74	—	—	—	—	—	—	—	—	—	—	—	—
Zinc	µg/L	E200.8	36.5	—	—	—	—	—	—	—	—	—	—	—	—
PAHs															
1-Methylnaphthalene	ng/L	ID-0016	—	1,886 U	1,877 U	1,939 U	1,877 U	1,958 U	2,026 U	1,939 U	2,098 U	1,986 U	1,886 U	1,921 U	1,939 U
2-Methylnaphthalene	ng/L	ID-0016	2,100	1,886 U	1,877 U	1,939 U	1,877 U	1,958 U	2,026 U	1,939 U	2,098 U	1,986 U	1,886 U	1,921 U	1,939 U
Acenaphthene	ng/L	ID-0016	23,000	1,412 U	1,406 U	1,452 U	1,406 U	14,662	7,888	1,452 U	1,571 U	1,488 U	1,412 U	1,439 U	1,452 U
Acenaphthylene	ng/L	ID-0016	—	2,486 U	2,474 U	2,557 U	2,474 U	2,581 U	2,670 U	2,557 U	2,766 U	2,619 U	2,486 U	2,533 U	2,557 U
Anthracene	ng/L	ID-0016	730	505 U	503 U	519 U	503 U	524 U	543 U	519 U	562 U	532 U	505 U	515 U	519 U
Benz(a)anthracene	ng/L	ID-0016	1.2	81.6 U	81.2 U	83.9 U	81.2 U	84.7 U	87.7 U	83.9 U	90.8 U	86.0 U	81.6 U	83.1 U	83.9 U
Benzo(a)pyrene	ng/L	ID-0016	0.12	25.6 U	25.5 U	26.4 U	25.5 U	26.6 U	27.5 U	26.4 U	28.5 U	27.0 U	25.6 U	26.1 U	26.4 U
Benzo(b)fluoranthene	ng/L	ID-0016	1.2	26.2 U	26.1 U	27.0 U	26.1 U	27.3 U	28.2 U	27.0 U	29.2 U	27.6 U	26.2 U	26.7 U	27.0 U
Benzo(e)pyrene	ng/L	ID-0016	—	25.6 U	25.5 U	26.4 U	25.5 U	26.6 U	27.5 U	26.4 U	28.5 U	27.0 U	25.6 U	26.1 U	26.4 U
Benzo(g,h,i)perylene	ng/L	ID-0016	400	13.1 U	13.1 U	13.5 U	13.1 U	13.6 U	14.1 U	13.5 U	14.6 U	13.8 U	13.1 U	13.4 U	13.5 U
Benzo(k)fluoranthene	ng/L	ID-0016	1.3	29.8 U	29.6 U	30.6 U	29.6 U	30.9 U	32.0 U	30.6 U	33.1 U	31.3 U	29.8 U	30.3 U	30.6 U
Chrysene	ng/L	ID-0016	1.3	74.4 U	74.1 U	76.5 U	74.1 U	77.3 U	79.9 U	76.5 U	82.8 U	78.4 U	74.4 U	75.8 U	76.5 U
Dibenz(a,h)anthracene	ng/L	ID-0016	0.12	7.74 U	7.70 U	7.96 U	7.70 U	8.03 U	8.31 U	7.96 U	8.61 U	8.15 U	7.74 U	7.88 U	7.96 U
Fluoranthene	ng/L	ID-0016	6,200	205 U	204 U	211 U	204 U	213 U	1,322	211 U	228 U	216 U	205 U	209 U	211 U
Fluorene	ng/L	ID-0016	3,900	1,122 U	1,117 U	1,154 U	1,117 U	1,165 U	1,205 U	1,154 U	1,248 U	1,182 U	1,122 U	1,143 U	1,154 U
Indeno(1,2,3-cd)pyrene	ng/L	ID-0016	1.2	13.1 U	13.1 U	13.5 U	13.1 U	13.6 U	14.1 U	13.5 U	14.6 U	13.8 U	13.1 U	13.4 U	13.5 U
Naphthalene	ng/L	ID-0016	12,000	4,084 U	4,065 U	4,200 U	4,065 U	4,241 U	4,387 U	4,200 U	4,545 U	4,302 U	4,084 U	4,161 U	4,200 U
Perylene	ng/L	ID-0016	—	25.6 U	25.5 U	26.4 U	25.5 U	26.6 U	27.5 U	26.4 U	28.5 U	27.0 U	25.6 U	26.1 U	26.4 U
Phenanthrene	ng/L	ID-0016	6,300	461 U	459 U	474 U	459 U	507	495 U	474 U	513 U	485 U	461 U	469 U	474 U
Pyrene	ng/L	ID-0016	10,000	205 U	204 U	211 U	204 U	213 U	1,234	211 U	228 U	216 U	205 U	209 U	211 U
cPAHs	ng/L	ID-0016	0.12	25.6 U	25.5 U	26.4 U	25.5 U	26.6 U	27.5 U	26.4 U	28.5 U	27.0 U	25.6 U	26.1 U	26.4 U
Total LPAH	ng/L	ID-0016	—	4,080 U	4,070 U	4,200 U	4,070 U	20,400	13,600	4,200 U	4,550 U	4,300 U	4,080 U	4,160 U	4,200 U
Total HPAH	ng/L	ID-0016	—	205 U	204 U	211 U	204 U	213 U	2,700	211 U	228 U	216 U	205 U	209 U	211 U
Total PAHs	ng/L	ID-0016	—	4,080 U	4,070 U	4,200 U	4,070 U	20,800	16,300	4,200 U	4,550 U	4,300 U	4,080 U	4,160 U	4,200 U
Semi-Volatile Organic Compounds															
Pentachlorophenol	µg/L	TTU_PCP	30	0.239 U	0.196 U	0.261 U	0.181 U	0.242 U	0.215 U	0.257 U	0.0972 U	0.234 U	0.204 U	0.219 U	0.171 U
Pesticides: DDx															
2,4-DDD	pg/L	E1699	—	150 U	149 U	154 U	350	155 U	161 U	154 U	183	158 UJ+	150 U	152 U	154 U
2,4-DDE	pg/L	E1699	—	21.9 UJ+	21.8 U	22.5 U	21.8 UJ+	22.7 U	23.5 U	22.5 U	24.4 UJ+	23.1 U	21.9 UJ+	22.3 UJ+	22.5 U
2,4-DDT	pg/L	E1699	—	43.8 U	43.6 UJ+	45.1 U	43.6 UJ+	45.5 UJ+	47.1 UJ+	45.1 U	48.8 U	46.2 UJ+	43.8 UJ+	44.7 UJ+	45.1 UJ+
4,4'-DDD	pg/L	E1699	—	150 U	149 U	154 U	223	155 U	169	154 U	233	158 U	150 U	152 U	154 U
4,4'-DDE	pg/L	E1699	—	21.9 U	21.8 U	22.5 U	21.8 U	22.7 U	23.5 U	22.5 U	24.4 U	23.1 U	21.9 U	22.3 U	22.5 U
4,4'-DDT	pg/L	E1699	—	43.8 U	43.6 U	45.1 UJ+	135	45.5 UJ+	47.1 UJ+	45.1 U	48.8 U	46.2 U	43.8 U	44.7 UJ+	45.1 UJ+
Total DDD	pg/L	E1699	31	150 U	149 U	154 U	573	155 U	249	154 U	416	158 U	150 U	152 U	154 U
Total DDE	pg/L	E1699	18	21.8 UJ+	22.5 U	22.5 U	21.8 UJ+	22.7 U	23.5 U	22.5 U	24.4 UJ+	23.1 U	21.9 UJ+	22.3 U	22.5 U
Total DDT	pg/L	E1699	22	43.8 U	43.6 U	45.1 UJ+	157 J+	45.5 UJ+	47.1 UJ+	45.1 U	48.8 U	46.2 U	43.8 U	44.7 UJ+	45.1 UJ+
Total DDx	pg/L	E1699	1,000	150 U	149 U	154 U	752 J+	155 U	320 J+	154 U	489 J+	158 UJ+	150 U	152 U	154 U

Table 4-11
Porewater Results

Porewater Location ID				WC-P003A		WC-P009A		WC-P012		WC-P015		WC-P016		WC-P017		WC-P018		
Region				Shallow		Intermediate		Intermediate		Shallow		Intermediate		Intermediate		Shallow		
Sample Date				10/4/2022		10/4/2022		10/5/2022		10/4/2022		10/4/2022		10/4/2022		10/4/2022		
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level														
PCB Congeners																		
PCB-001	ng/L	E1668A	—	2.58 U	2.51 U	2.57 U	2.50 U	2.57 U	2.47 U	2.56 U	2.51 U	0.117 J+	2.44 U	2.52 U	2.43 U	2.49 U	2.44 U	
PCB-002	ng/L	E1668A	—	1.61 U	1.56 U	1.60 U	1.56 U	1.60 U	1.54 U	1.59 U	1.56 U	0.0969 J+	1.52 U	1.57 U	1.51 U	1.55 U	1.52 U	
PCB-003	ng/L	E1668A	—	0.0418 J+	1.56 U	1.60 U	1.56 U	1.60 U	1.54 U	1.59 U	1.56 U	1.51 U	1.52 U	1.57 U	1.51 U	1.55 U	1.52 U	
PCB-004	ng/L	E1668A	—	3.49 U	3.40 U	0.591 J+	3.38 U	3.48 U	3.35 U	3.46 U	3.40 U	3.29 U	3.30 U	0.287 J+	3.29 U	3.36 U	0.168 J+	
PCB-005	ng/L	E1668A	—	0.909 U	0.884 U	0.905 U	0.880 U	0.905 U	0.872 U	0.901 U	0.884 U	0.856 U	0.860 U	0.888 U	0.856 U	0.876 U	0.0247 J+	
PCB-006	ng/L	E1668A	—	0.758 U	0.736 U	0.754 U	0.733 U	0.754 U	0.726 U	0.750 U	0.736 U	0.713 U	0.716 U	0.740 U	0.713 U	0.729 U	0.716 U	
PCB-007	ng/L	E1668A	—	0.742 U	0.722 U	0.739 U	0.718 U	0.739 U	0.712 U	0.735 U	0.722 U	0.699 U	0.702 U	0.725 U	0.699 U	0.715 U	0.702 U	
PCB-008	ng/L	E1668A	—	1.48 U	1.44 U	1.48 U	1.44 U	1.48 U	1.42 U	1.47 U	1.44 U	0.133 J+	0.0716 J+	0.142 J+	0.115 J+	1.43 U	0.0217 J+	
PCB-009	ng/L	E1668A	—	0.758 U	0.736 U	0.754 U	0.733 U	0.754 U	0.726 U	0.750 U	0.736 U	0.713 U	0.716 U	0.740 U	0.713 U	0.729 U	0.0206 J+	
PCB-010	ng/L	E1668A	—	1.18 U	1.15 U	1.18 U	1.15 U	1.18 U	1.14 U	1.17 U	1.15 U	1.11 U	1.12 U	1.16 U	1.11 U	1.14 U	1.12 U	
PCB-011	ng/L	E1668A	—	0.979 U	0.0380 J+	0.974 U	0.947 U	0.974 U	0.938 U	0.969 U	0.951 U	0.0424 J+	0.925 U	0.956 U	0.921 U	0.942 U	0.925 U	
PCB-012/013	ng/L	E1668A	—	1.09 U	1.06 U	1.09 U	1.06 U	1.09 U	1.05 U	1.08 U	1.06 U	1.03 U	1.03 U	1.07 U	1.03 U	1.05 U	1.03 U	
PCB-014	ng/L	E1668A	—	0.486 U	0.472 U	0.483 U	0.470 U	0.483 U	0.466 U	0.481 U	0.472 U	0.457 U	0.459 U	0.474 U	0.457 U	0.468 U	0.459 U	
PCB-015	ng/L	E1668A	—	0.467 U	0.453 U	0.464 U	0.451 U	0.464 U	0.447 U	0.462 U	0.453 U	0.439 U	0.441 U	0.456 U	0.439 U	0.449 U	0.441 U	
PCB-016	ng/L	E1668A	—	0.619 U	0.00674 J+	0.616 U	0.599 U	0.616 U	0.593 U	0.613 U	0.601 U	0.0827 J+	0.101 J	0.104 J+	0.0501 J+	0.596 U	0.585 U	
PCB-017	ng/L	E1668A	—	0.516 U	0.502 U	0.514 U	0.0230 J+	0.514 U	0.495 U	0.511 U	0.502 U	0.146 J	0.0878 J+	0.171 J+	0.126 J	0.497 U	0.488 U	
PCB-018/030	ng/L	E1668A	—	0.00527 J+	0.0706 J	1.05 U	1.02 U	0.0178 J+	0.0151 J+	1.04 U	1.02 U	0.178 J	0.119 J+	0.226 J	0.139 J	1.01 U	1.00 U	
PCB-019	ng/L	E1668A	—	0.823 U	0.800 U	0.129 J+	0.191 J+	0.819 U	0.788 U	0.815 U	0.800 U	0.0619 J+	0.0513 J+	0.0466 J+	0.0356 J+	0.0223 J+	0.0202 J+	
PCB-020/028	ng/L	E1668A	—	0.0259 J+	0.0247 J+	0.538 U	0.523 U	0.0177 J	0.0114 J	0.535 U	0.525 U	0.122 J	0.0766 J+	0.106 J	0.117 J	0.520 U	0.511 U	
PCB-021/033	ng/L	E1668A	—	0.616 U	0.599 U	0.613 U	0.596 U	0.613 U	0.590 U	0.610 U	0.599 U	0.0638 J	0.0460 J+	0.0662 J	0.0498 J+	0.593 U	0.582 U	
PCB-022	ng/L	E1668A	—	0.268 U	0.260 U	0.267 U	0.259 U	0.267 U	0.257 U	0.265 U	0.260 U	0.0348 J	0.0268 J	0.0314 J+	0.0312 J	0.258 U	0.253 U	
PCB-023	ng/L	E1668A	—	0.272 U	0.264 U	0.270 U	0.263 U	0.270 U	0.260 U	0.269 U	0.264 U	0.256 U	0.257 U	0.265 U	0.262 U	0.262 U	0.257 U	
PCB-024	ng/L	E1668A	—	0.422 U	0.410 U	0.420 U	0.408 U	0.420 U	0.404 U	0.418 U	0.410 U	0.397 U	0.399 U	0.412 U	0.397 U	0.00645 J+	0.399 U	
PCB-025	ng/L	E1668A	—	0.223 U	0.216 U	0.222 U	0.215 U	0.222 U	0.213 U	0.220 U	0.216 U	0.00373 J+	0.00463 J	0.217 U	0.00921 J	0.214 U	0.210 U	
PCB-026/029	ng/L	E1668A	—	0.454 U	0.441 U	0.452 U	0.439 U	0.452 U	0.435 U	0.450 U	0.441 U	0.00940 J+	0.0116 J+	0.0102 J+	0.0137 J+	0.437 U	0.429 U	
PCB-027	ng/L	E1668A	—	0.354 U	0.344 U	0.353 U	0.343 U	0.353 U	0.339 U	0.351 U	0.344 U	0.00560 J+	0.335 U	0.0208 J	0.0133 J+	0.341 U	0.335 U	
PCB-031	ng/L	E1668A	—	0.00892 J+	0.00737 J+	0.444 U	0.431 U	0.0129 J+	0.00855 J+	0.442 U	0.433 U	0.0671 J+	0.0548 J	0.0827 J	0.0713 J	0.429 U	0.00405 J+	
PCB-032	ng/L	E1668A	—	0.0142 J+	0.0234 J	0.00691 J+	0.00349 J+	0.0212 J+	0.0204 J+	0.0133 J	0.00668 J+	0.0393 J+	0.0261 J+	0.0304 J+	0.0380 J+	0.0144 J+	0.0178 J+	
PCB-034	ng/L	E1668A	—	0.228 U	0.221 U	0.227 U	0.220 U	0.227 U	0.218 U	0.226 U	0.221 U	0.214 U	0.215 U	0.223 U	0.214 U	0.219 U	0.215 U	
PCB-035	ng/L	E1668A	—	0.165 U	0.161 U	0.165 U	0.160 U	0.165 U	0.158 U	0.164 U	0.161 U	0.156 U	0.156 U	0.161 U	0.156 U	0.159 U	0.156 U	
PCB-036	ng/L	E1668A	—	0.147 U	0.143 U	0.146 U	0.142 U	0.146 U	0.141 U	0.145 U	0.143 U	0.138 U	0.139 U	0.143 U	0.138 U	0.141 U	0.139 U	
PCB-037	ng/L	E1668A	—	0.162 U	0.158 U	0.161 U	0.157 U	0.161 U	0.155 U	0.161 U	0.158 U	0.00793 J+	0.0132 J	0.00981 J+	0.0125 J	0.156 U	0.153 U	
PCB-038	ng/L	E1668A	—	0.186 U	0.181 U	0.185 U	0.180 U	0.185 U	0.178 U	0.184 U	0.181 U	0.175 U	0.176 U	0.182 U	0.175 U	0.179 U	0.176 U	
PCB-039	ng/L	E1668A	—	0.144 U	0.140 U	0.143 U	0.139 U	0.143 U	0.138 U	0.143 U	0.140 U	0.135 U	0.136 U	0.141 U	0.135 U	0.139 U	0.136 U	
PCB-040/041/071	ng/L	E1668A	—	0.681 U	0.662 U	0.678 U	0.659 U	0.0108 J+	0.653 U	0.675 U	0.662 U	0.0367 J+	0.0412 J+	0.0302 J+	0.0320 J+	0.656 U	0.0104 J	
PCB-042	ng/L	E1668A	—	0.186 U	0.180 U	0.185 U	0.180 U	0.00739 J+	0.178 U	0.184 U	0.180 U	0.175 U	0.0197 J+	0.0214 J+	0.175 U	0.179 U	0.176 U	
PCB-043/073	ng/L	E1668A	—	0.380 U	0.369 U	0.0140 J+	0.367 U	0.378 U	0.364 U	0.376 U	0.369 U	0.357 U	0.359 U	0.371 U	0.366 U	0.359 U	0.359 U	
PCB-044/047/065	ng/L	E1668A	—	0.0456 J+	0.0													

Table 4-11
Porewater Results

Porewater Location ID				WC-P019		WC-P020		WC-P021		WC-P022		WC-P023		WC-P024		WC-P025	
Region				Intermediate		Shallow		Intermediate		Intermediate		Shallow		Shallow		Shallow	
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022		10/4/2022	
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level													
PCB Congeners																	
PCB-001	ng/L	E1668A	—	2.54 U	2.51 U	2.63 U	2.66 U	2.57 U	2.54 U	0.0408 J+	0.115 J+	2.54 U	2.43 U	2.46 U	2.45 U	2.71 U	2.67 U
PCB-002	ng/L	E1668A	—	1.59 U	1.56 U	1.64 U	1.66 U	1.60 U	1.59 U	1.51 U	1.56 U	1.59 U	1.51 U	1.54 U	1.53 U	1.69 U	1.67 U
PCB-003	ng/L	E1668A	—	1.59 U	0.0375 J+	1.64 U	1.66 U	1.60 U	1.59 U	0.0454 J+	0.0751 J+	1.59 U	1.51 U	1.54 U	1.53 U	1.69 U	1.67 U
PCB-004	ng/L	E1668A	—	0.517 J+	0.917 J	3.56 U	3.60 U	3.48 U	3.44 U	3.29 U	3.40 U	3.44 U	3.29 U	3.33 U	3.32 U	3.67 U	3.62 U
PCB-005	ng/L	E1668A	—	0.896 U	0.884 U	0.927 U	0.937 U	0.905 U	0.896 U	0.856 U	0.884 U	0.896 U	0.856 U	0.868 U	0.864 U	0.956 U	0.941 U
PCB-006	ng/L	E1668A	—	0.747 U	0.736 U	0.773 U	0.780 U	0.754 U	0.747 U	0.713 U	0.736 U	0.747 U	0.713 U	0.723 U	0.719 U	0.796 U	0.784 U
PCB-007	ng/L	E1668A	—	0.732 U	0.722 U	0.757 U	0.765 U	0.739 U	0.732 U	0.699 U	0.722 U	0.732 U	0.699 U	0.708 U	0.705 U	0.780 U	0.768 U
PCB-008	ng/L	E1668A	—	1.46 U	1.44 U	1.51 U	1.53 U	1.48 U	1.46 U	1.40 U	0.0765 J+	1.46 U	1.40 U	1.42 U	0.0522 J+	1.56 U	1.54 U
PCB-009	ng/L	E1668A	—	0.747 U	0.736 U	0.773 U	0.780 U	0.754 U	0.747 U	0.713 U	0.736 U	0.747 U	0.713 U	0.723 U	0.719 U	0.796 U	0.784 U
PCB-010	ng/L	E1668A	—	1.17 U	1.15 U	1.21 U	1.22 U	1.18 U	1.17 U	1.11 U	1.15 U	1.17 U	1.11 U	1.13 U	1.12 U	1.24 U	1.23 U
PCB-011	ng/L	E1668A	—	0.965 U	0.951 U	1.00 U	1.01 U	0.974 U	0.965 U	0.921 U	0.951 U	0.965 U	0.921 U	0.934 U	0.929 U	1.03 U	1.01 U
PCB-012/013	ng/L	E1668A	—	1.08 U	1.06 U	1.12 U	1.13 U	1.09 U	1.08 U	1.03 U	1.06 U	1.08 U	1.03 U	1.04 U	1.04 U	1.15 U	1.13 U
PCB-014	ng/L	E1668A	—	0.479 U	0.472 U	0.495 U	0.500 U	0.483 U	0.479 U	0.457 U	0.472 U	0.479 U	0.457 U	0.463 U	0.461 U	0.510 U	0.503 U
PCB-015	ng/L	E1668A	—	0.460 U	0.453 U	0.476 U	0.481 U	0.464 U	0.460 U	0.439 U	0.453 U	0.0248 J+	0.439 U	0.445 U	0.443 U	0.0235 J+	0.483 U
PCB-016	ng/L	E1668A	—	0.0195 J	0.601 U	0.631 U	0.637 U	0.616 U	0.610 U	0.582 U	0.601 U	0.610 U	0.582 U	0.590 U	0.0282 J+	0.650 U	0.641 U
PCB-017	ng/L	E1668A	—	0.397 J	0.652	0.526 U	0.531 U	0.0349 J+	0.509 U	0.0136 J	0.0181 J+	0.509 U	0.0165 J+	0.492 U	0.0549 J+	0.542 U	0.534 U
PCB-018/030	ng/L	E1668A	—	0.0208 J+	0.0614 J	1.07 U	1.08 U	0.0545 J	0.0394 J+	0.991 U	0.0563 J	0.0405 J+	0.0238 J+	1.00 U	0.00890 J+	1.11 U	1.09 U
PCB-019	ng/L	E1668A	—	0.941	1.60	0.0470 J	0.847 U	0.0377 J+	0.811 U	0.0294 J+	0.800 U	0.0178 J+	0.774 U	0.785 U	0.781 U	0.864 U	0.851 U
PCB-020/028	ng/L	E1668A	—	0.0277 J	0.0683 J	0.551 U	0.0167 J	0.0328 J	0.0384 J	0.00661 J+	0.0184 J+	0.0149 J	0.0153 J	0.516 U	0.0328 J+	0.568 U	0.00895 J+
PCB-021/033	ng/L	E1668A	—	0.0437 J+	0.0958 J	0.628 U	0.634 U	0.0153 J	0.0200 J+	0.580 U	0.0114 J+	0.0115 J+	0.580 U	0.588 U	0.0211 J+	0.647 U	0.638 U
PCB-022	ng/L	E1668A	—	0.264 U	0.260 U	0.273 U	0.276 U	0.267 U	0.00739 J+	0.252 U	0.260 U	0.264 U	0.252 U	0.255 U	0.254 U	0.281 U	0.277 U
PCB-023	ng/L	E1668A	—	0.268 U	0.264 U	0.277 U	0.280 U	0.270 U	0.268 U	0.256 U	0.264 U	0.268 U	0.256 U	0.259 U	0.258 U	0.285 U	0.281 U
PCB-024	ng/L	E1668A	—	0.416 U	0.410 U	0.430 U	0.435 U	0.420 U	0.416 U	0.397 U	0.410 U	0.416 U	0.397 U	0.403 U	0.401 U	0.443 U	0.437 U
PCB-025	ng/L	E1668A	—	0.0180 J+	0.0320 J	0.227 U	0.229 U	0.222 U	0.219 U	0.209 U	0.0108 J+	0.219 U	0.209 U	0.212 U	0.211 U	0.234 U	0.230 U
PCB-026/029	ng/L	E1668A	—	0.448 U	0.441 U	0.463 U	0.468 U	0.452 U	0.448 U	0.427 U	0.0190 J+	0.448 U	0.427 U	0.433 U	0.00992 J+	0.477 U	0.470 U
PCB-027	ng/L	E1668A	—	0.0447 J+	0.0964 J	0.361 U	0.365 U	0.353 U	0.349 U	0.333 U	0.00503 J+	0.349 U	0.333 U	0.338 U	0.336 U	0.372 U	0.367 U
PCB-031	ng/L	E1668A	—	0.00615 J	0.0134 J+	0.00409 J+	0.459 U	0.0169 J+	0.0145 J+	0.00839 J+	0.0156 J+	0.00659 J+	0.00965 J+	0.425 U	0.0110 J+	0.469 U	0.462 U
PCB-032	ng/L	E1668A	—	0.251 J	0.337 J	0.0195 J+	0.00803 J+	0.0331 J+	0.0147 UJ+	0.333 U	0.0138 UJ+	0.0258 J+	0.333 U	0.338 U	0.0269 J	0.372 U	0.0191 J
PCB-034	ng/L	E1668A	—	0.225 U	0.221 U	0.232 U	0.235 U	0.227 U	0.225 U	0.214 U	0.221 U	0.225 U	0.214 U	0.217 U	0.216 U	0.239 U	0.236 U
PCB-035	ng/L	E1668A	—	0.163 U	0.161 U	0.169 U	0.170 U	0.165 U	0.163 U	0.156 U	0.161 U	0.163 U	0.156 U	0.158 U	0.157 U	0.174 U	0.171 U
PCB-036	ng/L	E1668A	—	0.145 U	0.143 U	0.150 U	0.151 U	0.146 U	0.145 U	0.138 U	0.143 U	0.145 U	0.138 U	0.140 U	0.139 U	0.154 U	0.152 U
PCB-037	ng/L	E1668A	—	0.160 U	0.158 U	0.165 U	0.167 U	0.161 U	0.160 U	0.153 U	0.158 U	0.160 U	0.153 U	0.155 U	0.170 U	0.168 U	0.168 U
PCB-038	ng/L	E1668A	—	0.184 U	0.181 U	0.190 U	0.192 U	0.185 U	0.184 U	0.175 U	0.181 U	0.184 U	0.175 U	0.178 U	0.177 U	0.196 U	0.193 U
PCB-039	ng/L	E1668A	—	0.142 U	0.140 U	0.147 U	0.148 U	0.143 U	0.142 U	0.135 U	0.140 U	0.142 U	0.135 U	0.137 U	0.137 U	0.151 U	0.149 U
PCB-040/041/071	ng/L	E1668A	—	0.0940 J+	0.168 J	0.00241 J+	0.0159 J+	0.0230 J+	0.0255 J+	0.641 U	0.0168 J+	0.0157 J+	0.0154 J+	0.650 U	0.0250 J	0.716 U	0.705 U
PCB-042	ng/L	E1668A	—	0.183 U	0.0152 J+	0.189 U	0.191 U	0.00665 J+	0.183 U	0.175 U	0.180 U	0.00513 J+	0.00734 J+	0.177 U	0.176 U	0.195 U	0.192 U
PCB-043/073	ng/L	E1668A	—	0.0449 J	0.0369 J	0.387 U	0.391 U	0.00359 J+	0.374 U	0.357 U	0.369 U	0.374 U	0.357 U	0.362 U	0.361 U	0.399 U	0.393 U
PCB-044/047/065	ng/L	E1668A	—	0.824	1.												

Table 4-11

Porewater Results

Porewater Location ID				WC-P026		WC-P027		WC-P028		WC-P029		WC-P030		WC-P031		
Region				Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022		
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level												
PCB Congeners																
PCB-001	ng/L	E1668A	—	2.46 U	2.45 U	2.53 U	2.45 U	2.56 U	2.65 U	2.53 U	0.153 J	2.59 U	2.46 U	0.0753 J+	2.53 U	
PCB-002	ng/L	E1668A	—	1.54 U	1.53 U	1.58 U	1.53 U	1.59 U	1.65 U	0.0278 J+	0.0615 J	1.62 U	1.54 U	1.56 U	1.58 U	
PCB-003	ng/L	E1668A	—	1.54 U	1.53 U	1.58 U	1.53 U	1.59 U	1.65 U	0.0313 J	1.71 U	1.62 U	1.54 U	0.0688 J	0.0568 J+	
PCB-004	ng/L	E1668A	—	3.33 U	3.32 U	3.43 U	3.32 U	3.46 U	3.58 U	3.43 U	3.71 U	3.51 U	3.33 U	3.40 U	3.43 U	
PCB-005	ng/L	E1668A	—	0.868 U	0.864 U	0.892 U	0.864 U	0.901 U	0.932 U	0.892 U	0.965 U	0.914 U	0.868 U	0.884 U	0.892 U	
PCB-006	ng/L	E1668A	—	0.723 U	0.719 U	0.743 U	0.719 U	0.750 U	0.776 U	0.743 U	0.804 U	0.761 U	0.723 U	0.736 U	0.743 U	
PCB-007	ng/L	E1668A	—	0.708 U	0.705 U	0.728 U	0.705 U	0.735 U	0.761 U	0.728 U	0.788 U	0.746 U	0.708 U	0.722 U	0.728 U	
PCB-008	ng/L	E1668A	—	1.42 U	0.0916 J+	1.46 U	1.41 U	1.47 U	1.52 U	1.46 U	1.58 U	1.49 U	1.42 U	1.44 U	1.46 U	
PCB-009	ng/L	E1668A	—	0.723 U	0.719 U	0.743 U	0.719 U	0.750 U	0.776 U	0.743 U	0.804 U	0.761 U	0.723 U	0.736 U	0.743 U	
PCB-010	ng/L	E1668A	—	1.13 U	1.12 U	1.16 U	1.12 U	1.17 U	1.21 U	1.16 U	1.26 U	1.19 U	1.13 U	1.15 U	1.16 U	
PCB-011	ng/L	E1668A	—	0.934 U	0.929 U	0.960 U	0.929 U	0.969 U	1.00 U	0.960 U	1.04 U	0.983 U	0.934 U	0.951 U	0.960 U	
PCB-012/013	ng/L	E1668A	—	1.04 U	1.04 U	1.07 U	1.04 U	1.08 U	1.12 U	1.07 U	1.16 U	1.10 U	1.04 U	1.06 U	1.07 U	
PCB-014	ng/L	E1668A	—	0.463 U	0.461 U	0.477 U	0.461 U	0.481 U	0.498 U	0.477 U	0.516 U	0.488 U	0.463 U	0.472 U	0.477 U	
PCB-015	ng/L	E1668A	—	0.445 U	0.443 U	0.458 U	0.443 U	0.462 U	0.478 U	0.458 U	0.495 U	0.469 U	0.445 U	0.453 U	0.458 U	
PCB-016	ng/L	E1668A	—	0.590 U	0.588 U	0.607 U	0.588 U	0.613 U	0.634 U	0.607 U	0.657 U	0.622 U	0.590 U	0.601 U	0.0113 J+	
PCB-017	ng/L	E1668A	—	0.492 U	0.0372 J+	0.506 U	0.490 U	0.511 U	0.529 U	0.506 U	0.548 U	0.519 U	0.492 U	0.502 U	0.506 U	
PCB-018/030	ng/L	E1668A	—	0.0392 J+	0.0510 J+	1.03 U	1.00 U	1.04 U	0.00766 J+	1.03 U	1.12 U	1.06 U	1.00 U	0.00532 J+	0.0103 J+	
PCB-019	ng/L	E1668A	—	0.785 U	0.0266 J+	0.807 U	0.781 U	0.815 U	0.843 U	0.807 U	0.873 U	0.827 U	0.785 U	0.800 U	0.807 U	
PCB-020/028	ng/L	E1668A	—	0.0191 J	0.0236 J+	0.530 U	0.00667 J+	0.535 U	0.0133 J+	0.530 U	0.574 U	0.543 U	0.516 U	0.525 U	0.530 U	
PCB-021/033	ng/L	E1668A	—	0.0123 J+	0.0205 J+	0.604 U	0.585 U	0.610 U	0.631 U	0.604 U	0.654 U	0.619 U	0.588 U	0.599 U	0.604 U	
PCB-022	ng/L	E1668A	—	0.255 U	0.00814 J	0.263 U	0.254 U	0.265 U	0.274 U	0.263 U	0.284 U	0.269 U	0.255 U	0.260 U	0.263 U	
PCB-023	ng/L	E1668A	—	0.259 U	0.258 U	0.266 U	0.258 U	0.269 U	0.278 U	0.266 U	0.288 U	0.273 U	0.259 U	0.264 U	0.266 U	
PCB-024	ng/L	E1668A	—	0.403 U	0.401 U	0.414 U	0.401 U	0.418 U	0.432 U	0.414 U	0.448 U	0.424 U	0.403 U	0.410 U	0.414 U	
PCB-025	ng/L	E1668A	—	0.212 U	0.00351 J	0.218 U	0.211 U	0.220 U	0.228 U	0.218 U	0.236 U	0.224 U	0.212 U	0.216 U	0.218 U	
PCB-026/029	ng/L	E1668A	—	0.433 U	0.00733 J+	0.445 U	0.431 U	0.450 U	0.465 U	0.445 U	0.482 U	0.456 U	0.433 U	0.441 U	0.445 U	
PCB-027	ng/L	E1668A	—	0.338 U	0.336 U	0.348 U	0.336 U	0.351 U	0.363 U	0.348 U	0.00399 J+	0.356 U	0.338 U	0.344 U	0.348 U	
PCB-031	ng/L	E1668A	—	0.0111 J+	0.0140 J+	0.438 U	0.423 U	0.442 U	0.00777 J+	0.438 U	0.00568 J	0.448 U	0.425 U	0.433 U	0.438 U	
PCB-032	ng/L	E1668A	—	0.0243 J+	0.0357 J+	0.348 U	0.00942 J+	0.0175 J+	0.00799 UJ+	0.00904 UJ+	0.00827 UJ+	0.00783 UJ+	0.338 U	0.00826 J+	0.0160 J+	
PCB-034	ng/L	E1668A	—	0.217 U	0.224 U	0.224 U	0.216 U	0.226 U	0.234 U	0.224 U	0.242 U	0.229 U	0.217 U	0.221 U	0.224 U	
PCB-035	ng/L	E1668A	—	0.158 U	0.157 U	0.162 U	0.157 U	0.164 U	0.169 U	0.162 U	0.175 U	0.166 U	0.158 U	0.161 U	0.162 U	
PCB-036	ng/L	E1668A	—	0.140 U	0.139 U	0.144 U	0.139 U	0.145 U	0.150 U	0.144 U	0.156 U	0.148 U	0.140 U	0.143 U	0.144 U	
PCB-037	ng/L	E1668A	—	0.00340 J+	0.154 U	0.159 U	0.154 U	0.161 U	0.166 U	0.159 U	0.172 U	0.163 U	0.155 U	0.158 U	0.159 U	
PCB-038	ng/L	E1668A	—	0.178 U	0.177 U	0.183 U	0.177 U	0.184 U	0.191 U	0.183 U	0.198 U	0.187 U	0.178 U	0.181 U	0.183 U	
PCB-039	ng/L	E1668A	—	0.137 U	0.137 U	0.141 U	0.137 U	0.143 U	0.148 U	0.141 U	0.153 U	0.145 U	0.137 U	0.140 U	0.141 U	
PCB-040/041/071	ng/L	E1668A	—	0.0126 J+	0.647 U	0.668 U	0.647 U	0.675 U	0.0135 J	0.668 U	0.723 U	0.684 U	0.0143 J+	0.662 U	0.00980 J+	
PCB-042	ng/L	E1668A	—	0.177 U	0.176 U	0.182 U	0.176 U	0.184 U	0.190 U	0.182 U	0.197 U	0.187 U	0.177 U	0.180 U	0.182 U	
PCB-043/073	ng/L	E1668A	—	0.362 U	0.361 U	0.373 U	0.361 U	0.376 U	0.389 U	0.373 U	0.403 U	0.382 U	0.362 U	0.369 U	0.373 U	
PCB-044/047/065	ng/L	E1668A	—	0.543 U	0.0541 J+	0.559 U	0.0126 UJ+	0.564 U	0.0132 UJ+	0.559 U	0.0101 UJ+	0.00878 UJ+	0.543 U	0.0129 UJ+	0.0164 UJ+	
PCB-045/051	ng/L	E1668A	—	0.561 U	0.559 U	0.577 U	0.559 U	0.583 U	0.00392 J+	0.577 U	0.625 U	0.591 U	0.561 U	0.572 U	0.577 U	
PCB-046	ng/L	E1668A	—	0.281 U	0.279 U	0.289 U	0.279 U	0.291 U	0.302 U	0.289 U	0.312 U	0.296 U	0.281 U	0.286 U	0.289 U	
PCB-048	ng/L	E1668A	—	0.170 U	0.169 U	0.174 U	0.169 U	0.176 U	0.00262 J+	0.174 U	0.189 U	0.179 U	0.170 U	0.173 U	0.174 U	
PCB-049/069	ng/L	E1668A	—	0.299 U	0.0211 J	0.308 U	0.298 U	0.311 U	0.00900 J+	0.308 U	0.333 U	0.315 U	0.299 U	0.305 U	0.0169 J+	
PCB-050/053	ng/L	E1668A	—	0.458 U	0.456 U	0.471 U	0.456 U	0.476 U	0.492 U	0.471 U	0.510 U	0.483 U	0.458 U	0.467 U	0.00848 J+	
PCB-052	ng/L	E1668A	—	0.0131 J	0.0300 J+	0.156 U	0.151 U	0.00347 J+	0.0118 J+	0.00969 J	0.169 U	0.160 U	0.152 U	0.155 U	0.0172 J+	
PCB-054	ng/L	E1668A	—	0.527 U	0.525 U	0.542 U	0.525 U	0.547 U	0.566 U	0.542 U	0.587 U	0.555 U	0.527 U	0.537 U	0.542 U	
PCB-055	ng/L	E1668A	—	0.0898 U	0.0893 U	0.0923 U	0.0893 U	0.0932 U	0.0964 U	0.0923 U	0.100 U	0.0946 U	0.0898 U	0.0914 U		

Table 4-11
Porewater Results

Porewater Location ID				WC-P003A		WC-P009A		WC-P012		WC-P015		WC-P016		WC-P017		WC-P018		
Region				Shallow		Intermediate		Intermediate		Shallow		Intermediate		Intermediate		Shallow		
Sample Date				10/4/2022		10/4/2022		10/5/2022		10/4/2022		10/4/2022		10/4/2022		10/4/2022		
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level														
PCB-089		ng/L	E1668A	—	0.101 U	0.0984 U	0.101 U	0.0979 U	0.101 U	0.0970 U	0.100 U	0.0984 U	0.0952 U	0.0957 U	0.0988 U	0.0952 U	0.0974 U	0.0957 U
PCB-090/101/113		ng/L	E1668A	—	0.00602 J+	0.0124 J+	0.0127 J+	0.0123 J+	0.00599 J+	0.00522 J+	0.172 U	0.00281 J+	0.0120 J+	0.0131 J+	0.0147 J	0.0120 J+	0.167 U	0.00678 J+
PCB-092		ng/L	E1668A	—	0.0583 U	0.00566 J+	0.00592 J+	0.0564 U	0.0580 U	0.0559 U	0.0577 U	0.0566 U	0.0548 U	0.0551 U	0.00581 J+	0.00274 J+	0.0561 U	0.0551 U
PCB-093/100		ng/L	E1668A	—	0.213 U	0.00538 J+	0.0174 J+	0.00453 J+	0.212 U	0.204 U	0.211 U	0.207 U	0.200 U	0.201 U	0.208 U	0.200 U	0.205 U	0.201 U
PCB-094		ng/L	E1668A	—	0.0901 U	0.0875 U	0.0896 U	0.0871 U	0.0896 U	0.0863 U	0.0892 U	0.0875 U	0.0848 U	0.0851 U	0.0880 U	0.0848 U	0.0867 U	0.0851 U
PCB-095		ng/L	E1668A	—	0.0252 J+	0.0350 J+	0.0215 J+	0.0209 J	0.0197 J+	0.0124 J+	0.0892 U	0.0875 U	0.0203 J+	0.0307 J	0.0264 J	0.0254 J+	0.0867 U	0.0851 U
PCB-096		ng/L	E1668A	—	0.204 U	0.199 U	0.203 U	0.198 U	0.203 U	0.196 U	0.202 U	0.199 U	0.192 U	0.193 U	0.200 U	0.192 U	0.197 U	0.193 U
PCB-098/102		ng/L	E1668A	—	0.0140 J+	0.00976 J+	0.00768 J+	0.174 U	0.00732 J+	0.00928 J+	0.0139 J+	0.174 U	0.169 U	0.0153 J	0.175 U	0.169 U	0.0173 J+	0.170 U
PCB-103		ng/L	E1668A	—	0.0755 U	0.0733 U	0.0751 U	0.0730 U	0.0751 U	0.0723 U	0.0747 U	0.0733 U	0.0710 U	0.0713 U	0.0737 U	0.0710 U	0.0726 U	0.0713 U
PCB-104		ng/L	E1668A	—	0.169 U	0.164 U	0.168 U	0.163 U	0.168 U	0.162 U	0.167 U	0.164 U	0.159 U	0.159 U	0.165 U	0.159 U	0.162 U	0.159 U
PCB-105		ng/L	E1668A	—	0.0330 U	0.0321 U	0.0328 U	0.0319 U	0.0328 U	0.0316 U	0.0327 U	0.0321 U	0.0310 U	0.0312 U	0.0322 U	0.0310 U	0.0318 U	0.0312 U
PCB-106		ng/L	E1668A	—	0.0336 U	0.0327 U	0.0335 U	0.0325 U	0.0335 U	0.0322 U	0.0333 U	0.0327 U	0.0316 U	0.0318 U	0.0328 U	0.0316 U	0.0324 U	0.0318 U
PCB-107		ng/L	E1668A	—	0.0294 U	0.0286 U	0.0293 U	0.0285 U	0.0293 U	0.0282 U	0.0292 U	0.0286 U	0.0277 U	0.0278 U	0.0287 U	0.0277 U	0.0283 U	0.0278 U
PCB-108/124		ng/L	E1668A	—	0.0585 U	0.0568 U	0.0582 U	0.0566 U	0.0582 U	0.0561 U	0.0579 U	0.0568 U	0.0550 U	0.0553 U	0.0571 U	0.0550 U	0.0563 U	0.0553 U
PCB-110/115		ng/L	E1668A	—	0.00782 J+	0.0170 J	0.0915 U	0.0890 U	0.00156 J+	0.0882 U	0.0911 U	0.00143 J+	0.00770 J+	0.0113 J	0.00835 J+	0.0113 J	0.0886 U	0.00587 J
PCB-111		ng/L	E1668A	—	0.0267 U	0.0259 U	0.0265 U	0.0258 U	0.0265 U	0.0256 U	0.0264 U	0.0259 U	0.0251 U	0.0252 U	0.0260 U	0.0251 U	0.0257 U	0.0252 U
PCB-112		ng/L	E1668A	—	0.0483 U	0.0470 U	0.0481 U	0.0468 U	0.0481 U	0.0463 U	0.0479 U	0.0470 U	0.0455 U	0.0457 U	0.0472 U	0.0455 U	0.0465 U	0.0457 U
PCB-114		ng/L	E1668A	—	0.00604 J+	0.0319 U	0.00784 J+	0.00591 J+	0.00255 J+	0.0315 U	0.00325 J+	0.0319 U	0.0309 U	0.00391 J+	0.00500 J+	0.0309 U	0.00695 J+	0.00270 J+
PCB-118		ng/L	E1668A	—	0.00210 J	0.00697 J	0.0275 U	0.0267 U	0.00126 J+	0.0264 U	0.0273 U	0.0268 U	0.0260 U	0.00261 J+	0.00490 J	0.00280 J	0.0266 U	0.0261 U
PCB-120		ng/L	E1668A	—	0.0254 U	0.0247 U	0.0253 U	0.0246 U	0.0253 U	0.0244 U	0.0252 U	0.0247 U	0.0239 U	0.0240 U	0.0248 U	0.0239 U	0.0245 U	0.0240 U
PCB-121		ng/L	E1668A	—	0.0335 U	0.0326 U	0.0333 U	0.0324 U	0.0333 U	0.0321 U	0.0332 U	0.0326 U	0.0315 U	0.0317 U	0.0327 U	0.0315 U	0.0323 U	0.0317 U
PCB-122		ng/L	E1668A	—	0.0335 U	0.0326 U	0.0333 U	0.0324 U	0.0333 U	0.0321 U	0.0332 U	0.0326 U	0.0315 U	0.0317 U	0.0327 U	0.0315 U	0.0323 U	0.0317 U
PCB-123		ng/L	E1668A	—	0.0279 U	0.0271 U	0.0277 U	0.0269 U	0.0277 U	0.0267 U	0.0276 U	0.0271 U	0.0262 U	0.0263 U	0.0272 U	0.0262 U	0.0268 U	0.0263 U
PCB-126		ng/L	E1668A	—	0.0210 U	0.0204 U	0.0209 U	0.00288 J+	0.00225 J+	0.00297 J+	0.00224 J+	0.0204 U	0.00272 J+	0.0198 U	0.00368 J+	0.00292 J+	0.00525 J+	0.00403 J+
PCB-127		ng/L	E1668A	—	0.0187 U	0.0182 U	0.0186 U	0.0181 U	0.0186 U	0.0179 U	0.0185 U	0.0182 U	0.0176 U	0.0177 U	0.0183 U	0.0176 U	0.0180 U	0.0177 U
PCB-128/166		ng/L	E1668A	—	0.0556 U	0.0541 U	0.000133 J+	0.000377 J+	0.0554 U	0.0533 U	0.0551 U	0.000541 J+	0.0523 U	0.0526 U	0.00103 J+	0.00115 J+	0.0536 U	0.0526 U
PCB-129/138/160/163		ng/L	E1668A	—	0.00346 J+	0.00441 J+	0.00621 J+	0.00356 J+	0.113 U	0.00147 J	0.112 U	0.110 U	0.00283 J+	0.00472 J+	0.00426 J+	0.00587 J+	0.00159 J+	0.000690 J+
PCB-130		ng/L	E1668A	—	0.0248 U	0.0241 U	0.0247 U	0.0240 U	0.0247 U	0.0238 U	0.0246 U	0.0241 U	0.0234 U	0.0235 U	0.0242 U	0.0234 U	0.0239 U	0.0235 U
PCB-131		ng/L	E1668A	—	0.0377 U	0.0366 U	0.0375 U	0.0365 U	0.0375 U	0.0361 U	0.0373 U	0.0366 U	0.0355 U	0.0356 U	0.0368 U	0.0355 U	0.0363 U	0.0356 U
PCB-132		ng/L	E1668A	—	0.0377 U	0.00300 J+	0.000308 J+	0.00270 J+	0.0375 U	0.0361 U	0.0373 U	0.0366 U	0.00305 J	0.000784 J+	0.00272 J+	0.000851 J+	0.0363 U	0.000717 J+
PCB-133		ng/L	E1668A	—	0.0222 U	0.0215 U	0.0221 U	0.0214 U	0.0221 U	0.0213 U	0.0220 U	0.0215 U	0.0209 U	0.0210 U	0.0217 U	0.0209 U	0.0213 U	0.0210 U
PCB-134/143		ng/L	E1668A	—	0.0799 U	0.0776 U	0.000278 J+	0.0772 U	0.0795 U	0.0765 U	0.0791 U	0.0776 U	0.0751 U	0.0755 U	0.0780 U	0.0751 U	0.0769 U	0.0755 U
PCB-135/151		ng/L	E1668A	—	0.00114 J+	0.00124 J+	0.0669 U	0.00325 J+	0.000663 J+	0.0645 U	0.000413 J+	0.0654 U	0.00304 J+	0.00242 J+	0.00302 J+	0.00291 J+	0.0648 U	0.000422 J+
PCB-136		ng/L	E1668A	—	0.0755 U	0.00484 J+	0.0751 U	0.0730 U	0.0751 U	0.0723 U	0.0747 U	0.0733 U	0.00156 J+	0.00442 J+	0.00442 J+	0.000270 J+	0.0726 U	0.0713 U
PCB-137		ng/L	E1668A	—														

Table 4-11
Porewater Results

Porewater Location ID				WC-P019		WC-P020		WC-P021		WC-P022		WC-P023		WC-P024		WC-P025		
Region				Intermediate		Shallow		Intermediate		Intermediate		Shallow		Shallow		Shallow		
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022		10/4/2022		
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level														
PCB-089		ng/L	E1668A	—	0.100 U	0.0984 U	0.103 U	0.104 U	0.101 U	0.100 U	0.0952 U	0.0984 U	0.100 U	0.0952 U	0.0965 U	0.0961 U	0.106 U	0.105 U
PCB-090/101/113		ng/L	E1668A	—	0.00731 J+	0.0158 J+	0.177 U	0.0131 J+	0.00772 J+	0.00708 J+	0.163 U	0.169 U	0.00251 J+	0.00338 J+	0.00674 J+	0.00957 J+	0.00195 J+	0.0216 J
PCB-092		ng/L	E1668A	—	0.0575 U	0.00544 J+	0.0594 U	0.0600 U	0.0580 U	0.00437 J+	0.0548 U	0.00306 J+	0.0575 U	0.0548 U	0.0556 U	0.0553 U	0.0613 U	0.0603 U
PCB-093/100		ng/L	E1668A	—	0.0588 J+	0.0414 J+	0.217 U	0.219 U	0.212 U	0.210 U	0.200 U	0.207 U	0.210 U	0.200 U	0.203 U	0.202 U	0.224 U	0.221 U
PCB-094		ng/L	E1668A	—	0.0888 U	0.0875 U	0.0919 U	0.0928 U	0.0896 U	0.0888 U	0.0848 U	0.0875 U	0.0888 U	0.0848 U	0.0859 U	0.0855 U	0.0947 U	0.0932 U
PCB-095		ng/L	E1668A	—	0.0213 J	0.0156 J+	0.00937 J+	0.0260 J	0.0134 J+	0.0135 J+	0.0848 U	0.0112 J+	0.00693 J+	0.0203 J	0.0143 J	0.0101 J+	0.0947 U	0.0392 J+
PCB-096		ng/L	E1668A	—	0.201 U	0.0147 J+	0.208 U	0.210 U	0.203 U	0.201 U	0.192 U	0.199 U	0.201 U	0.192 U	0.195 U	0.194 U	0.215 U	0.212 U
PCB-098/102		ng/L	E1668A	—	0.0195 J+	0.0331 J	0.183 U	0.185 U	0.0157 J+	0.0129 J+	0.0116 J+	0.174 U	0.0136 J+	0.0162 J	0.0157 J	0.0104 J+	0.0153 J+	0.186 U
PCB-103		ng/L	E1668A	—	0.00982 J+	0.0161 J+	0.0769 U	0.0777 U	0.0751 U	0.0744 U	0.0710 U	0.0733 U	0.0744 U	0.0710 U	0.0720 U	0.0716 U	0.0793 U	0.0781 U
PCB-104		ng/L	E1668A	—	0.0249 J	0.0177 J+	0.172 U	0.174 U	0.168 U	0.166 U	0.159 U	0.164 U	0.166 U	0.159 U	0.161 U	0.160 U	0.177 U	0.175 U
PCB-105		ng/L	E1668A	—	0.0325 U	0.0321 U	0.0336 U	0.0340 U	0.00236 J+	0.00169 J+	0.0310 U	0.0321 U	0.0325 U	0.0310 U	0.0315 U	0.0313 U	0.0347 U	0.0341 U
PCB-106		ng/L	E1668A	—	0.0331 U	0.0327 U	0.0343 U	0.0346 U	0.0335 U	0.0331 U	0.00133 J+	0.0327 U	0.0331 U	0.0316 U	0.0321 U	0.0319 U	0.0353 U	0.0348 U
PCB-107		ng/L	E1668A	—	0.0290 U	0.0286 U	0.0300 U	0.0303 U	0.0293 U	0.0290 U	0.0277 U	0.0286 U	0.0290 U	0.0277 U	0.0281 U	0.0280 U	0.0309 U	0.0305 U
PCB-108/124		ng/L	E1668A	—	0.0577 U	0.0568 U	0.0596 U	0.0602 U	0.0582 U	0.0577 U	0.0550 U	0.0568 U	0.0577 U	0.0550 U	0.0558 U	0.0555 U	0.0615 U	0.0605 U
PCB-110/115		ng/L	E1668A	—	0.0907 U	0.00277 J+	0.00328 J+	0.00682 J	0.00549 J+	0.00744 J+	0.0866 U	0.00250 J+	0.0907 U	0.0866 U	0.0877 U	0.00445 J+	0.00155 J+	0.0124 J
PCB-111		ng/L	E1668A	—	0.0263 U	0.0259 U	0.0272 U	0.0275 U	0.0265 U	0.0263 U	0.0251 U	0.0259 U	0.0263 U	0.0251 U	0.0254 U	0.0253 U	0.0280 U	0.0276 U
PCB-112		ng/L	E1668A	—	0.0476 U	0.0470 U	0.0493 U	0.0498 U	0.0481 U	0.0476 U	0.0455 U	0.0470 U	0.0476 U	0.0455 U	0.0461 U	0.0459 U	0.0508 U	0.0500 U
PCB-114		ng/L	E1668A	—	0.00453 J+	0.00242 J+	0.00462 J+	0.00291 J+	0.00555 J+	0.00447 UJ+	0.00525 J+	0.0319 U	0.00498 J+	0.00278 J+	0.0313 U	0.00505 J+	0.00366 J+	0.00421 J+
PCB-118		ng/L	E1668A	—	0.0272 U	0.00316 J	0.0281 U	0.00273 J+	0.00269 J+	0.00294 J+	0.0260 U	0.0268 U	0.00190 J+	0.00166 J+	0.0263 U	0.00199 J+	0.0290 U	0.00348 J+
PCB-120		ng/L	E1668A	—	0.0250 U	0.0247 U	0.0259 U	0.0262 U	0.0253 U	0.0250 U	0.0239 U	0.0247 U	0.0250 U	0.0239 U	0.0242 U	0.000309 J+	0.0267 U	0.0263 U
PCB-121		ng/L	E1668A	—	0.0330 U	0.0326 U	0.0342 U	0.0345 U	0.0333 U	0.0330 U	0.0315 U	0.0326 U	0.0330 U	0.0315 U	0.0320 U	0.0318 U	0.0352 U	0.0347 U
PCB-122		ng/L	E1668A	—	0.0330 U	0.0326 U	0.0342 U	0.0345 U	0.0333 U	0.0330 U	0.0315 U	0.0326 U	0.0330 U	0.0315 U	0.0320 U	0.0318 U	0.0352 U	0.0347 U
PCB-123		ng/L	E1668A	—	0.0275 U	0.0271 U	0.0284 U	0.0287 U	0.00133 J+	0.0275 U	0.0262 U	0.0271 U	0.0275 U	0.0262 U	0.0266 U	0.0265 U	0.0293 U	0.0288 U
PCB-126		ng/L	E1668A	—	0.00380 J+	0.00354 J+	0.00154 J+	0.00216 J+	0.00584 J+	0.00376 J+	0.0197 U	0.00399 J+	0.0207 U	0.00316 J+	0.0200 U	0.00302 J+	0.00176 J+	0.00273 J+
PCB-127		ng/L	E1668A	—	0.0185 U	0.0182 U	0.0191 U	0.0193 U	0.0186 U	0.0185 U	0.0176 U	0.0182 U	0.0185 U	0.0176 U	0.0179 U	0.0178 U	0.0197 U	0.0194 U
PCB-128/166		ng/L	E1668A	—	0.0548 U	0.0541 U	0.0567 U	0.0573 U	0.0554 U	0.0548 U	0.000523 J+	0.0541 U	0.0548 U	0.0523 U	0.0531 U	0.0528 U	0.000164 J+	0.000576 J+
PCB-129/138/160/163		ng/L	E1668A	—	0.00559 J	0.00716 J+	0.00104 J+	0.000817 J+	0.00367 J+	0.00386 J+	0.107 U	0.00116 UJ+	0.112 U	0.00261 J+	0.00135 J+	0.000646 J+	0.00280 J	0.00645 J
PCB-130		ng/L	E1668A	—	0.0245 U	0.0241 U	0.0253 U	0.0256 U	0.0247 U	0.0245 U	0.0234 U	0.0241 U	0.0245 U	0.0234 U	0.0237 U	0.0236 U	0.0261 U	0.0257 U
PCB-131		ng/L	E1668A	—	0.0372 U	0.0366 U	0.0384 U	0.0388 U	0.0375 U	0.0372 U	0.0355 U	0.0366 U	0.0372 U	0.0355 U	0.0360 U	0.0358 U	0.0396 U	0.0390 U
PCB-132		ng/L	E1668A	—	0.0372 U	0.000366 J+	0.0384 U	0.0388 U	0.0375 U	0.0372 U	0.0355 U	0.000528 J+	0.0372 U	0.00121 J	0.0360 U	0.00129 J+	0.0396 U	0.00203 J+
PCB-133		ng/L	E1668A	—	0.0219 U	0.0215 U	0.0226 U	0.0228 U	0.0221 U	0.0219 U	0.0209 U	0.0215 U	0.0219 U	0.0209 U	0.0212 U	0.0211 U	0.0233 U	0.0230 U
PCB-134/143		ng/L	E1668A	—	0.0787 U	0.0776 U	0.0814 U	0.0822 U	0.0795 U	0.0787 U	0.0751 U	0.0776 U	0.0787 U	0.0751 U	0.0762 U	0.0758 U	0.0839 U	0.0827 U
PCB-135/151		ng/L	E1668A	—	0.000365 J+	0.00850 J	0.0686 U	0.0693 U	0.00161 J+	0.000610 J+	0.000373 J+	0.000203 J+	0.000537 J+	0.000633 J+	0.0642 U	0.0639 U	0.0707 U	0.00153 J+
PCB-136		ng/L	E1668A	—	0.00193 J+	0.00851 J	0.0769 U	0.0777 U	0.00225 J+	0.0744 U	0.0710 U	0.0733 U	0.0744 U	0.0710 U	0.0720 U	0.0716 U	0.0793 U	0.00266 J
PCB-137		ng/L	E16681															

Table 4-11

Groundwater Results

Porewater Location ID				WC-P026		WC-P027		WC-P028		WC-P029		WC-P030		WC-P031		
Region				Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022		
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	
Screening Criteria		Reporting Units	Analytical Method	Table 17 ROD Cleanup Level												
PCB-089		ng/L	E1668A	—	0.0965 U	0.0961 U	0.0993 U	0.0961 U	0.100 U	0.104 U	0.0993 U	0.107 U	0.102 U	0.0965 U	0.0984 U	0.0993 U
PCB-090/101/113		ng/L	E1668A	—	0.00398 J+	0.00858 J+	0.170 U	0.00297 J+	0.172 U	0.00570 J+	0.00511 J+	0.00381 J+	0.175 U	0.166 U	0.169 U	0.00489 J+
PCB-092		ng/L	E1668A	—	0.0556 U	0.00188 J+	0.0572 U	0.0553 U	0.0577 U	0.0597 U	0.0572 U	0.0619 U	0.0586 U	0.0556 U	0.0566 U	0.0572 U
PCB-093/100		ng/L	E1668A	—	0.203 U	0.202 U	0.209 U	0.202 U	0.211 U	0.218 U	0.209 U	0.226 U	0.214 U	0.203 U	0.207 U	0.209 U
PCB-094		ng/L	E1668A	—	0.0859 U	0.0855 U	0.0884 U	0.0855 U	0.0892 U	0.0923 U	0.0884 U	0.0956 U	0.0905 U	0.0859 U	0.0875 U	0.0884 U
PCB-095		ng/L	E1668A	—	0.00756 J+	0.0161 J	0.0884 U	0.00342 J+	0.0892 U	0.00905 J+	0.00795 J+	0.0140 J	0.0905 U	0.00584 J+	0.0875 U	0.00654 J+
PCB-096		ng/L	E1668A	—	0.195 U	0.194 U	0.200 U	0.194 U	0.202 U	0.209 U	0.200 U	0.217 U	0.205 U	0.195 U	0.199 U	0.200 U
PCB-098/102		ng/L	E1668A	—	0.00787 J+	0.0119 J	0.176 U	0.0165 J+	0.178 U	0.0129 J+	0.0143 J+	0.0128 J+	0.0178 J+	0.00770 J+	0.0171 J	0.176 U
PCB-103		ng/L	E1668A	—	0.0720 U	0.0716 U	0.0740 U	0.0716 U	0.0747 U	0.0773 U	0.0740 U	0.0801 U	0.0758 U	0.0720 U	0.0733 U	0.0740 U
PCB-104		ng/L	E1668A	—	0.161 U	0.160 U	0.165 U	0.160 U	0.167 U	0.173 U	0.165 U	0.179 U	0.169 U	0.161 U	0.164 U	0.165 U
PCB-105		ng/L	E1668A	—	0.0315 U	0.0313 U	0.0324 U	0.0313 U	0.0327 U	0.0338 U	0.0324 U	0.0350 U	0.0332 U	0.0315 U	0.0321 U	0.0324 U
PCB-106		ng/L	E1668A	—	0.0321 U	0.0319 U	0.0330 U	0.0319 U	0.0333 U	0.0345 U	0.0330 U	0.0357 U	0.0338 U	0.0321 U	0.0327 U	0.0330 U
PCB-107		ng/L	E1668A	—	0.0281 U	0.0280 U	0.0289 U	0.0280 U	0.0292 U	0.0302 U	0.0289 U	0.0313 U	0.0296 U	0.0281 U	0.0286 U	0.0289 U
PCB-108/124		ng/L	E1668A	—	0.0558 U	0.0555 U	0.0574 U	0.0555 U	0.0579 U	0.0599 U	0.0574 U	0.0621 U	0.0588 U	0.0558 U	0.0568 U	0.0574 U
PCB-110/115		ng/L	E1668A	—	0.00114 J+	0.00454 J+	0.00180 J+	0.00271 J+	0.0911 U	0.0943 U	0.00307 J+	0.00166 J+	0.0924 U	0.0877 U	0.0894 U	0.00605 J
PCB-111		ng/L	E1668A	—	0.0254 U	0.0253 U	0.0262 U	0.0253 U	0.0264 U	0.0273 U	0.0262 U	0.0283 U	0.0268 U	0.0254 U	0.0259 U	0.0262 U
PCB-112		ng/L	E1668A	—	0.0461 U	0.0459 U	0.0474 U	0.0459 U	0.0479 U	0.0495 U	0.0474 U	0.0513 U	0.0486 U	0.0461 U	0.0470 U	0.0474 U
PCB-114		ng/L	E1668A	—	0.00294 UJ+	0.0312 U	0.00644 J+	0.00374 J+	0.00650 J+	0.00431 J+	0.00502 J+	0.00397 J+	0.00534 J+	0.00288 J+	0.0319 U	0.0322 U
PCB-118		ng/L	E1668A	—	0.0263 U	0.00173 J+	0.0271 U	0.0262 U	0.0273 U	0.00113 J+	0.00179 J	0.00117 J+	0.0277 U	0.0263 U	0.0268 U	0.0271 U
PCB-120		ng/L	E1668A	—	0.0242 U	0.0241 U	0.0249 U	0.0241 U	0.0252 U	0.0260 U	0.0249 U	0.0270 U	0.0255 U	0.0242 U	0.0247 U	0.0249 U
PCB-121		ng/L	E1668A	—	0.0320 U	0.0318 U	0.0329 U	0.0318 U	0.0332 U	0.0343 U	0.0329 U	0.0356 U	0.0337 U	0.0320 U	0.0326 U	0.0329 U
PCB-122		ng/L	E1668A	—	0.0320 U	0.00388 J+	0.0329 U	0.0318 U	0.0332 U	0.0343 U	0.0329 U	0.0356 U	0.0337 U	0.0320 U	0.0326 U	0.0329 U
PCB-123		ng/L	E1668A	—	0.0266 U	0.0265 U	0.0273 U	0.0265 U	0.0276 U	0.0285 U	0.0273 U	0.0296 U	0.0280 U	0.0266 U	0.0271 U	0.0273 U
PCB-126		ng/L	E1668A	—	0.00312 J+	0.00239 J+	0.0206 U	0.0199 U	0.00253 J+	0.00344 J+	0.00177 J+	0.000801 J+	0.00215 J+	0.0200 U	0.00293 J+	0.0206 U
PCB-127		ng/L	E1668A	—	0.0179 U	0.0178 U	0.0184 U	0.0178 U	0.0185 U	0.0192 U	0.0184 U	0.0199 U	0.0188 U	0.0179 U	0.0182 U	0.0184 U
PCB-128/166		ng/L	E1668A	—	0.0531 U	0.0528 U	0.0546 U	0.0528 U	0.0551 U	0.0570 U	0.000982 J+	0.000242 J+	0.0559 U	0.0531 U	0.0541 U	0.0546 U
PCB-129/138/160/163		ng/L	E1668A	—	0.108 U	0.00231 J+	0.111 U	0.000700 J+	0.000898 UJ+	0.00174 UJ+	0.00306 J+	0.00259 J+	0.114 U	0.108 U	0.000606 J+	0.00300 J
PCB-130		ng/L	E1668A	—	0.0237 U	0.0236 U	0.0244 U	0.0236 U	0.0246 U	0.0254 U	0.0244 U	0.0264 U	0.0250 U	0.0237 U	0.0241 U	0.0244 U
PCB-131		ng/L	E1668A	—	0.0360 U	0.0358 U	0.0370 U	0.0358 U	0.0373 U	0.0386 U	0.0370 U	0.0400 U	0.0379 U	0.0360 U	0.0366 U	0.0370 U
PCB-132		ng/L	E1668A	—	0.0360 U	0.000788 J+	0.0370 U	0.0358 U	0.0373 U	0.00155 J	0.00104 J+	0.00288 J	0.0379 U	0.0360 U	0.0366 U	0.0370 U
PCB-133		ng/L	E1668A	—	0.0212 U	0.0211 U	0.0218 U	0.0211 U	0.0220 U	0.0227 U	0.0218 U	0.0235 U	0.0223 U	0.0212 U	0.0215 U	0.0218 U
PCB-134/143		ng/L	E1668A	—	0.0762 U	0.0758 U	0.0783 U	0.0758 U	0.0791 U	0.0818 U	0.0783 U	0.0848 U	0.0802 U	0.0762 U	0.0776 U	0.0783 U
PCB-135/151		ng/L	E1668A	—	0.0642 U	0.000639 J+	0.0660 U	0.0639 U	0.0666 U	0.0689 U	0.00238 J+	0.00293 J+	0.0676 U	0.0642 U	0.0654 U	0.0660 U
PCB-136		ng/L	E1668A	—	0.0720 U	0.0716 U	0.0740 U	0.0716 U	0.0747 U	0.0773 U	0.000740 J+	0.00154 J+	0.0758 U	0.0720 U	0.0733 U	0.0740 U
PCB-137		ng/L	E1668A	—	0.0224 U	0.0223 U	0.0230 U	0.0223 U	0.0232 U	0.0240 U	0.0230 U	0.0249 U	0.0236 U	0.0224 U	0.0228 U	0.0230 U
PCB-139/140		ng/L	E1668A	—	0.0608 U	0.0605 U	0.0625 U	0.0605 U	0.0631 U	0.0653 U	0.0625 U	0.0677 U	0.0641 U	0.0608 U	0.0620 U	0.0625 U
PCB-141		ng/L	E1668A	—	0.0228 U	0.0227 U	0.0234 U	0.0227 U	0.0237 U	0.0245 U	0.0234 U	0.0254 U	0.0240 U	0.0228 U	0.0232 U	0.0234 U
PCB-142		ng/L	E1668A	—	0.0409 U	0.0407 U	0.0421 U	0.0407 U	0.0425 U	0.0439 U	0.0421 U	0.0455 U	0.0431 U	0.0409 U	0.0417 U	0.0421 U
PCB-144		ng/L	E1668A	—	0.0310 U	0.0308 U	0.0318 U	0.0308 U	0.0321 U	0.0333 U	0.0318 U	0.0345 U	0.0326 U	0.0310 U	0.0315 U	0.0318 U
PCB-145		ng/L	E1668A	—	0.0681 U	0.0678 U	0.0701 U	0.0678 U	0.0707 U	0.0732 U	0.0701 U	0.0758 U	0.0718 U	0.0681 U	0.0694 U	0.0701 U
PCB-146		ng/L	E1668A	—	0.0198 U	0.0197 U	0.0204 U	0.0197 U	0.0206 U	0.0213 U	0.000857 J+	0.0221 U	0.0209 U	0.0198 U	0.0202 U	0.0204 U
PCB-147/149																

Table 4-11

Porewater Results

Porewater Location ID				WC-P003A		WC-P009A		WC-P012		WC-P015		WC-P016		WC-P017		WC-P018	
Region				Shallow		Intermediate		Intermediate		Shallow		Intermediate		Intermediate		Shallow	
Sample Date				10/4/2022		10/4/2022		10/5/2022		10/4/2022		10/4/2022		10/4/2022		10/4/2022	
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0
Screening Criteria	Reporting Units	Analytical Method	Table 17 ROD Cleanup Level														
PCB-184	ng/L	E1668A	—	0.0227 U	0.0220 U	0.0226 U	0.0219 U	0.0226 U	0.0217 U	0.0225 U	0.0220 U	0.0213 U	0.0214 U	0.0222 U	0.0213 U	0.0218 U	0.0214 U
PCB-186	ng/L	E1668A	—	0.0306 U	0.0297 U	0.0304 U	0.0296 U	0.0304 U	0.0293 U	0.0303 U	0.0297 U	0.0287 U	0.0289 U	0.0298 U	0.0287 U	0.0294 U	0.0289 U
PCB-187	ng/L	E1668A	—	0.0124 U	0.0000601 J+	0.000419 J+	0.000575 J+	0.0123 U	0.0119 U	0.0123 U	0.0120 U	0.0000349 J+	0.0117 U	0.000290 J+	0.000932 J+	0.000145 J+	0.0000328 J+
PCB-188	ng/L	E1668A	—	0.0238 U	0.0231 U	0.0237 U	0.0230 U	0.0237 U	0.0228 U	0.0236 U	0.0231 U	0.0224 U	0.0225 U	0.0232 U	0.0224 U	0.0229 U	0.0225 U
PCB-189	ng/L	E1668A	—	0.00461 U	0.00448 U	0.00459 U	0.00446 U	0.00459 U	0.00442 U	0.00457 U	0.00448 U	0.00434 U	0.00436 U	0.00450 U	0.00434 U	0.00444 U	0.00436 U
PCB-190	ng/L	E1668A	—	0.00728 U	0.00707 U	0.00724 U	0.00704 U	0.00724 U	0.00697 U	0.00721 U	0.00707 U	0.00685 U	0.00688 U	0.00710 U	0.00685 U	0.00701 U	0.00688 U
PCB-191	ng/L	E1668A	—	0.00625 U	0.00607 U	0.00621 U	0.00604 U	0.00621 U	0.00598 U	0.00619 U	0.00607 U	0.00588 U	0.00590 U	0.00610 U	0.00588 U	0.00601 U	0.00590 U
PCB-192	ng/L	E1668A	—	0.00652 U	0.00634 U	0.00649 U	0.00631 U	0.00649 U	0.00625 U	0.00646 U	0.00634 U	0.00614 U	0.00616 U	0.00637 U	0.00614 U	0.00628 U	0.00616 U
PCB-194	ng/L	E1668A	—	0.000119 J+	0.00386 U	0.00395 U	0.000108 J	0.00395 U	0.00381 U	0.00394 U	0.00386 U	0.00374 U	0.00376 U	0.0000931 J+	0.00374 U	0.00383 U	0.00376 U
PCB-195	ng/L	E1668A	—	0.00611 U	0.00594 U	0.00608 U	0.00591 U	0.00608 U	0.00586 U	0.00605 U	0.00594 U	0.00575 U	0.00578 U	0.00597 U	0.00575 U	0.00588 U	0.00578 U
PCB-196	ng/L	E1668A	—	0.00514 U	0.00499 U	0.00511 U	0.00497 U	0.000102 J+	0.00492 U	0.00509 U	0.000260 J+	0.00483 U	0.000184 J+	0.000542 J+	0.000261 J+	0.00494 U	0.000286 J+
PCB-197	ng/L	E1668A	—	0.00969 U	0.00942 U	0.00965 U	0.00938 U	0.00965 U	0.00929 U	0.00960 U	0.00942 U	0.00912 U	0.00916 U	0.00947 U	0.00912 U	0.00933 U	0.00916 U
PCB-198/199	ng/L	E1668A	—	0.0110 U	0.0107 U	0.0109 U	0.0106 U	0.000229 J	0.0105 U	0.0109 U	0.0107 U	0.0103 U	0.000135 J+	0.0107 U	0.0103 U	0.0106 U	0.0104 U
PCB-200	ng/L	E1668A	—	0.0103 U	0.0101 U	0.0103 U	0.000260 J	0.0103 U	0.000516 J+	0.000554 J+	0.0101 U	0.00974 U	0.00978 U	0.000344 J+	0.00974 U	0.00120 J+	0.000825 J+
PCB-201	ng/L	E1668A	—	0.00548 U	0.00533 U	0.00546 U	0.00530 U	0.00546 U	0.00525 U	0.00543 U	0.00533 U	0.00516 U	0.00518 U	0.00535 U	0.00516 U	0.00528 U	0.00518 U
PCB-202	ng/L	E1668A	—	0.0108 U	0.0105 U	0.0108 U	0.0105 U	0.0108 U	0.0104 U	0.0107 U	0.0105 U	0.0102 U	0.0102 U	0.0106 U	0.0102 U	0.0104 U	0.0102 U
PCB-203	ng/L	E1668A	—	0.00514 U	0.00499 U	0.00511 U	0.00497 U	0.00511 U	0.00492 U	0.00509 U	0.00499 U	0.00483 U	0.00485 U	0.00501 U	0.00483 U	0.00494 U	0.00485 U
PCB-204	ng/L	E1668A	—	0.00969 U	0.00942 U	0.00965 U	0.00938 U	0.00965 U	0.00929 U	0.00960 U	0.00942 U	0.00912 U	0.00916 U	0.00947 U	0.00912 U	0.00933 U	0.00916 U
PCB-205	ng/L	E1668A	—	0.00277 U	0.00269 U	0.00276 U	0.00268 U	0.00276 U	0.00266 U	0.00275 U	0.00269 U	0.00261 U	0.00262 U	0.00271 U	0.00261 U	0.00267 U	0.00262 U
PCB-206	ng/L	E1668A	—	0.00234 U	0.00227 U	0.00233 U	0.00226 U	0.00233 U	0.00224 U	0.00232 U	0.00227 U	0.00220 U	0.00221 U	0.00228 U	0.00220 U	0.00225 U	0.00221 U
PCB-207	ng/L	E1668A	—	0.00442 U	0.00430 U	0.00440 U	0.00428 U	0.00440 U	0.00424 U	0.00438 U	0.00430 U	0.00416 U	0.00418 U	0.00432 U	0.00416 U	0.00426 U	0.00418 U
PCB-208	ng/L	E1668A	—	0.00461 U	0.00448 U	0.00459 U	0.00446 U	0.00459 U	0.00442 U	0.00457 U	0.00448 U	0.00434 U	0.00436 U	0.00450 U	0.00434 U	0.00444 U	0.00436 U
PCB-209	ng/L	E1668A	—	0.00203 U	0.00198 U	0.00202 U	0.00197 U	0.00202 U	0.00195 U	0.00201 U	0.00198 U	0.00191 U	0.00192 U	0.00198 U	0.00191 U	0.00196 U	0.00192 U
Total PCBs Congeners	ng/L	E1668A	14	15.4 J+	14.5 J+	15.8 J+	16.1 J+	15.9 J+	15.6 J+	17.8 J+	17.6 J+	10.7 J+	12.8 J+	11.7 J+	12.7 J+	16.5 J+	12.5 J+
Conventionals																	
Dissolved Organic Carbon	mg/L	SM5310C	—	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	22.2	24.4	15.7	21.5	8.00 U	9.27
Anions																	
Bromide	ppm	TTU_Anions	—	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U
Chloride	ppm	TTU_Anions	—	4.44	4.37	5.04	4.18	5.52	5.21	4.97	5.27	5.47	6.21	6.09	7.05	4.38	4.96
Nitrate (as N)	ppm	TTU_Anions	—	0.765	0.764	0.768	0.744	2.21	2.22	0.778	0.784	0.767	0.790	0.770	0.783	0.789	0.771
Sulfate	ppm	TTU_Anions	—	3.24	3.14	3.37	3.18	14.8	14.8	3.17	3.18	3.33	3.25	3.28	3.25	3.14	3.11

Table 4-11
Porewater Results

Porewater Location ID				WC-P019		WC-P020		WC-P021		WC-P022		WC-P023		WC-P024		WC-P025	
Region				Intermediate		Shallow		Intermediate		Intermediate		Shallow		Shallow		Shallow	
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022		10/4/2022	
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0
Screening Criteria	Reporting Units	Analytical Method	Table 17 ROD Cleanup Level														
PCB-184	ng/L	E1668A	—	0.0224 U	0.0220 U	0.0231 U	0.0234 U	0.0226 U	0.0224 U	0.0213 U	0.0220 U	0.0224 U	0.0213 U	0.0216 U	0.0215 U	0.0238 U	0.0235 U
PCB-186	ng/L	E1668A	—	0.0301 U	0.0297 U	0.0312 U	0.0315 U	0.0304 U	0.0301 U	0.0287 U	0.0297 U	0.0301 U	0.0287 U	0.0291 U	0.0290 U	0.0321 U	0.0316 U
PCB-187	ng/L	E1668A	—	0.0122 U	0.0000794 J+	0.000225 J+	0.0127 U	0.000320 J+	0.000293 J+	0.0116 U	0.0120 U	0.0122 U	0.0116 U	0.0118 U	0.0000752 J+	0.0130 U	0.000220 J+
PCB-188	ng/L	E1668A	—	0.0235 U	0.0231 U	0.0243 U	0.0245 U	0.0237 U	0.0235 U	0.0224 U	0.0231 U	0.0235 U	0.0224 U	0.0227 U	0.0226 U	0.0250 U	0.0246 U
PCB-189	ng/L	E1668A	—	0.00454 U	0.000143 J	0.00470 U	0.00475 U	0.00459 U	0.00454 U	0.00434 U	0.00448 U	0.00454 U	0.00434 U	0.00440 U	0.00438 U	0.00484 U	0.00477 U
PCB-190	ng/L	E1668A	—	0.00717 U	0.00707 U	0.00742 U	0.00749 U	0.00724 U	0.00717 U	0.00685 U	0.00707 U	0.00717 U	0.00685 U	0.00694 U	0.00691 U	0.00765 U	0.00753 U
PCB-191	ng/L	E1668A	—	0.00616 U	0.00607 U	0.00637 U	0.00643 U	0.00621 U	0.00616 U	0.00588 U	0.00607 U	0.00616 U	0.00588 U	0.00596 U	0.00593 U	0.00656 U	0.00646 U
PCB-192	ng/L	E1668A	—	0.00643 U	0.00634 U	0.00665 U	0.00672 U	0.00649 U	0.00643 U	0.00614 U	0.00634 U	0.00643 U	0.00614 U	0.00622 U	0.00619 U	0.00685 U	0.00675 U
PCB-194	ng/L	E1668A	—	0.00392 U	0.00386 U	0.00405 U	0.00409 U	0.00395 U	0.00392 U	0.00374 U	0.00386 U	0.00392 U	0.00374 U	0.00379 U	0.00377 U	0.00418 U	0.00411 U
PCB-195	ng/L	E1668A	—	0.00602 U	0.00594 U	0.00623 U	0.00629 U	0.00608 U	0.00602 U	0.00575 U	0.00594 U	0.00602 U	0.00575 U	0.00583 U	0.00580 U	0.00642 U	0.00632 U
PCB-196	ng/L	E1668A	—	0.00506 U	0.000299 J+	0.00524 U	0.000476 J+	0.00511 U	0.000142 J+	0.000155 J+	0.00499 U	0.00506 U	0.000435 J+	0.00490 U	0.00488 U	0.00540 U	0.000245 J+
PCB-197	ng/L	E1668A	—	0.00956 U	0.00942 U	0.00989 U	0.00998 U	0.00965 U	0.00956 U	0.00912 U	0.00942 U	0.00956 U	0.00912 U	0.00925 U	0.00921 U	0.0102 U	0.0100 U
PCB-198/199	ng/L	E1668A	—	0.0108 U	0.0107 U	0.0112 U	0.0113 U	0.0109 U	0.0108 U	0.0103 U	0.0107 U	0.000292 J	0.0103 U	0.0105 U	0.0104 U	0.0115 U	0.0113 U
PCB-200	ng/L	E1668A	—	0.0102 U	0.000704 J+	0.0106 U	0.0107 U	0.00126 J+	0.0102 U	0.000312 J+	0.000181 J+	0.000510 J+	0.00974 U	0.000197 J+	0.00983 U	0.0109 U	0.000536 J+
PCB-201	ng/L	E1668A	—	0.00540 U	0.00533 U	0.00559 U	0.00565 U	0.00546 U	0.00540 U	0.00516 U	0.00533 U	0.00540 U	0.00516 U	0.00523 U	0.00521 U	0.00576 U	0.00567 U
PCB-202	ng/L	E1668A	—	0.0107 U	0.0105 U	0.0110 U	0.0112 U	0.0108 U	0.0107 U	0.0102 U	0.0105 U	0.0107 U	0.0102 U	0.0103 U	0.0103 U	0.0114 U	0.0112 U
PCB-203	ng/L	E1668A	—	0.00506 U	0.00499 U	0.00524 U	0.00529 U	0.000215 J+	0.00506 U	0.00483 U	0.00499 U	0.000111 J+	0.00483 U	0.00490 U	0.00488 U	0.00540 U	0.00532 U
PCB-204	ng/L	E1668A	—	0.00956 U	0.00942 U	0.00989 U	0.00998 U	0.00965 U	0.00956 U	0.00912 U	0.00942 U	0.00956 U	0.00912 U	0.00925 U	0.00921 U	0.0102 U	0.0100 U
PCB-205	ng/L	E1668A	—	0.00273 U	0.00269 U	0.00283 U	0.00285 U	0.00276 U	0.00273 U	0.00261 U	0.00269 U	0.0000530 J+	0.00261 U	0.00264 U	0.00263 U	0.00291 U	0.00287 U
PCB-206	ng/L	E1668A	—	0.00231 U	0.00227 U	0.00239 U	0.00241 U	0.00233 U	0.00231 U	0.00220 U	0.00227 U	0.00231 U	0.00220 U	0.00223 U	0.00222 U	0.00246 U	0.00242 U
PCB-207	ng/L	E1668A	—	0.00436 U	0.00430 U	0.00451 U	0.00455 U	0.00440 U	0.00436 U	0.00416 U	0.00430 U	0.00436 U	0.00416 U	0.00422 U	0.00420 U	0.00465 U	0.00458 U
PCB-208	ng/L	E1668A	—	0.00454 U	0.00448 U	0.00470 U	0.00475 U	0.00459 U	0.00454 U	0.00434 U	0.00448 U	0.00454 U	0.00434 U	0.00440 U	0.00438 U	0.00484 U	0.00477 U
PCB-209	ng/L	E1668A	—	0.00200 U	0.00198 U	0.00207 U	0.00209 U	0.00202 U	0.00200 U	0.00191 U	0.00198 U	0.00200 U	0.00191 U	0.0000388 J+	0.0000463 J+	0.00214 U	0.00210 U
Total PCBs Congeners	ng/L	E1668A	14	17.8 J+	20.5 J+	16.2 J+	17.4 J+	14.2 J+	14.6 J+	13.9 J+	11.4 J+	14.4 J+	14.5 J+	16.9 J+	12.7 J+	18.8 J+	17.6 J+
Conventionals																	
Dissolved Organic Carbon	mg/L	SM5310C	—	8.00 U	9.26	8.00 U	18.4	8.00 U	8.00 U	8.00 U	10.6	8.00 U	8.00 U	8.00 U	8.00 U	11.1	15.4
Anions																	
Bromide	ppm	TTU_Anions	—	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U
Chloride	ppm	TTU_Anions	—	4.97	5.32	4.93	5.40	12.8	21.7	21.0	6.68	3.98	4.02	4.81	4.70	43.2	133
Nitrate (as N)	ppm	TTU_Anions	—	0.774	0.764	0.785	0.764	0.763	0.775	0.775	0.772	0.766	0.766	0.774	0.759	0.775	0.760
Sulfate	ppm	TTU_Anions	—	3.19	3.21	3.14	3.11	3.32	3.25	3.24	3.58	4.84	5.25	3.18	3.31	0.288 U	0.288 U

Table 4-11

Porewater Results

Porewater Location ID				WC-P026		WC-P027		WC-P028		WC-P029		WC-P030		WC-P031	
Region				Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate	
Sample Date				10/5/2022		10/4/2022		10/5/2022		10/5/2022		10/5/2022		10/4/2022	
Depth Interval (ft)				0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0	0.5-1.0	1.5-2.0
Screening Criteria	Reporting Units	Analytical Method	Table 17 ROD Cleanup Level												
PCB-184	ng/L	E1668A	—	0.0216 U	0.0215 U	0.0223 U	0.0215 U	0.0225 U	0.0232 U	0.0223 U	0.0241 U	0.0228 U	0.0000320 J+	0.0220 U	0.0223 U
PCB-186	ng/L	E1668A	—	0.0291 U	0.0290 U	0.0300 U	0.0290 U	0.0303 U	0.0313 U	0.0300 U	0.0324 U	0.0307 U	0.0291 U	0.0297 U	0.0300 U
PCB-187	ng/L	E1668A	—	0.0118 U	0.000176 J+	0.0121 U	0.0118 U	0.0123 U	0.0127 U	0.000559 J+	0.000709 J+	0.0124 U	0.0118 U	0.0120 U	0.0121 U
PCB-188	ng/L	E1668A	—	0.0227 U	0.0226 U	0.0234 U	0.0226 U	0.0000339 J+	0.0244 U	0.0234 U	0.0253 U	0.0239 U	0.0000500 J+	0.0231 U	0.0234 U
PCB-189	ng/L	E1668A	—	0.00440 U	0.00438 U	0.00452 U	0.00438 U	0.00457 U	0.00472 U	0.00452 U	0.00489 U	0.000102 J+	0.00440 U	0.00448 U	0.00452 U
PCB-190	ng/L	E1668A	—	0.00694 U	0.00691 U	0.00714 U	0.00691 U	0.00721 U	0.00746 U	0.00714 U	0.00772 U	0.00731 U	0.00694 U	0.00707 U	0.00714 U
PCB-191	ng/L	E1668A	—	0.00596 U	0.00593 U	0.00613 U	0.00593 U	0.00619 U	0.00640 U	0.00613 U	0.00663 U	0.00628 U	0.00596 U	0.00607 U	0.00613 U
PCB-192	ng/L	E1668A	—	0.00622 U	0.00619 U	0.00640 U	0.00619 U	0.00646 U	0.00668 U	0.00640 U	0.00692 U	0.00655 U	0.00622 U	0.00634 U	0.00640 U
PCB-194	ng/L	E1668A	—	0.00379 U	0.00377 U	0.00390 U	0.00377 U	0.00394 U	0.00407 U	0.0000561 J+	0.00422 U	0.000112 J+	0.00379 U	0.00386 U	0.00390 U
PCB-195	ng/L	E1668A	—	0.00583 U	0.00580 U	0.00599 U	0.00580 U	0.00605 U	0.00626 U	0.0000971 J+	0.00649 U	0.00614 U	0.00583 U	0.00594 U	0.00599 U
PCB-196	ng/L	E1668A	—	0.000304 J+	0.00488 U	0.00504 U	0.00488 U	0.000244 J+	0.00526 U	0.000312 J+	0.000447 J+	0.000454 J+	0.000372 J+	0.000439 J+	0.000272 J+
PCB-197	ng/L	E1668A	—	0.00925 U	0.00921 U	0.00951 U	0.00921 U	0.00960 U	0.00993 U	0.00951 U	0.0103 U	0.00974 U	0.00925 U	0.00942 U	0.00951 U
PCB-198/199	ng/L	E1668A	—	0.0105 U	0.0104 U	0.0108 U	0.0104 U	0.0109 U	0.0112 U	0.0108 U	0.0116 U	0.000231 J+	0.0105 U	0.0107 U	0.0108 U
PCB-200	ng/L	E1668A	—	0.000691 J+	0.00983 U	0.0102 U	0.00983 U	0.000820 J+	0.000361 J+	0.0102 U	0.000659 J+	0.000374 J+	0.00987 U	0.000744 J+	0.000325 J+
PCB-201	ng/L	E1668A	—	0.00523 U	0.00521 U	0.00538 U	0.00521 U	0.00543 U	0.00562 U	0.00538 U	0.00582 U	0.00551 U	0.00523 U	0.00533 U	0.00538 U
PCB-202	ng/L	E1668A	—	0.0103 U	0.0103 U	0.0106 U	0.0103 U	0.0107 U	0.0111 U	0.0106 U	0.0115 U	0.0109 U	0.0103 U	0.0105 U	0.0106 U
PCB-203	ng/L	E1668A	—	0.00490 U	0.00488 U	0.00504 U	0.00488 U	0.00509 U	0.00526 U	0.00504 U	0.00545 U	0.00516 U	0.00490 U	0.00499 U	0.00504 U
PCB-204	ng/L	E1668A	—	0.00925 U	0.00921 U	0.00951 U	0.00921 U	0.00960 U	0.00993 U	0.00951 U	0.0103 U	0.00974 U	0.00925 U	0.00942 U	0.00951 U
PCB-205	ng/L	E1668A	—	0.00264 U	0.00263 U	0.00272 U	0.00263 U	0.00275 U	0.00284 U	0.00272 U	0.00294 U	0.00000518 J+	0.00264 U	0.00269 U	0.00272 U
PCB-206	ng/L	E1668A	—	0.00223 U	0.00222 U	0.00230 U	0.00222 U	0.00232 U	0.00240 U	0.00230 U	0.00248 U	0.00235 U	0.00223 U	0.00227 U	0.00230 U
PCB-207	ng/L	E1668A	—	0.00422 U	0.00420 U	0.00434 U	0.00420 U	0.00438 U	0.00453 U	0.00434 U	0.00469 U	0.00444 U	0.00422 U	0.00430 U	0.00434 U
PCB-208	ng/L	E1668A	—	0.00440 U	0.00438 U	0.00452 U	0.00438 U	0.00457 U	0.00472 U	0.00452 U	0.00489 U	0.00463 U	0.00440 U	0.00448 U	0.00452 U
PCB-209	ng/L	E1668A	—	0.00194 U	0.00193 U	0.00199 U	0.00193 U	0.00201 U	0.00208 U	0.00199 U	0.00216 U	0.00204 U	0.00194 U	0.00198 U	0.00199 U
Total PCBs Congeners	ng/L	E1668A	14	15.5 J+	13.6 J+	18.3 J+	16.7 J+	17.9 J+	15.8 J+	15.8 J+	16.0 J+	18.1 J+	17.3 J+	15.2 J+	15.0 J+
Conventionals															
Dissolved Organic Carbon	mg/L	SM5310C	—	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U	8.00 U
Anions															
Bromide	ppm	TTU_Anions	—	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U	221 U
Chloride	ppm	TTU_Anions	—	7.21	7.01	5.61	6.18	5.93	5.99	5.20	5.53	6.53	6.30	6.08	7.14
Nitrate (as N)	ppm	TTU_Anions	—	0.771	0.771	0.871	0.728	0.790	4.12	4.83	5.66	0.753	0.766	0.809	0.772
Sulfate	ppm	TTU_Anions	—	3.22	3.25	15.4	15.3	8.85	19.1	16.5	16.0	3.17	3.17	3.36	18.9

Table 4-11

Porewater Results

Notes

Yellow highlight = Result exceeds the referenced ROD Groundwater Cleanup Level

BOLD = Detection

— = Not analyzed or not applicable

µg/L = micrograms per liter

cPAH = carcinogenic polycyclic aromatic hydrocarbons

DDx = the sum of dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyltrichloroethane (DDT)

ft = foot or feet

HPAH = high molecular weight polycyclic aromatic hydrocarbons

HpCDD = heptachlorodibenzo-p-dioxin

HpCDF = heptachlorodibenzofuran

HxCDD = hexachlorodibenzo-p-dioxin

HxCDF = hexachlorodibenzofuran

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The result is an estimated quantity, but the result may be biased high.

LPAH = low molecular weight polycyclic aromatic hydrocarbons

mg/L = milligrams per liter

ng/L = nanograms per liter

OCDD = octachlorodibenzo-p-dioxin

OCDF = octachlorodibenzofuran

PAH = polycyclic aromatic hydrocarbon

PCB = Polychlorinated Biphenyls

PCDD/Fs = Polychlorinated dibenzo-p-dioxins and furans

PeCDD = pentachlorodibenzo-p-dioxin

PeCDF = pentachlorodibenzofuran

pg/L = picograms per liter

ppm = parts per million

RD = Remedial Design

ROD = Record of Decision

TCDD = tetrachlorodibenzo-p-dioxin

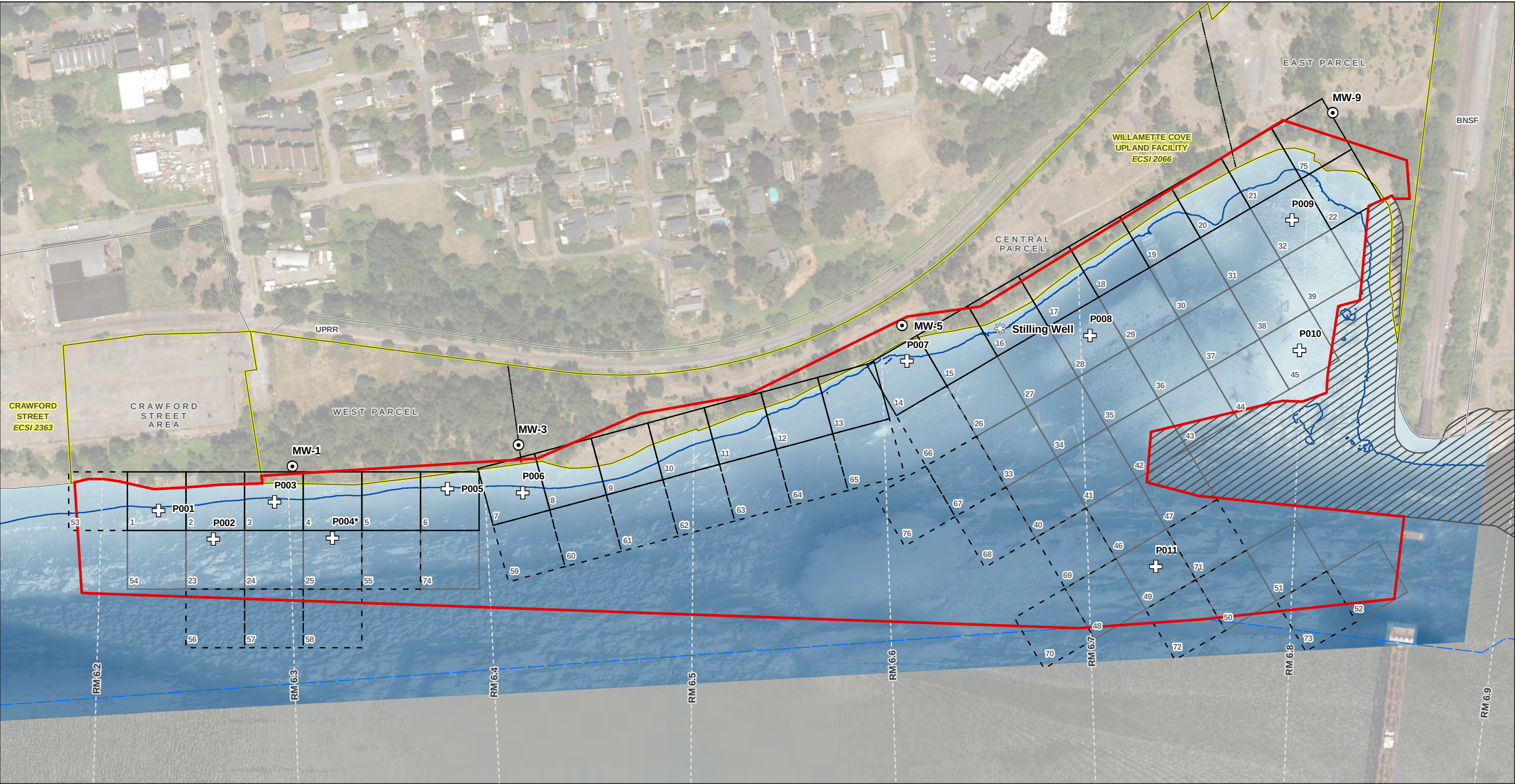
TCDF = tetrachlorodibenzofuran

TEQ = Toxic Equivalent

U = Result not detected above the referenced laboratory detection limit

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate.

UJ+ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be biased high.



LEGEND

- ✚ Porewater Location
- ⊕ Water Level Monitoring Locations
- ⊙ Monitoring Well
(Used in the Water Level Monitoring Network)
- ⊙ Stilling Well

Sample Cell

- Shallow Region
- Intermediate Region
- Step-Out

All Other Features

- ▭ Project Area Boundary
- ▭ Upland Parcel
- ▭ Upland Subparcel

- ▭ Adjacent Parcel
- ▭ Capped Area
- ▭ Navigation Channel
- ▭ 3.2' NAVD88 (-2' CRD)
- ▭ River Mile (RM)

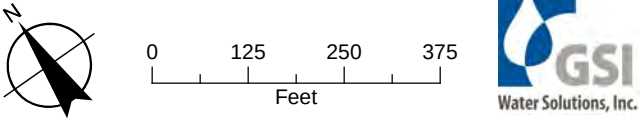
- Bathymetry**
- 20'
 - 66'

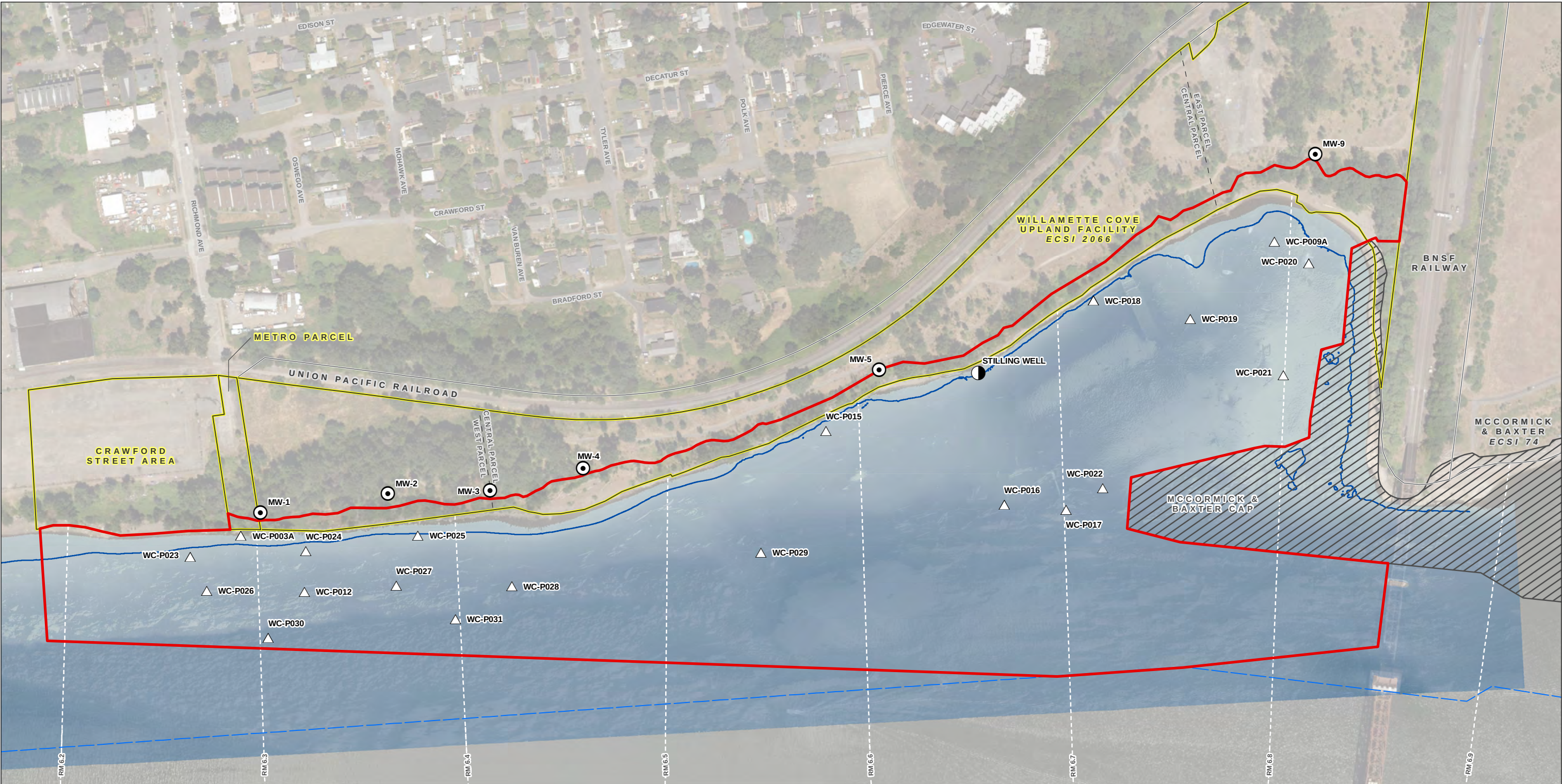
NOTES

1. 3.2' NAVD88 (-2' CRD) was generated from 2021 site bathymetry, Solmar Hydro.
BNSF: Burlington Northern Santa Fe Railway
CRD: Columbia River Datum
ECSI: Environmental Cleanup Site Information
NAVD88: North American Vertical Datum of 1988
UPRR: Union Pacific Railroad
USACE: U.S. Army Corps of Engineers
*The Passive Sampling Device (PSD) at P004 was not recovered.

Date: May 3, 2021
Data Sources: City of Portland 2019, METRO 2020, USACE 2014, Bathymetry from Solmar Hydro, Aerial City of Portland 2020

FIGURE 2-6
Porewater Sampling and Water Level Monitoring Locations
Pre-Design Investigation Evaluation Report





LEGEND

Upland Monitoring Well

Stilling Well

Sample Method

Porewater

Bathymetry

10 feet

-66 feet

All Other Features

Project Area Boundary

Adjacent Upland Parcel

Adjacent Upland Subparcel

Upland Parcel

Capped Area

Navigation Channel

3.2 feet NAVD 88 (-2 feet CRD)

River Mile (RM)

NOTES

1. The riverward boundary of the Crawford Street Area is at ordinary low water, as defined by USACE (2017).

2. The 3.2 feet NAVD 88 (-2 feet CRD) contour is generated from 2021 site bathymetry, Solmar Hydro.

3. The Project Area boundary line adjacent to the Willamette Cove Upland Facility is based on the 2022 Supplemental Pre-Design Investigation top of bank field survey.

CRD: Columbia River Datum

ECSI: Environmental Cleanup Site Information

NAVD 88: North American Vertical Datum of 1988

USACE: U.S. Army Corps of Engineers

Date: October 17, 2023

Data Sources: City of Portland 2019, METRO 2022, ESRI, USACE 2014, Aerial City of Portland 2020

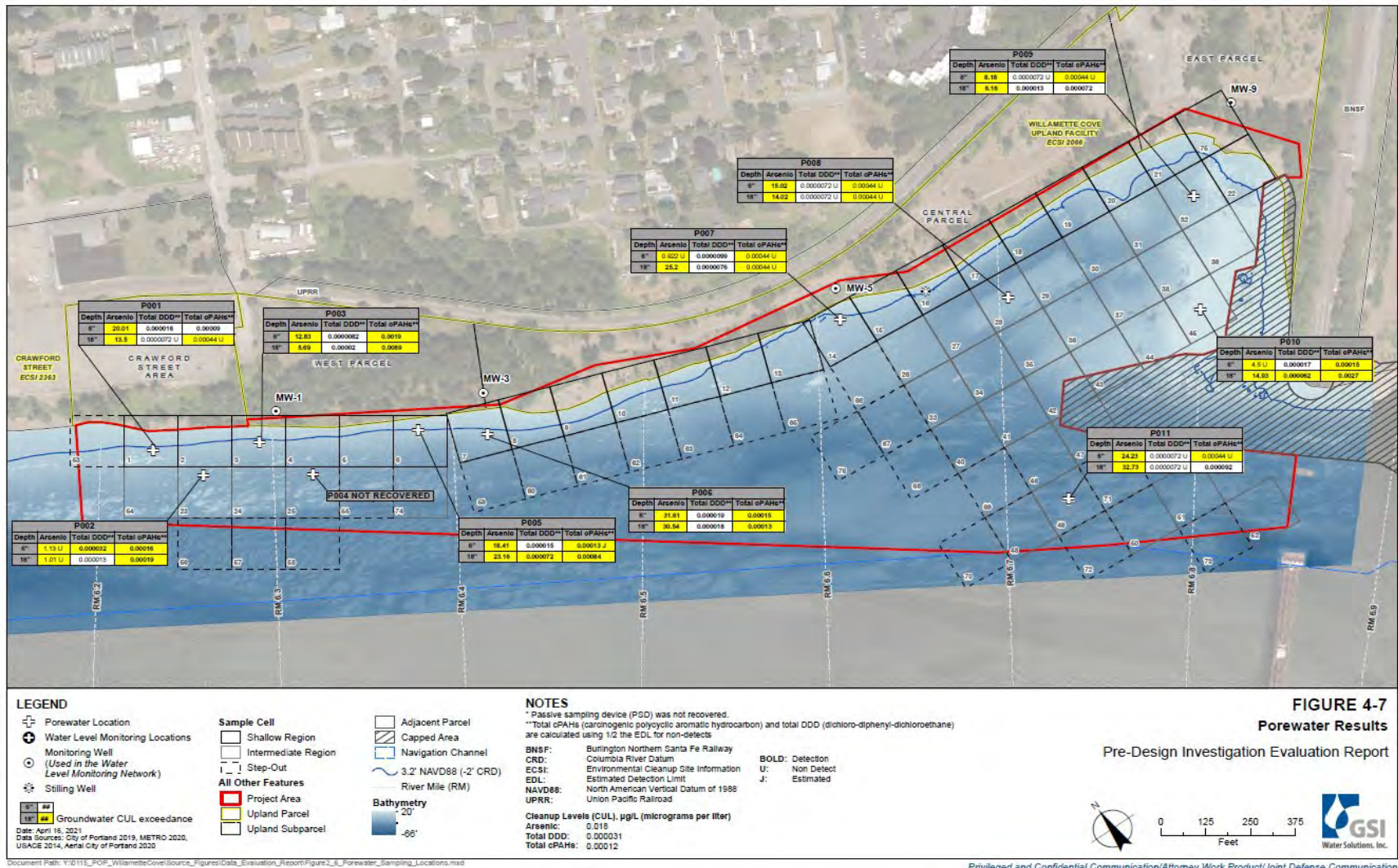
FIGURE 2-9

Porewater Sampling Locations

Supplemental Pre-Design Investigation
Evaluation Report

0125250375

feet



Document Path: Y:\0115_POP_WillametteCove\Source_Figures\Data_Evaluation_Report\Figure 4-7_Porewater_Sampling_Locations.mxd

Privileged and Confidential Communication/Attorney Work Product/Joint Defense Communication

Appendix E

Test Pit, Boring, and Monitoring Well Logs

APPENDIX E
FIELD AND QA/QC PROCEDURES AND EXPLORATION LOGS

APPENDIX E

FIELD AND QA/QC PROCEDURES AND EXPLORATION LOGS

This appendix presents the procedures Hart Crowser personnel used to complete the fieldwork for the RI activities. The procedures discussed below include:

- Utility locate;
- Surface soil sampling;
- Test pits explorations;
- Push probe explorations;
- Hand-augered soil borings;
- Groundwater monitoring well installation;
- Groundwater monitoring;
- Field screening procedures;
- Sample container, labeling, and shipping;
- Decontamination procedures;
- Handling of investigation-derived waste (IDW); and
- Field quality assurance/quality control (QA/QC).

1.0 UTILITY LOCATE

Prior to performing any subsurface explorations, we arranged to have underground utilities located and marked. We contacted the Oregon Utility Notification Center, which in turn notified the various utilities in the area to mark any underground installations on or near the Willamette Cove Upland Facility.

2.0 SURFACE SOIL SAMPLING

On January 17 and 18, 2002, we collected 38 surface soil samples (SS-1 through SS-37) to delineate the extent and magnitude of contaminants in surface soil.

Surface soil samples were collected from the upper 6 inches of soil at each sample location using a shovel (to dig the hole) and a stainless steel sampling spoon (to sample the hole). Soil at each location was described and recorded in our field notes. As all samples were analyzed, field screening was not necessary for sample

Backfilling. After completing a test pit, the spoils were returned to the pit in reverse order, compacting them with the trackhoe bucket as the excavation was filled.

4.0 PUSH PROBE EXPLORATIONS

From May 7 through 17, 2001, we performed 30 push probe explorations (B-1 through B-30) at the Upland Facility. Geo-Tech Explorations, Inc., of Tualatin, Oregon, completed the probes under subcontract to Hart Crowser. A Hart Crowser representative was present to observe and document the exploration activities. The probes were completed in accordance with Oregon Water Resources Department (WRD) regulations using the procedures below.

4.1 Exploration Probing and Soil Sampling

Exploration Probing. Most of the probes were completed using a push probe rig. For probes B-6 and B-7, a rotohammer was used to advance probe sampling equipment due to the inaccessibility of these two locations. The probes were advanced to depths generally ranging from 28 to 40 feet below the ground surface (bgs). Detailed field logs were prepared for each exploration and are presented in this appendix on Figures E-15 through E-44. Soil samples were described using the soil classification system presented on Figure E-1.

Soil Sampling. In general, soil cores were obtained continuously using a 4-foot-long sampler (for the rotohammer probes, a 2-foot-long sampler was used). Core intervals are shown on the exploration logs.

The sampling procedure involved driving the soil sampler using a combination of hydraulic pressure and mechanical hammer blows. When the sampling depth was reached, a pin attaching the sampler's tip was released, allowing the tip to slide up inside the sampler. After the sampler was driven another 4 feet (2 feet for rotohammer probes), it was removed from the hole, and the sample core removed (the core is contained in a clear, plastic sleeve inside the sampler barrel). The sampler was then prepared for driving the next core interval.

The plastic sleeve was cut open for soil description and sampling. In general, one soil sample was collected from each core from the bottom 2 feet. If more than one soil type was present in a core, a sample of each soil type was obtained. Soil for the samples was transferred into laboratory-supplied sample jars using a stainless steel spoon. Sample jars were fully filled leaving no headspace.

dissolved metals were field-filtered through a 0.45- μ m filter using a peristaltic pump. After the sampling of each exploration was complete, the tubing was disposed of.

Field Parameter Measurement. After sampling was completed, the following groundwater field parameters were measured: pH, electrical conductivity, and temperature.

4.3 Exploration Abandonment

After completion of each exploration, the hole was filled with bentonite pellets and hydrated with water.

5.0 HAND-AUGERED SOIL BORINGS

On April 18 and May 17 and 18, 2001, we completed seven hand-augered soil boring (HA-5 through HA-11) along the riverfront/beach.

Soil Sampling. We completed the hand-augered soil borings to a depth of about 1 to 3 feet bgs using a stainless steel hand-auger. Soil samples were collected at the ground surface and at 1-foot depth-intervals thereafter. Soil from the boring was described using the soil classification system presented on Figure A-1. For sampling, soil was retrieved using the hand-auger and transferred into laboratory-supplied sample jars using a stainless steel spoon. Sample jars were fully filled leaving no headspace. Detailed field logs were prepared for each boring and are presented in this appendix on Figures E-45 through E-51.

Field Screening. All soil samples were screened in the field for VOCs using a PID and for heavier hydrocarbons (e.g., oil) using a sheen test (see Section 8). Field screening results are shown on the exploration logs.

Exploration Abandonment. After completion of a boring, it was backfilled in reverse order with cuttings obtained from the boring.

6.0 GROUNDWATER MONITORING WELL INSTALLATIONS

From January 21 through 30, 2002, seven groundwater monitoring wells (MW-1 through MW-7) were installed to assess groundwater quality at the Upland Facility. Geo-Tech Explorations of Tualatin, Oregon, completed the well installations under subcontract to Hart Crowser. A Hart Crowser representative was present to observe and document the well installation activities. The wells were installed in accordance with DEQ and WRD regulations using the procedures below.

6.3 Monitoring Wells Development

After installation, each monitoring well was developed to improve its hydraulic connection with the water-bearing zone. The wells were developed on January 30 and 31, 2002, at least 48 hours after construction. Each well was developed by purging groundwater from the well using a submersible pump. For each casing volume removed, we measured groundwater pH, temperature, electrical conductivity, and turbidity. Development was considered complete when groundwater field parameters (e.g., pH) stabilized or well bailed dry. Except for MW-2 which bailed dry, we removed 7 to 12 casing volumes from each well. Field parameters usually stabilized by the third or fourth casing volume. We documented observations made during development in our field notes. Purge water was drummed pending disposal.

6.4 Survey

In March 2002, Otak, Inc., surveyed the locations and elevations of the monitoring wells (under subcontract to Hart Crowser). The well top of casing and ground elevations were surveyed to the nearest 0.01 foot relative to City of Portland Benchmark 2106 (68.94 feet, City of Portland datum; or 67.57 feet msl per NGVD 29). The well locations were surveyed to the nearest foot relative to Oregon State Plane (1983).

7.0 GROUNDWATER MONITORING

Two groundwater monitoring events were performed for the Phase II activities: on February 7 and 8, 2002; and on May 28 and 29, 2002. Monitoring consisted of measuring water levels, purging and sampling groundwater, and measuring groundwater field parameters. During the monitoring activities, we documented measurements and observations on a sampling log.

Measurement of Groundwater Levels. Water levels in the monitoring wells were measured and recorded for the purpose of determining groundwater elevations. The monitoring wells were opened and the water level was allowed to equilibrate before the measurements were taken. Measurements were made to the nearest 0.01 foot using an electronic probe.

Purging and Sampling. After the groundwater levels are measured, each well was purged using a two-stage submersible pump. Purging was considered complete after three casing volumes of groundwater had been removed. Purge water was drummed pending disposal. Groundwater samples were then obtained using the submersible pump. Samples collected for dissolved metals were field-filtered through a 0.45- μ m filter using a peristaltic pump.

10.0 DECONTAMINATION PROCEDURES

Sampling Equipment Decontamination. To prevent cross-contamination between sampling events, clean dedicated sampling equipment (e.g., disposable gloves, groundwater sampling tubing) was used when possible for each sampling event and discarded after use. Cleaning of nondisposable items consisted of washing in a detergent solution (Alconox®), rinsing with tap water, followed with a deionized water rinse. Decontamination water was drummed pending disposal.

Exploration Equipment Decontamination. To reduce the chance for cross-contamination between explorations, exploration equipment was cleaned before and after each exploration. For the test pits, the trackhoe bucket was brushed off to remove any adhering soil. Push probe equipment and the hollow-stem augers were washed with a high-pressure washer. Decontamination water was drummed pending disposal.

11.0 HANDLING OF INVESTIGATION-DERIVED WASTE

Investigation-derived waste (IDW) generated during RI activities consisted of extra soil from push probe soil cores, drill cuttings, purged groundwater (from probes, well development, and groundwater monitoring), and decontamination water. Soil and water were placed in labeled drums and moved to the East Parcel for storage in an enclosure constructed of temporary chain-link fencing. Based on the soil analyses, soil was disposed of at Waste Management's Hillsboro Landfill in Hillsboro, Oregon. Based on analytical results on water from the probes, IDW water was transported to Oil Re-Refining in Portland, Oregon, for disposal.

12.0 FIELD QUALITY ASSURANCE/QUALITY CONTROL

QA/QC was practiced throughout field activities. As discussed above, disposable sampling equipment was used when possible to eliminate cross-contamination. Non-disposable items were decontaminated before and after each sampling event to minimize possible cross-contamination. All laboratory containers were marked with identifying information to prevent sample mix-ups. The chain of custody was maintained and documented at all times.

During our sampling activities, duplicate soil samples were collected for possible chemical analysis. Duplicate samples of soil samples TP-21/S-2, TP-28/S-3, B-24/S-1, SS-9, and SS-26 were submitted for analysis. Duplicate groundwater samples were collected from well MW-3 in February 2002 and from MW-1 in

Key to Exploration Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT with additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL	Standard Penetration Resistance in Blows/Foot	SILT or CLAY	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
<u>Density</u>		<u>Density</u>		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very Stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Damp	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

	<u>Estimated Percentage</u>
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Legends

Sampling Symbols

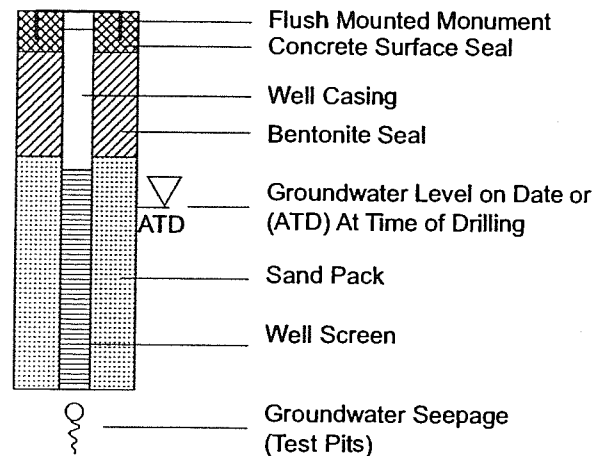
BORING AND PUSH PROBE SYMBOLS

-  Split Spoon
-  Tube (Shelby, Push Probe)
-  Cuttings
-  Core Run
-  Temporarily Screened Interval
- N Standard Penetration Resistance
- * No Sample Recovery
- PID Photoionization Detector Reading

TEST PIT SOIL SAMPLES

-  Grab (Jar)
-  Bag
-  Shelby Tube

Groundwater Observations and Monitoring Well Construction



Test Pit Log TP-16

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), damp, dark brown, sandy SILT. Becomes tan. Becomes dry.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	Bottom of Exploration at 6.0 Feet. Completed 04/17/01.
			5	
			6	
			7	
			8	
			9	
			10	

Test Pit Log TP-17

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, dark brown, silty SAND. (Medium stiff), damp, tan, clayey SILT.
S-2	No Sheen	<5	1	
			2	Black asphalt-like material.
S-3	No Sheen	<5	3	
			4	Becomes dry.
S-4	No Sheen	<5	5	
			6	Bottom of Exploration at 6.0 Feet. Completed 04/17/01.
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Test Pit Log TP-18

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), damp, dark brown, clayey SILT.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	Concrete pieces from 2 to 3 feet.
S-4	No Sheen	<5	3	
			4	Metal debris.
			5	
			6	Asphalt pieces and metal debris.
			6	Bottom of Exploration at 6.0 Feet.
			6	Completed 04/18/01.
			7	
			8	
			9	
			10	

Test Pit Log TP-19

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), damp, dark brown, clayey SILT.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	Concrete pieces.
S-4	No Sheen	<5	3	
			4	(Loose), damp, grayish-brown SAND.
			5	(Medium stiff), damp, tan to brown, clayey SILT.
			6	Bottom of Exploration at 6.0 Feet.
			6	Completed 04/18/01.
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

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Figure E-3

Test Pit Log TP-20

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), damp, dark brown, clayey SILT.
S-2	No Sheen	<5	1	
			2	Becomes dry and tan.
S-3	No Sheen	<5	3	
			4	(Loose), damp, reddish-brown SAND.
S-4	No Sheen	<5	5	
			6	(Medium stiff), dry, tan, clayey SILT.
			7	Bottom of Exploration at 6.0 Feet.
			8	Completed 04/17/01.
			9	
			10	

Test Pit Log TP-21

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), damp, grayish-brown, gravelly, clayey SILT.
S-2	No Sheen	<5	1	
			2	Debris (nails and glass).
S-3	No Sheen	<5	3	
			4	
S-4	No Sheen	<5	5	Becomes dry and tan.
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/17/01.
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Test Pit Log TP-22

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Soft), damp, dark brown, gravelly SILT.
S-2	No Sheen	<5	1	(Medium stiff), damp, reddish-brown and tan, clayey SILT.
S-3	No Sheen	<5	2	(Loose), damp, reddish-brown SAND.
S-4	No Sheen	<5	3	
S-5	No Sheen	<5	4	
			5	
			6	(Medium stiff), moist, dark gray, sandy CLAY.
			7	
			8	Bottom of Exploration at 8.0 Feet.
			9	Completed 04/17/01.
			10	

Test Pit Log TP-23

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, dark brown, slightly silty to silty SAND.
S-2	No Sheen	<5	1	
S-3	Slight Sheen	<5	2	Becomes grayish-brown.
S-4	Slight Sheen	<5	3	Becomes reddish-brown.
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/17/01.
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

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Figure E-5

Test Pit Log TP-24

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, grayish-brown, gravelly SAND with nails. Becomes slightly gravelly. Becomes reddish-brown and silty.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	Bottom of Exploration at 6.0 Feet. Completed 04/17/01.
			6	
			7	
			8	
			9	
			10	

Test Pit Log TP-25

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), damp, tan, gravelly SILT. (Loose), damp, grayish-brown SAND. Becomes brown.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	Bottom of Exploration at 6.0 Feet. Completed 04/17/01.
			6	
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Test Pit Log TP-26

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, brown SAND.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	Bottom of Exploration at 6.0 Feet. Completed 04/17/01.
			5	
			6	
			7	
			8	
			9	
			10	

Test Pit Log TP-27

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Medium stiff), dry, tan, gravelly SILT.
S-2	Slight Sheen	<5	1	(Loose), damp, brown SAND.
S-3	Slight Sheen	<5	2	3-inch-diameter pipe.
S-4	No Sheen	<5	3	Bottom of Exploration at 6.0 Feet. Completed 04/17/01.
			4	
			5	
			6	
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.



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Figure E-7

Test Pit Log TP-28

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	Slight Sheen	<5	0	(Medium stiff), dry, tan, gravelly SILT.
S-2	Slight Sheen	<5	1	(Loose), damp, grayish-brown SAND.
S-3	Slight Sheen	<5	2	
S-4	Slight Sheen	<5	3	
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/17/01.
			8	
			9	
			10	

Test Pit Log TP-29

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, dark brown SAND.
S-2	No Sheen	<5	1	Portion of old railroad tie.
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/18/01.
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

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Figure E-8

Test Pit Log TP-30

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	Dark gray GRAVEL over (loose), moist, brown, silty SAND.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	Bottom of Exploration at 6.0 Feet. Completed 04/16/01.
			6	
			7	
			8	
			9	
			10	

Test Pit Log TP-31

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Soft), damp, dark brown, gravelly SILT.
S-2	No Sheen	<5	1	(Loose), damp, grayish-brown, silty SAND.
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet. Completed 04/16/01.
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Test Pit Log TP-32

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, brown, silty SAND. (Soft), dry, blackish-brown, gravelly SILT with metal nails was present within the top foot of the east end of this test pit.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	2-inch-diameter pipe.
			5	
			6	Bottom of Exploration at 6.0 Feet. Completed 04/16/01.
			7	
			8	
			9	
			10	

Test Pit Log TP-32B

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	6" Concrete over (loose), damp, brown SAND.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	Bottom of Exploration at 6.0 Feet. Completed 04/18/01.
			5	
			6	
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

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Figure E-10

Test Pit Log TP-33

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Soft), damp, tan, gravelly SILT with bricks and a pipe.
S-2	No Sheen	<5	1	(Loose), damp, grayish-brown, silty SAND.
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/16/01.
			8	
			9	
			10	

Test Pit Log TP-34

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), dry, grayish-tan, silty GRAVEL.
S-2	No Sheen	<5	1	(Loose), dry, brown, silty SAND.
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/16/01.
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Test Pit Log TP-35

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), dry, grayish-tan, silty GRAVEL.
S-2	No Sheen	<5	1	
			2	Lens of (soft), dry, tan and dark brown SILT.
			3	(Loose), dry, reddish-brown, silty SAND.
S-3	No Sheen	<5	4	Two 2-inch-diameter pipes.
			5	
S-4	No Sheen	<5	6	Becomes grayish-brown.
			6	Bottom of Exploration at 6.0 Feet.
			7	Completed 04/16/01.
			8	
			9	
			10	

Test Pit Log TP-36

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, dark brown, silty SAND.
S-2	No Sheen	<5	1	
			2	
			3	1 to 2" round gravel.
S-3	No Sheen	<5	4	
			5	
S-4	No Sheen	<5	6	Bottom of Exploration at 6.0 Feet.
			6	Completed 04/16/01.
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.



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Figure E-12

Test Pit Log TP-37

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, grayish-brown, silty SAND.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	Becomes brown with bricks.
S-4	No Sheen	<5	3	
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet. Completed 04/16/01.
			7	
			8	
			9	
			10	

Test Pit Log TP-38

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Soft), damp, dark brown, sandy SILT.
S-2	No Sheen	<5	1	Lens of (soft), damp, black (organic) SILT with large bricks.
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	(Loose), brown, silty SAND.
			4	
			5	
			6	Bottom of Exploration at 6.0 Feet. Completed 04/16/01.
			7	
			8	
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.



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Figure E-13

Test Pit Log TP-39

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, brownish-gray, silty SAND with brick and mortar debris.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	Becomes brown.
			5	
			6	Debris stops.
			7	Bottom of Exploration at 7.0 Feet.
			8	Completed 04/16/01.
			9	
			10	

Test Pit Log TP-40

Sample	Lab Tests	PID	Depth in Feet	SOIL DESCRIPTIONS
S-1	No Sheen	<5	0	(Loose), damp, grayish-brown, silty SAND.
S-2	No Sheen	<5	1	
S-3	No Sheen	<5	2	
S-4	No Sheen	<5	3	
			4	
			5	
			6	Becomes reddish-brown.
			7	Bottom of Exploration at 6.0 Feet.
			8	Completed 04/16/01.
			9	
			10	

2 LOGS PER PAGE TP_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.



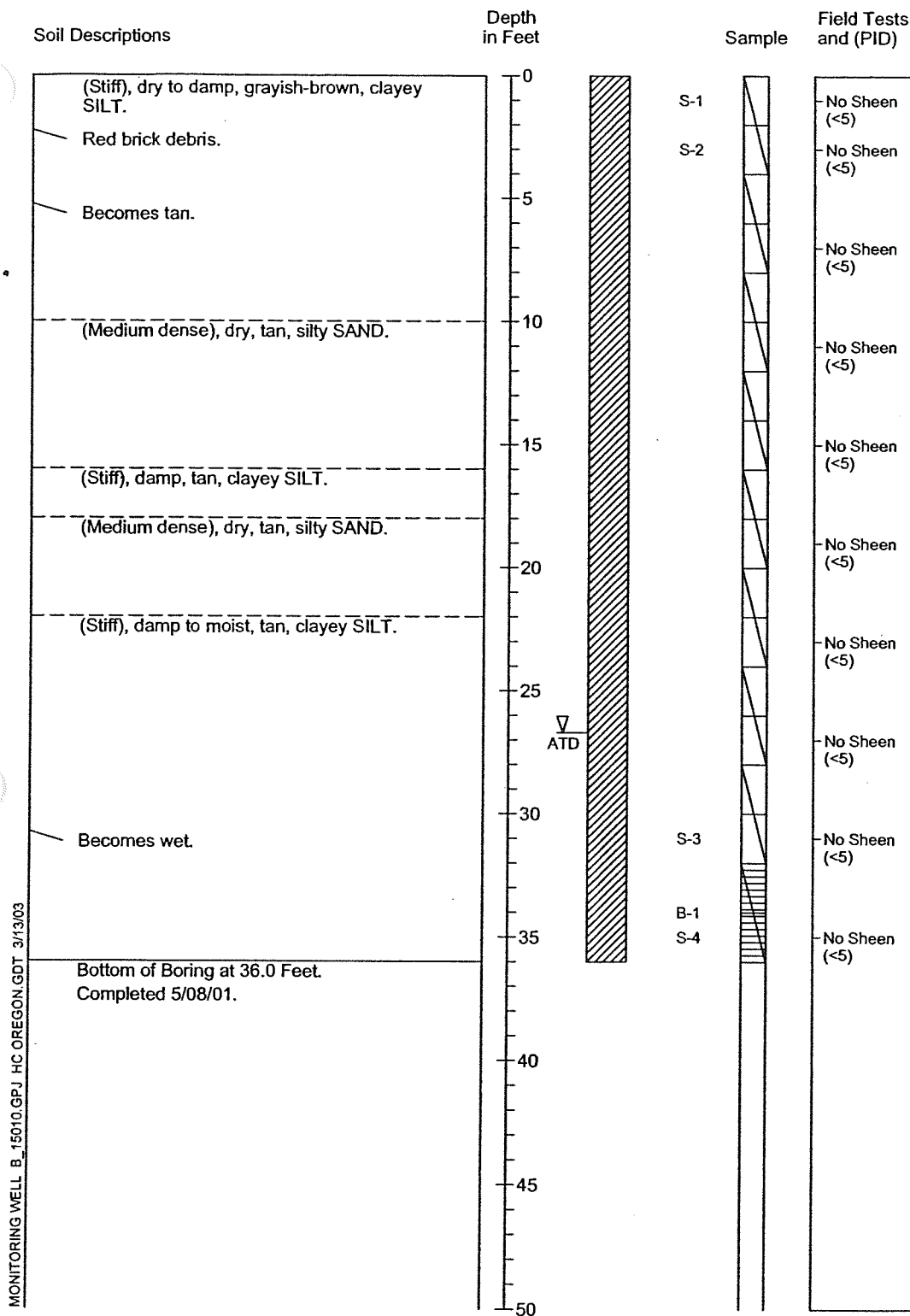
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Figure E-14

Push Probe Exploration B-1



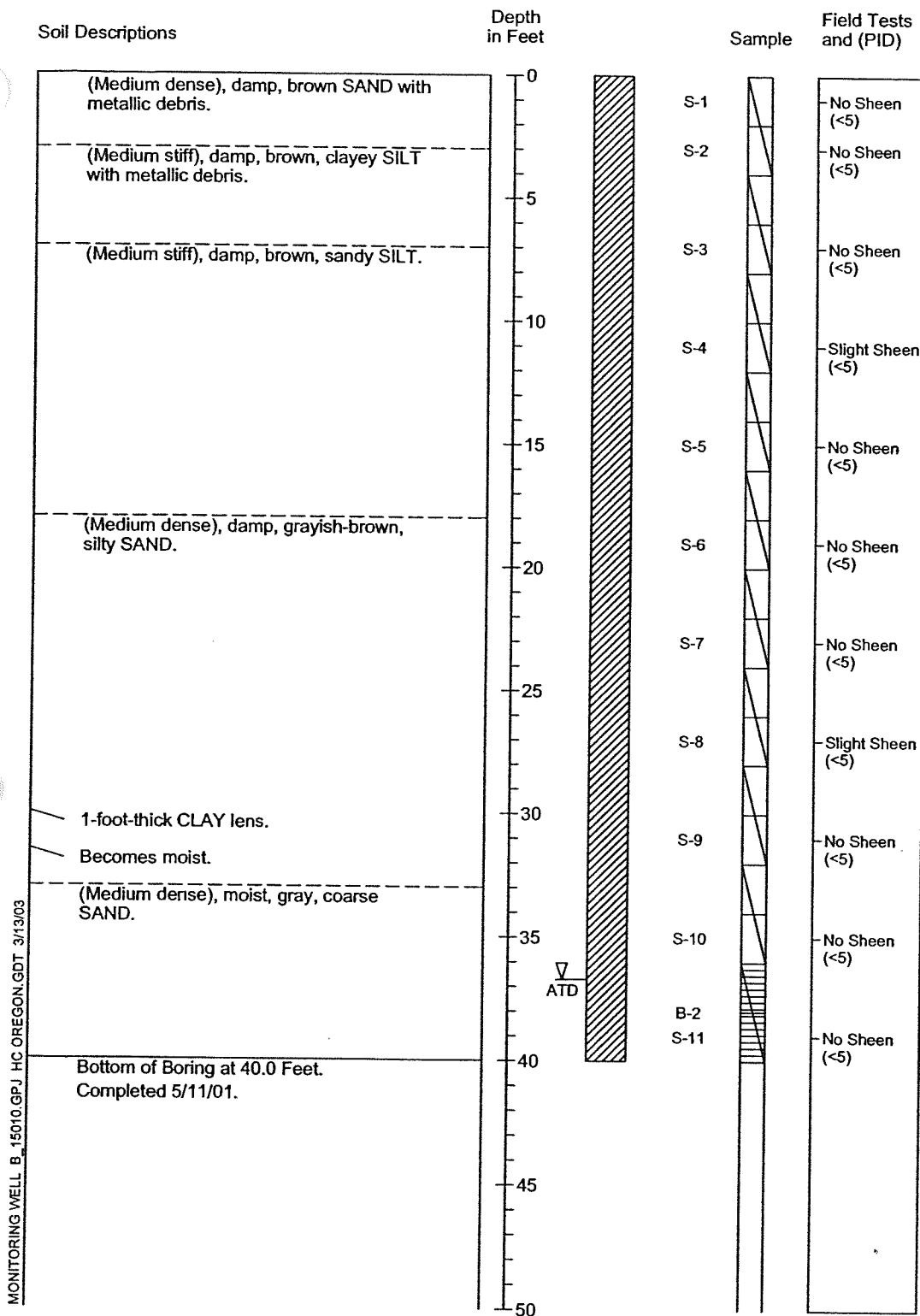
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.


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Figure E-15

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Push Probe Exploration B-2



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

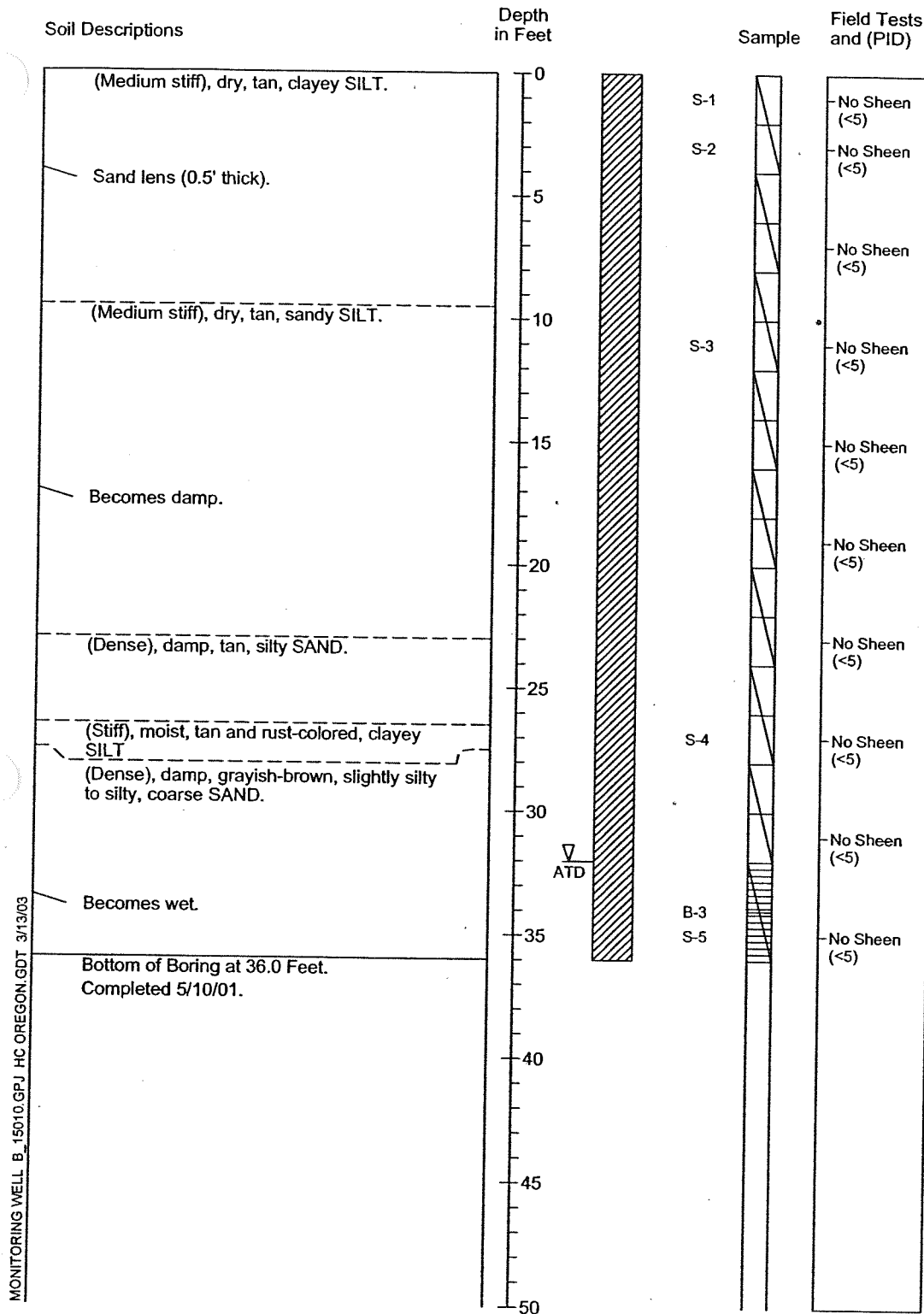
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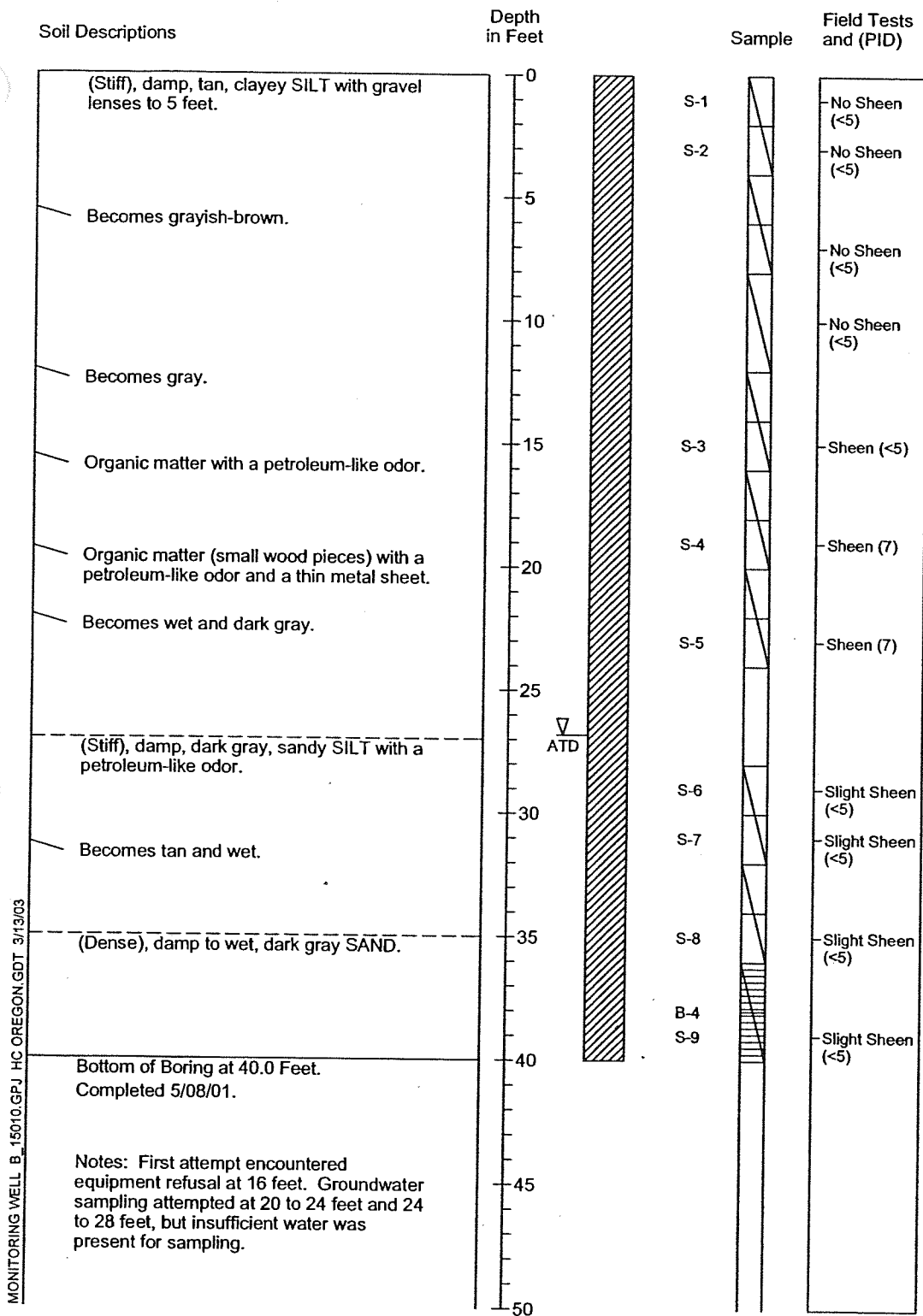
Figure E-16

Push Probe Exploration B-3



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-4



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.



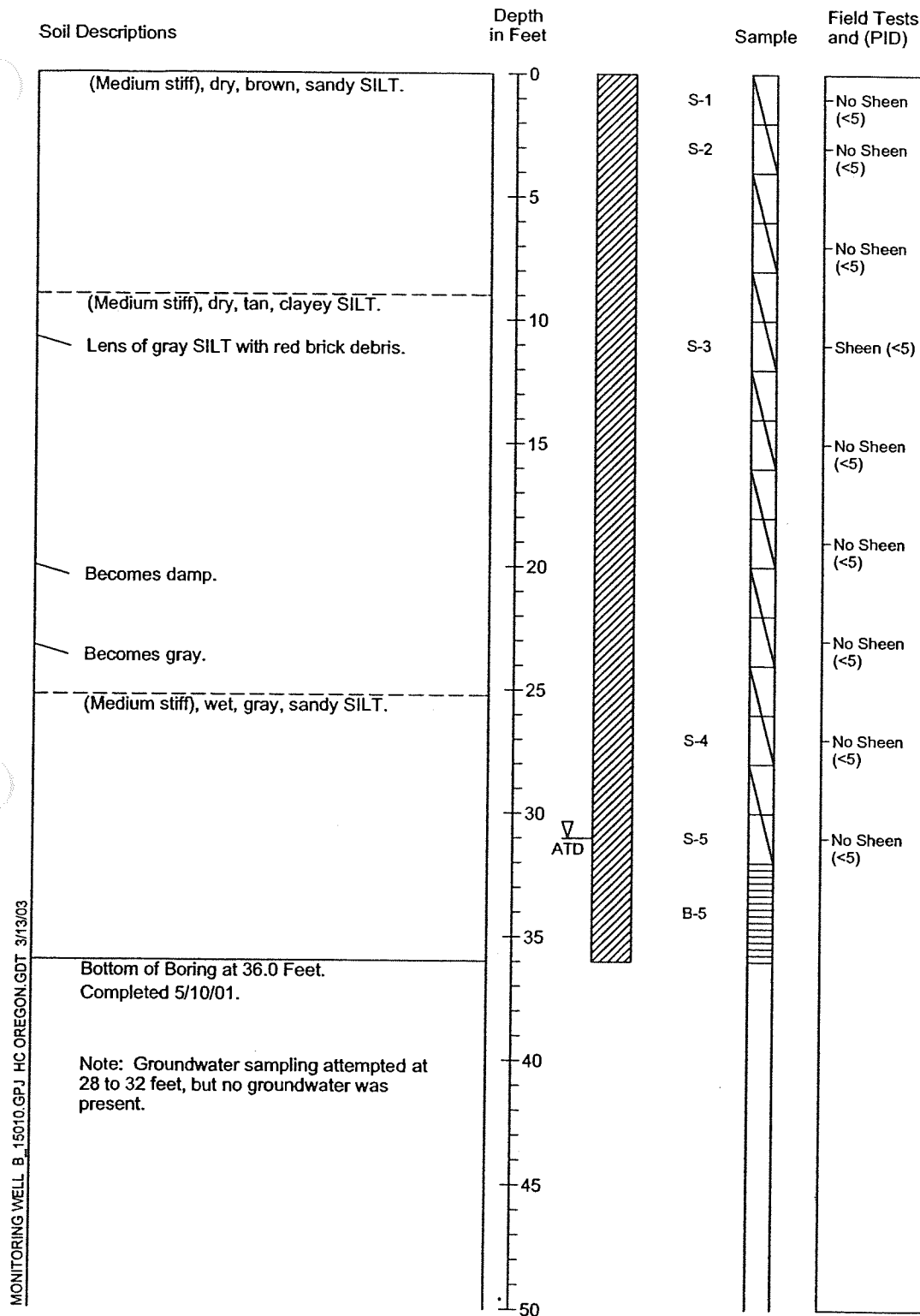
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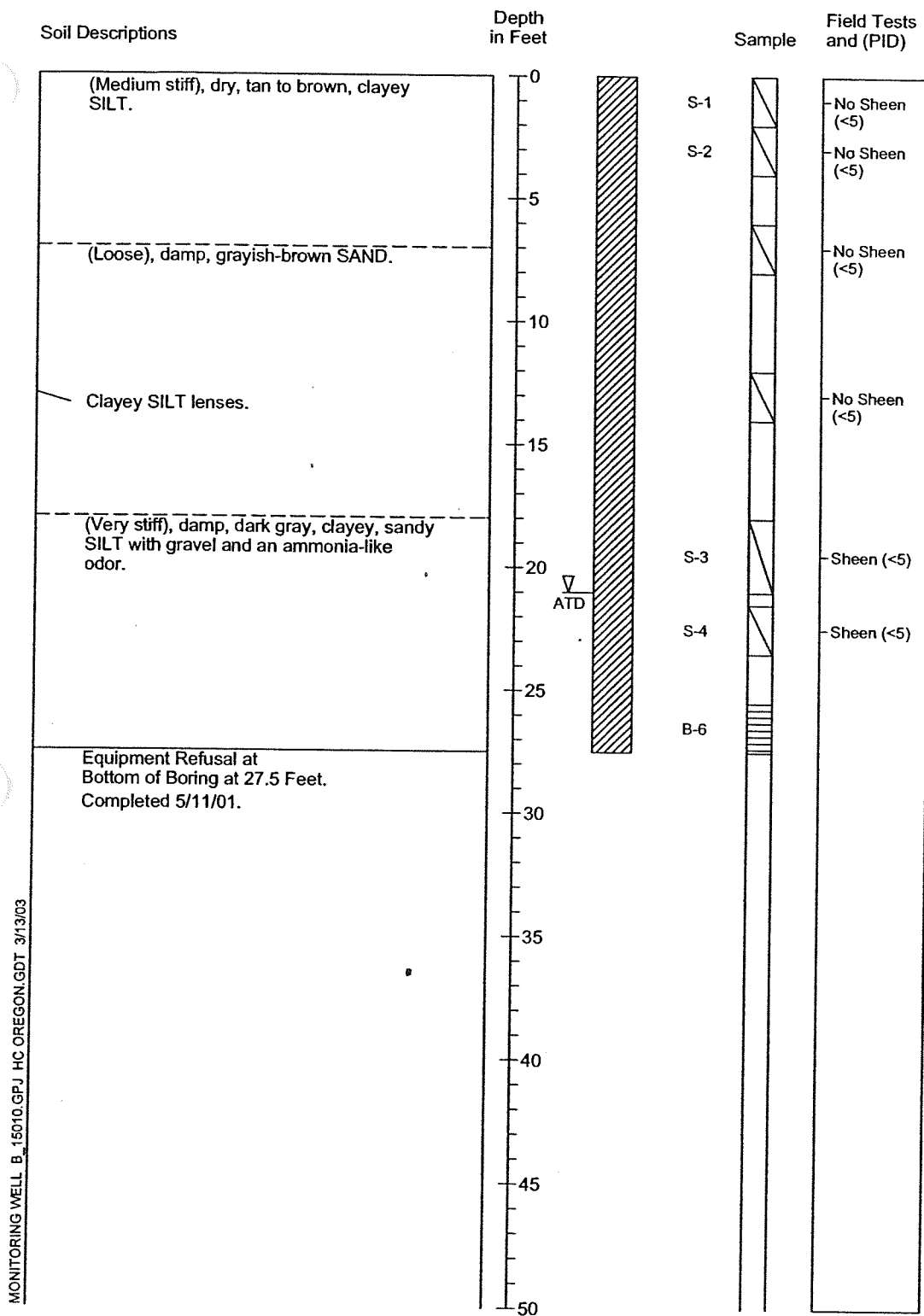
Figure E-18

Push Probe Exploration B-5



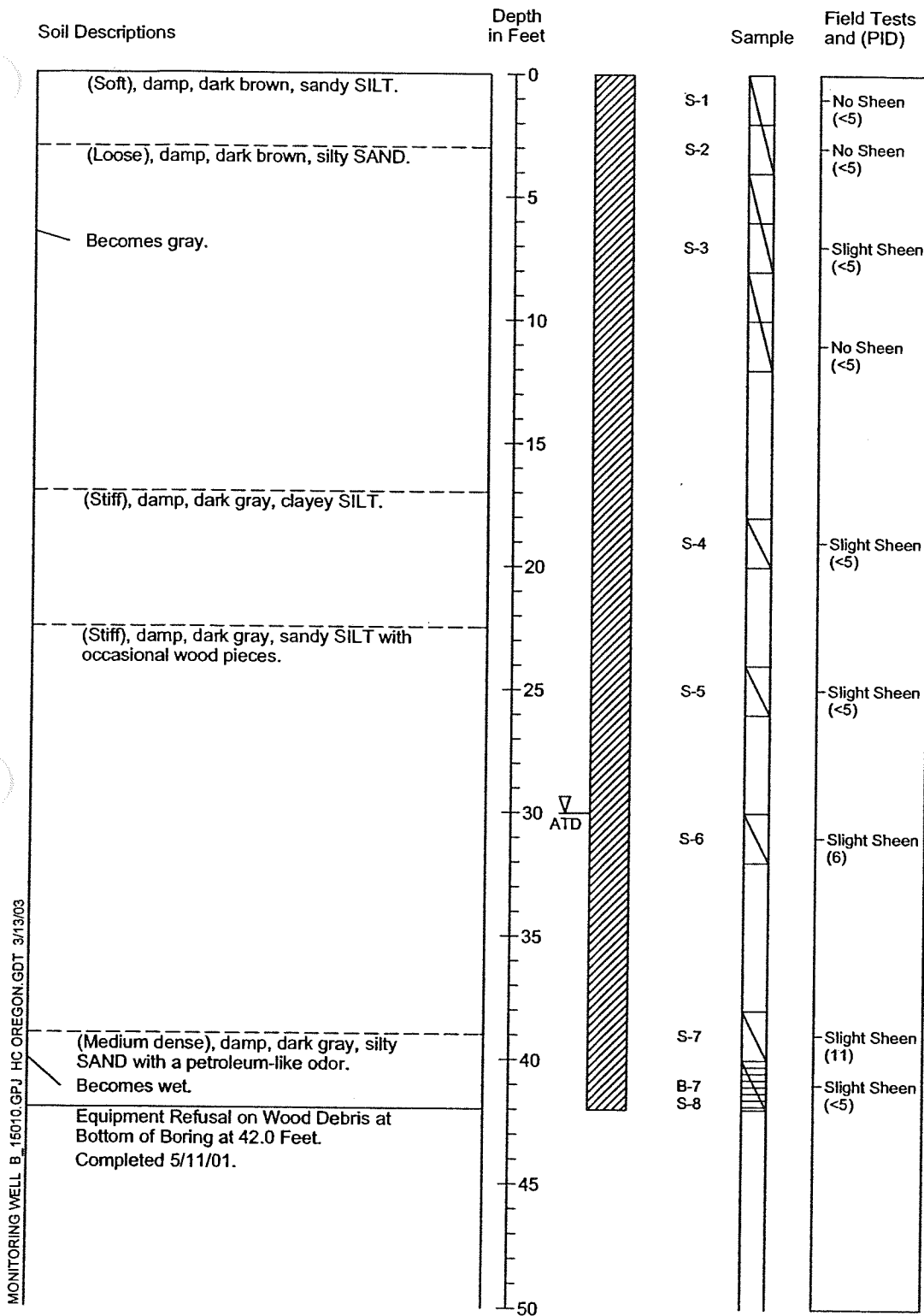
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-6



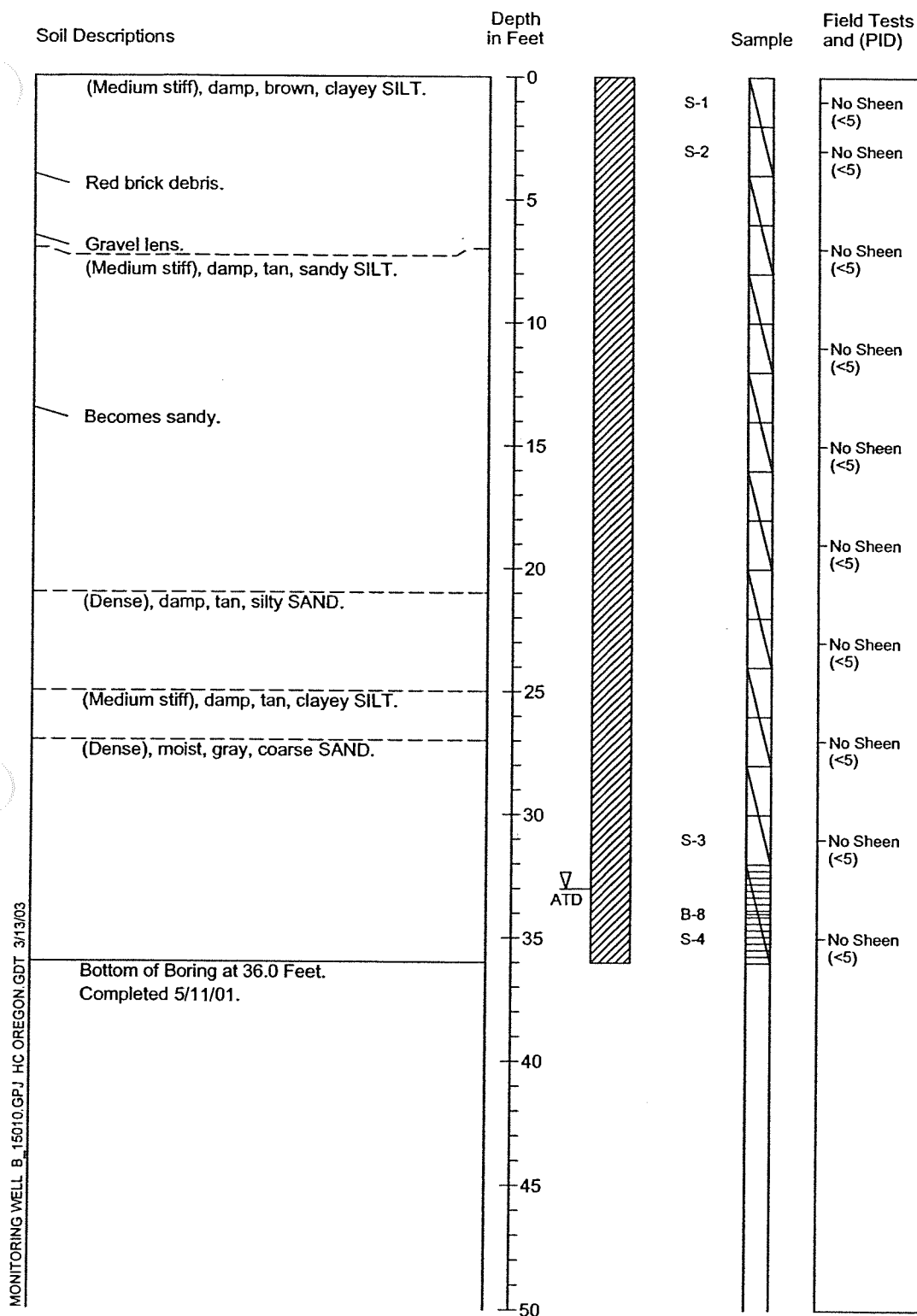
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-7



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Push Probe Exploration B-8



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

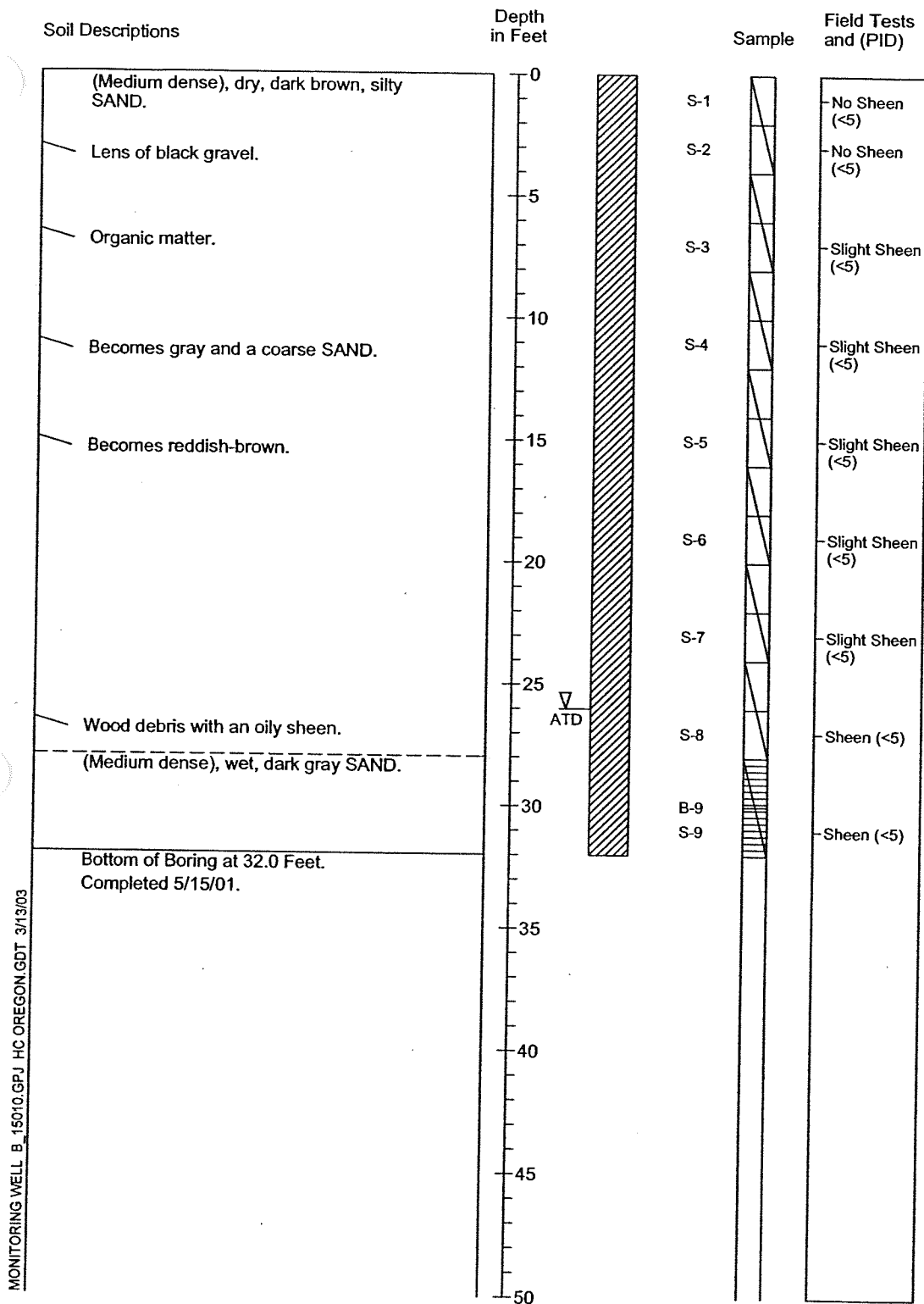
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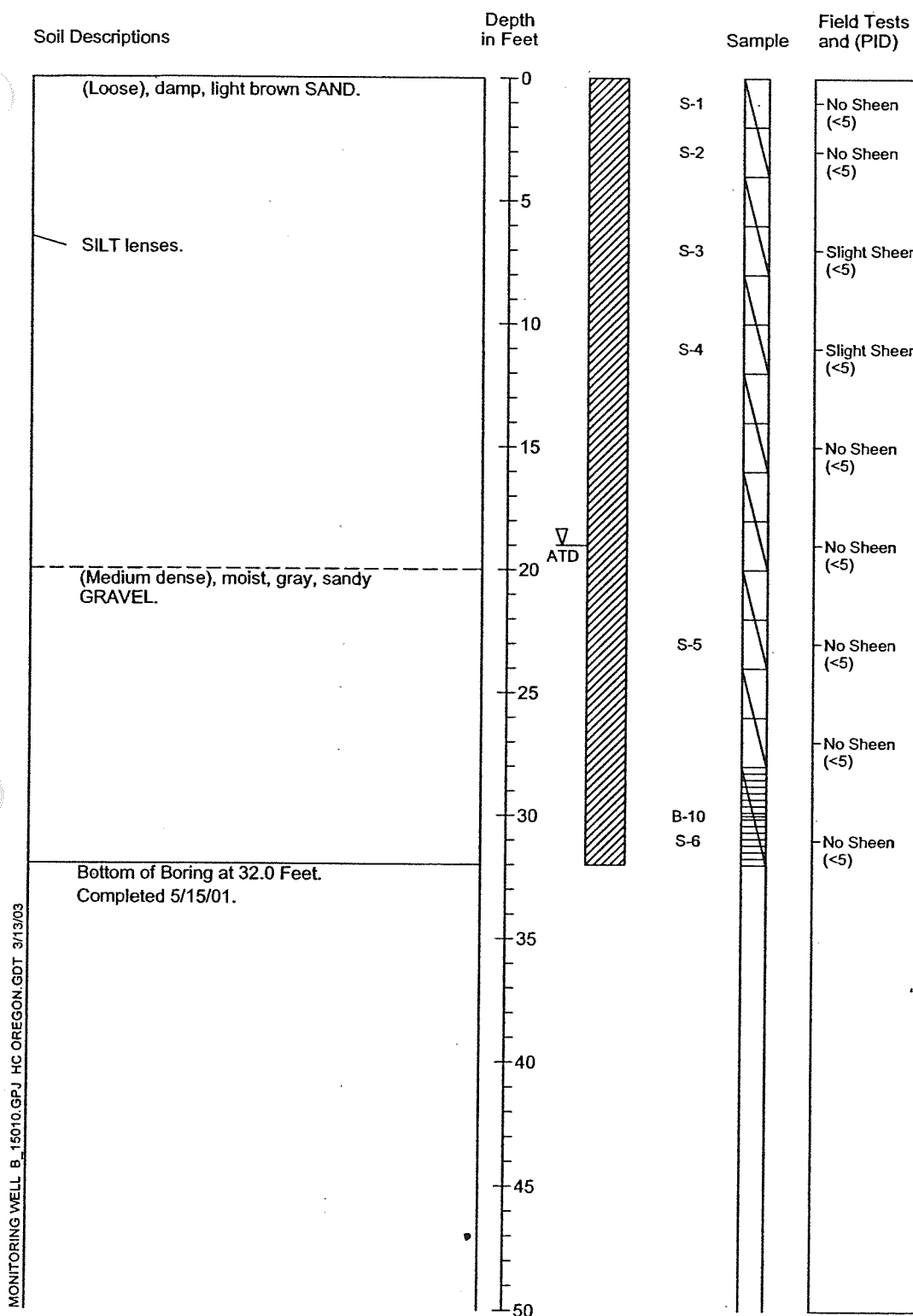
Figure E-22

Push Probe Exploration B-9



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-10



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

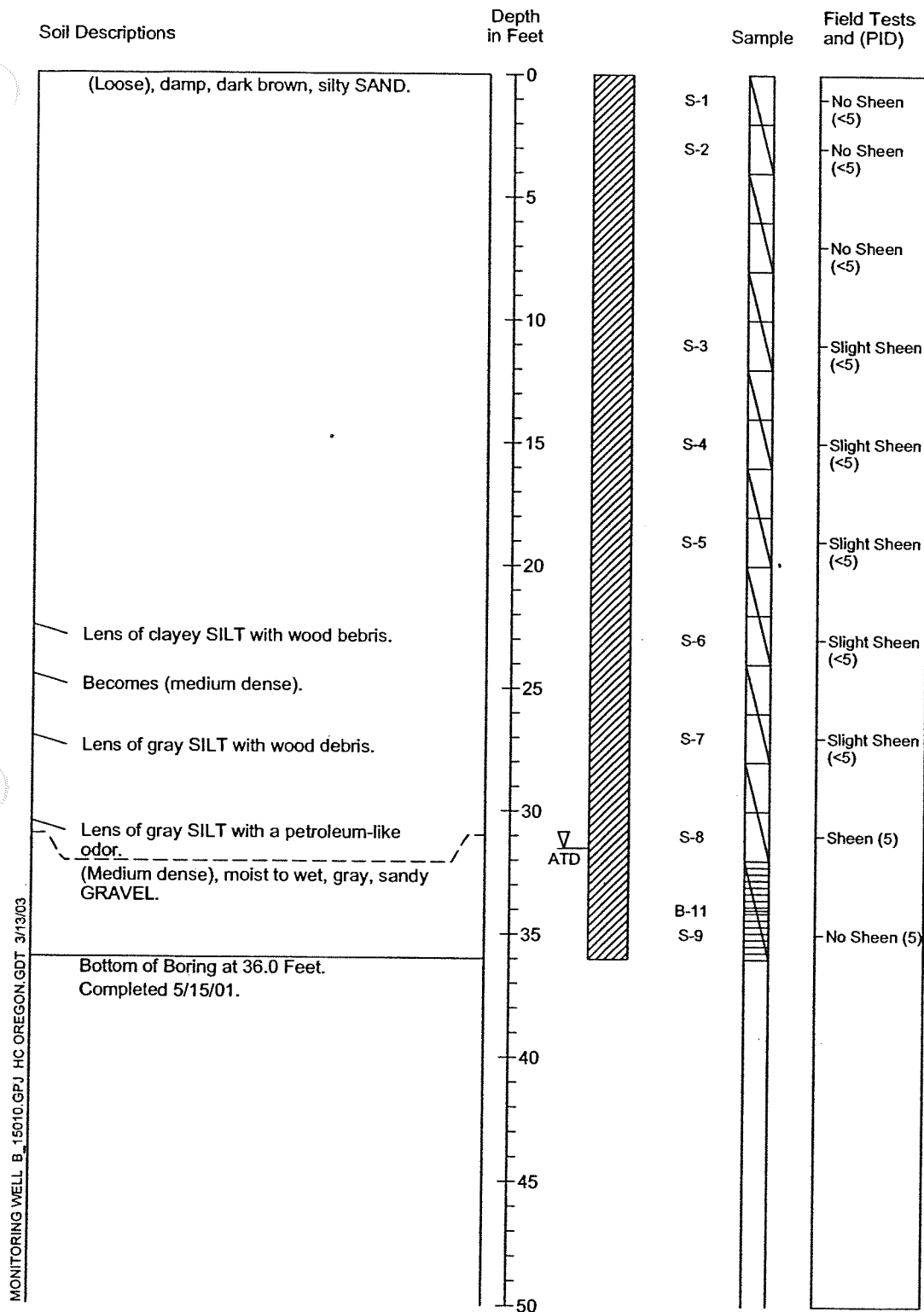
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Figure E-24

Push Probe Exploration B-11



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

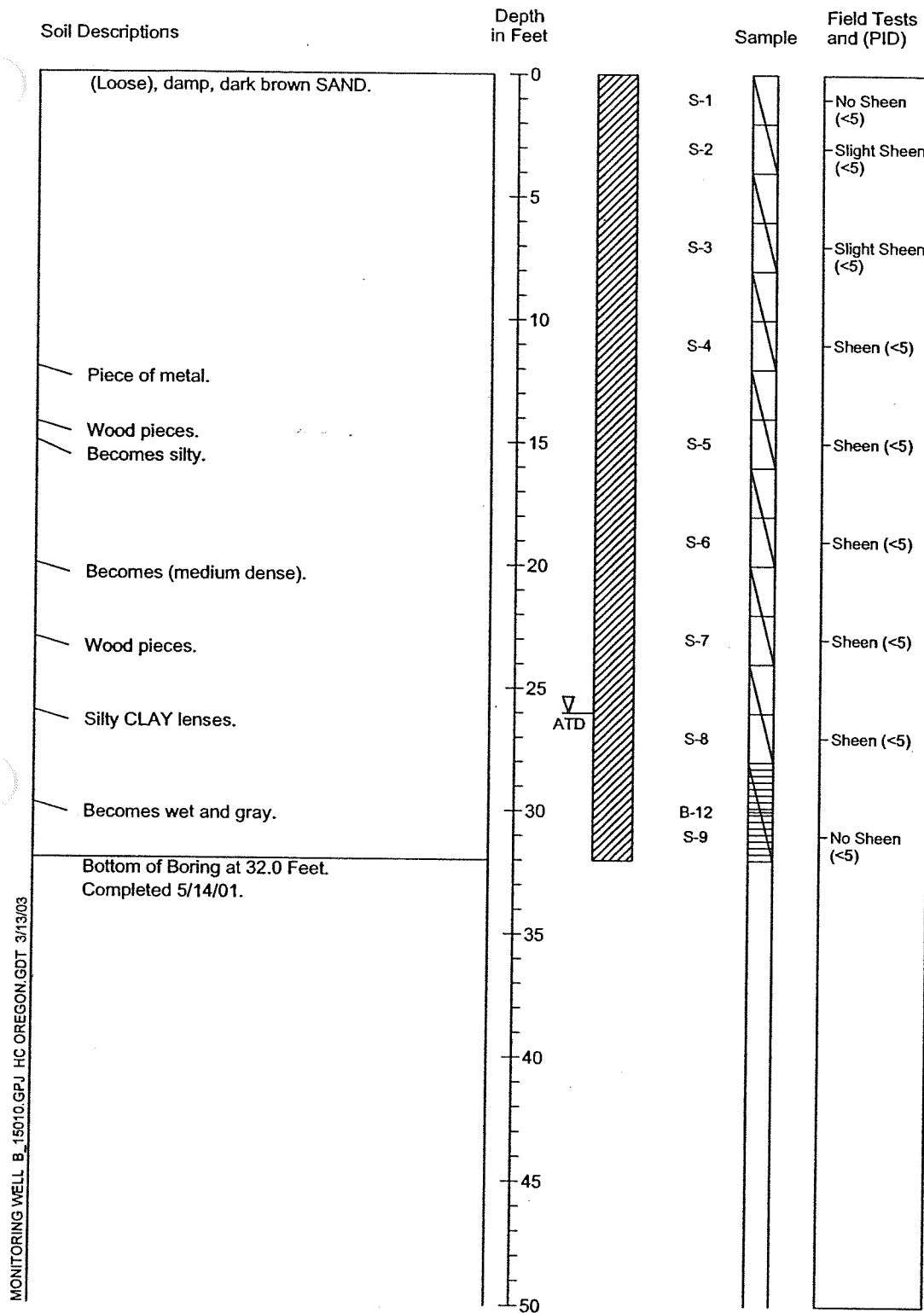


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Figure E-25

Push Probe Exploration B-12



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.



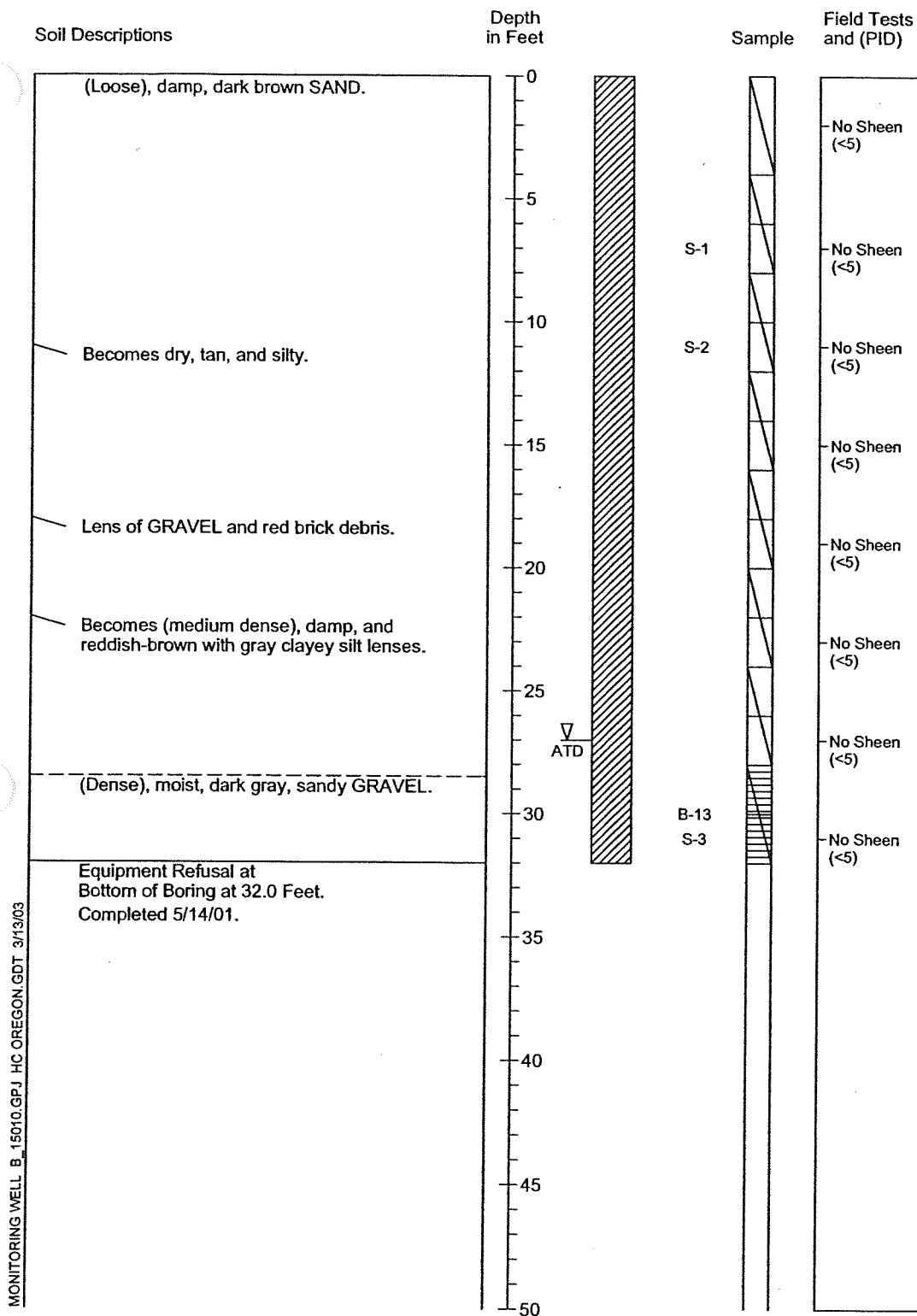
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Figure E-26

Push Probe Exploration B-13



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.



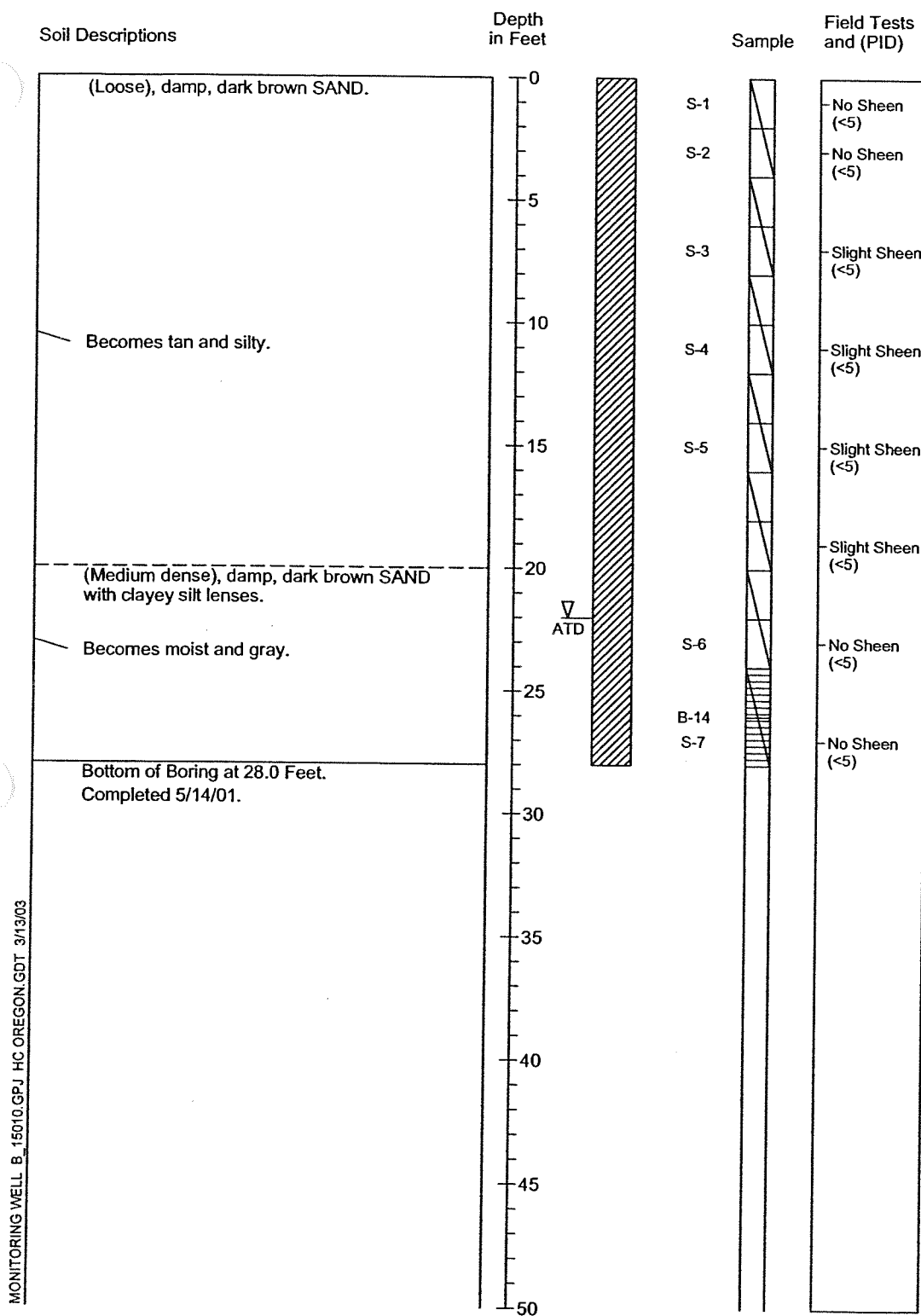
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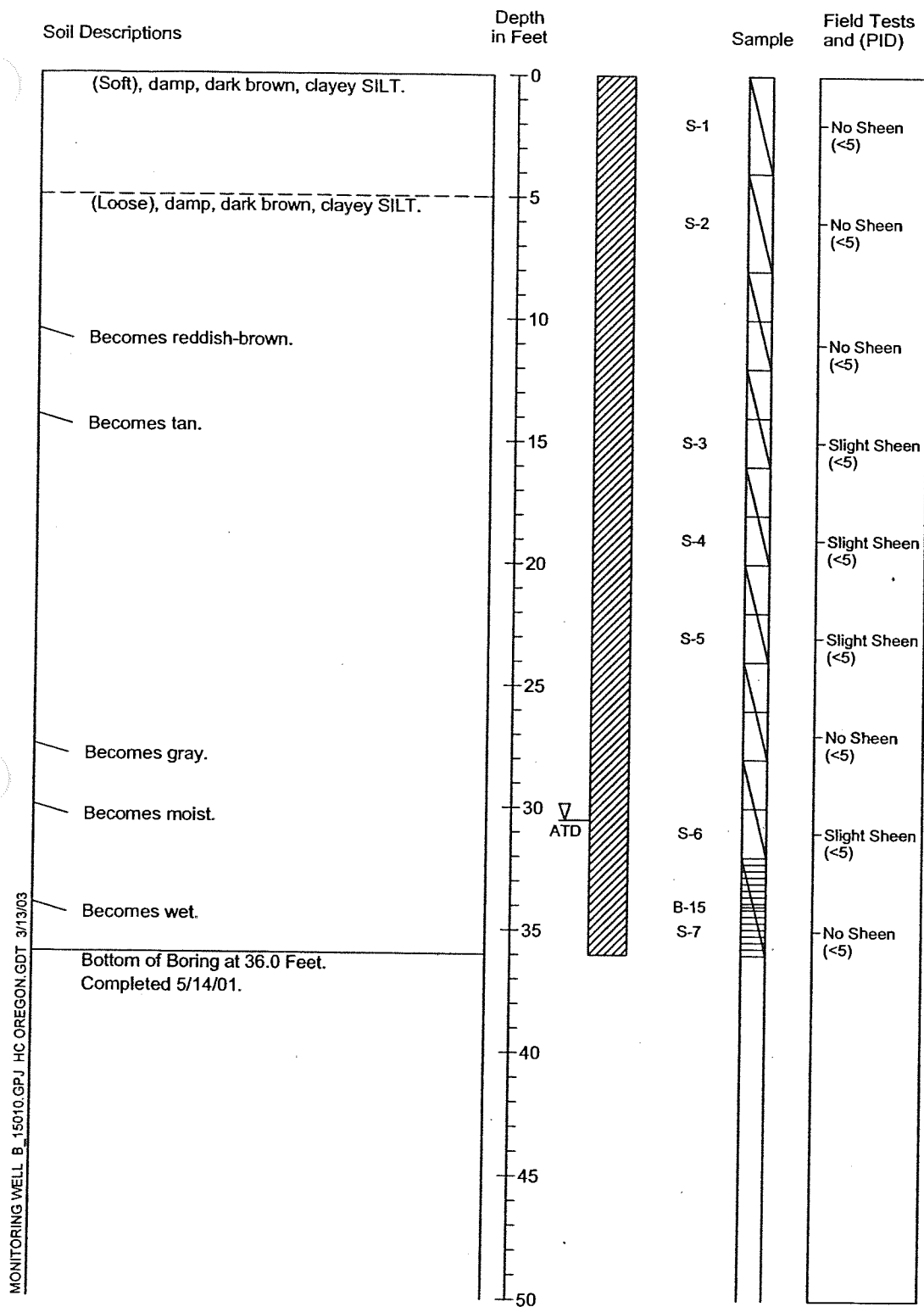
Figure E-27

Push Probe Exploration B-14



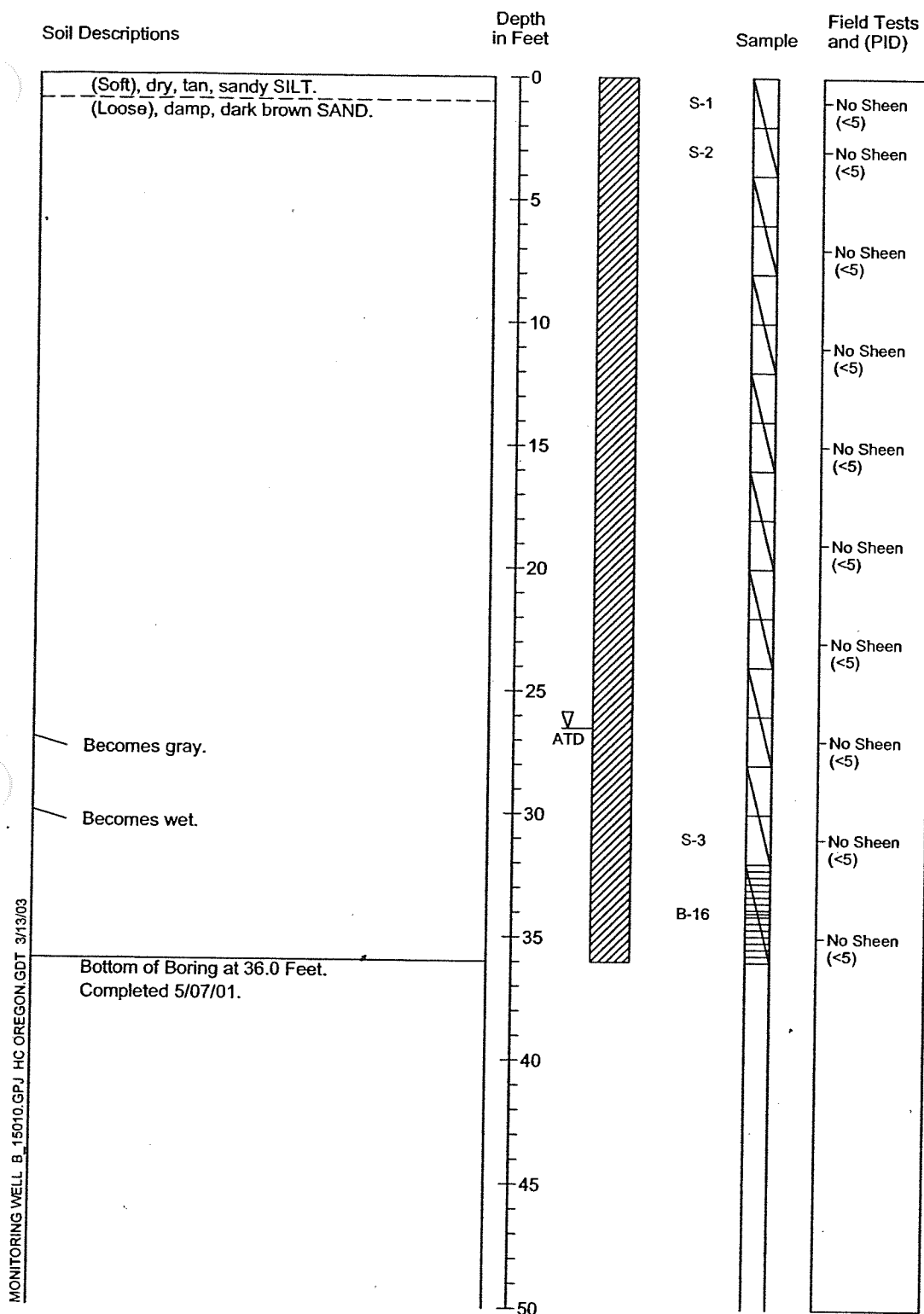
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-15



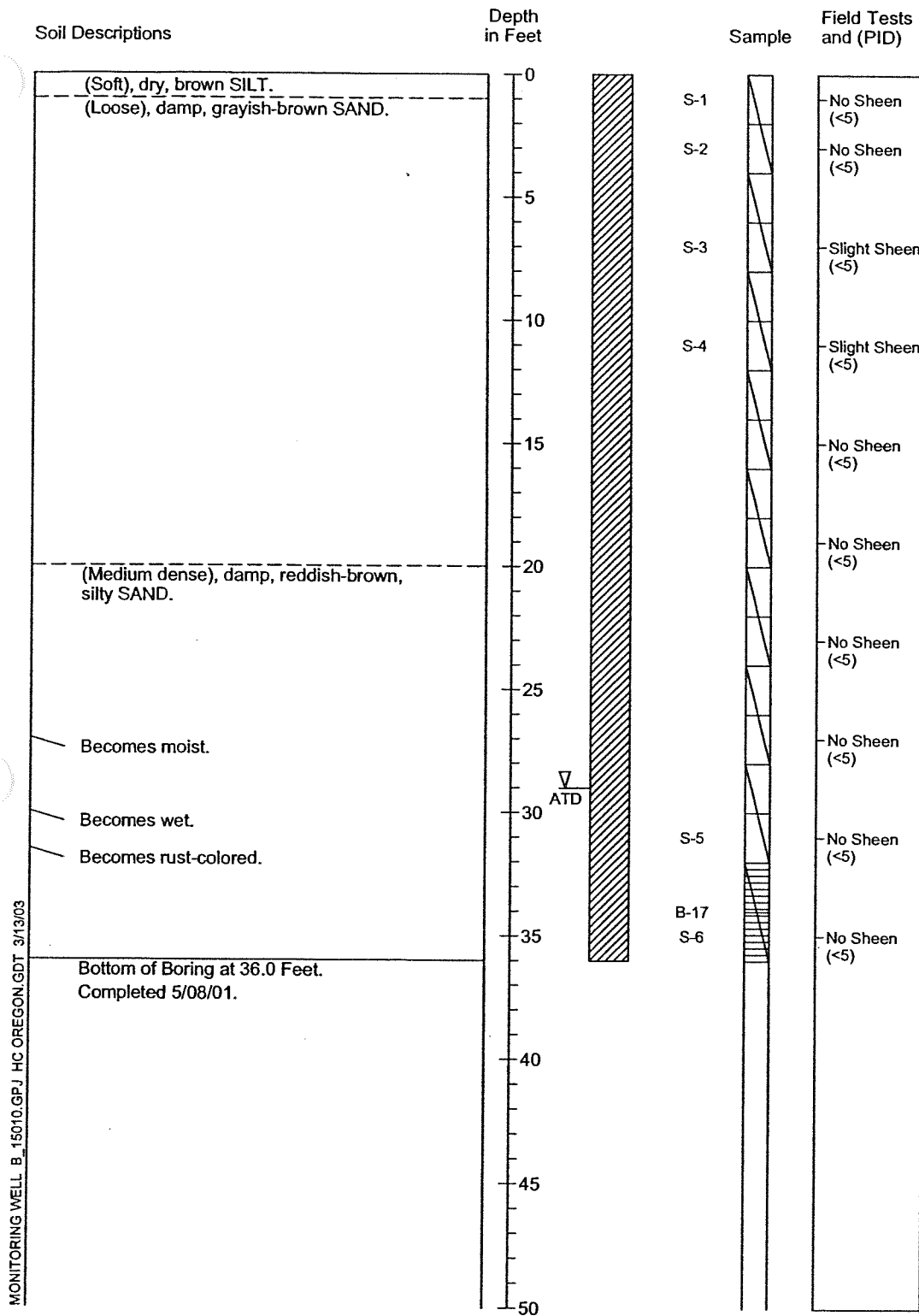
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-16



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-17



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.



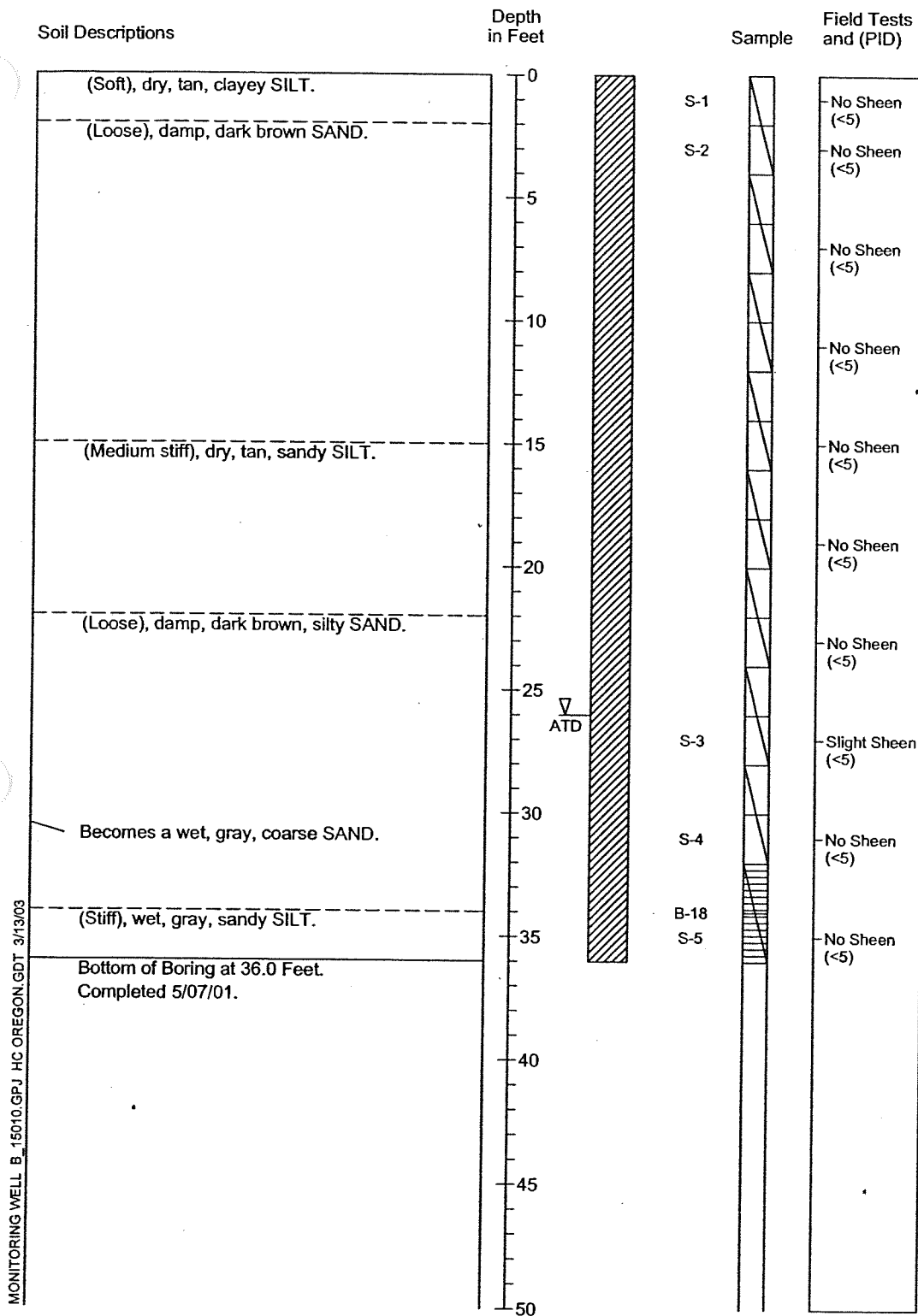
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Figure E-31

Push Probe Exploration B-18



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.



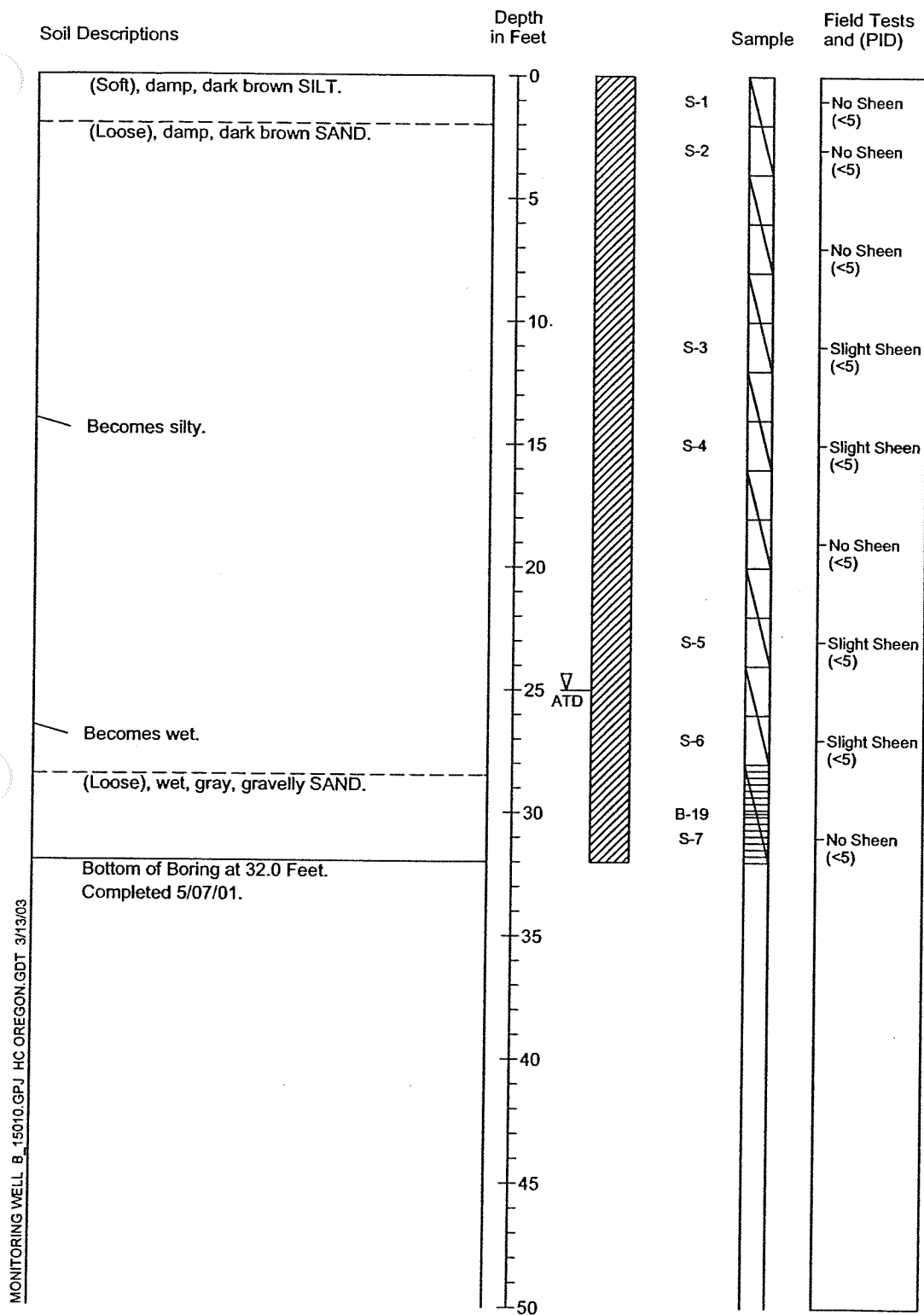
HARTCROWSER

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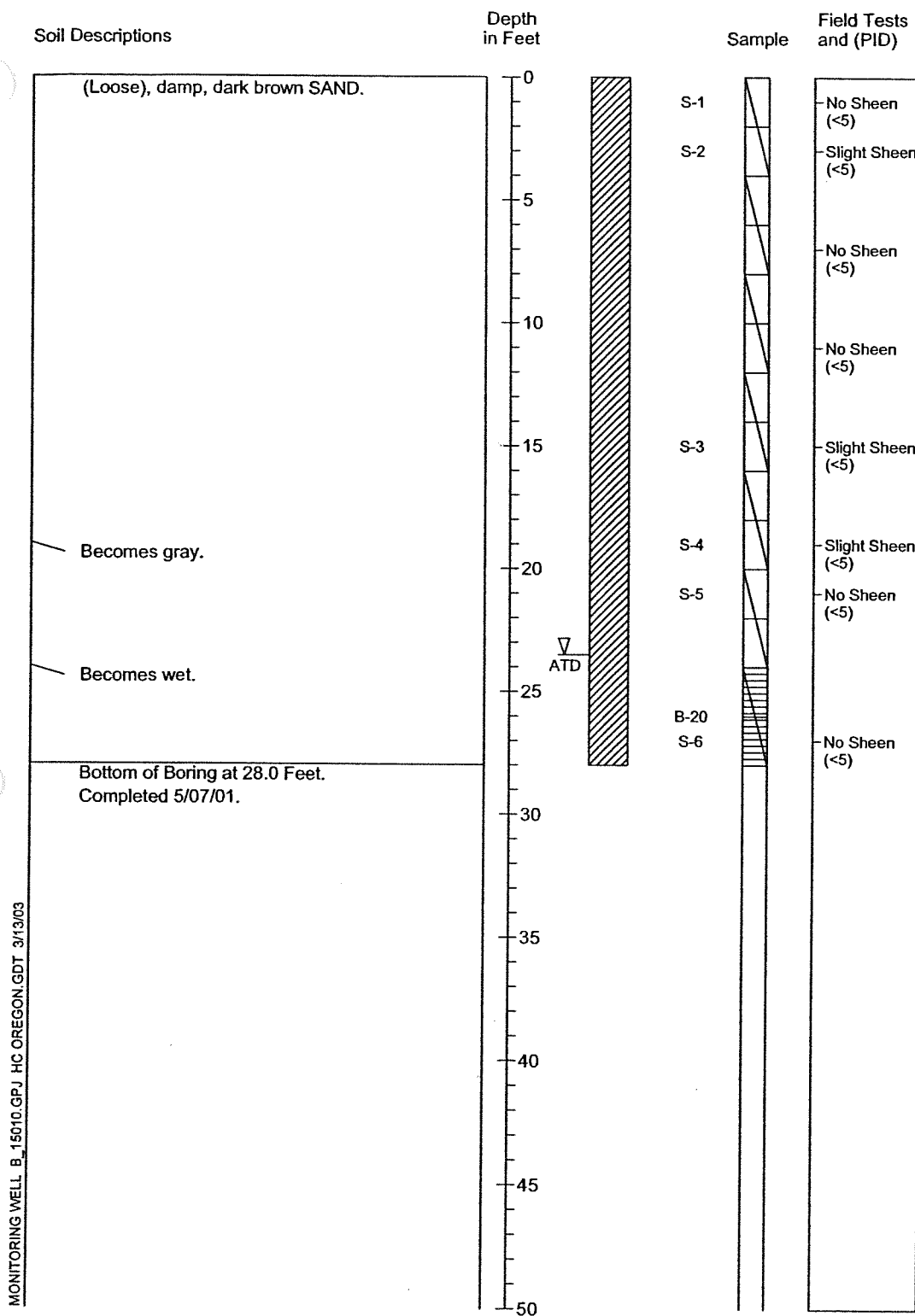
Figure E-32

Push Probe Exploration B-19



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-20



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.



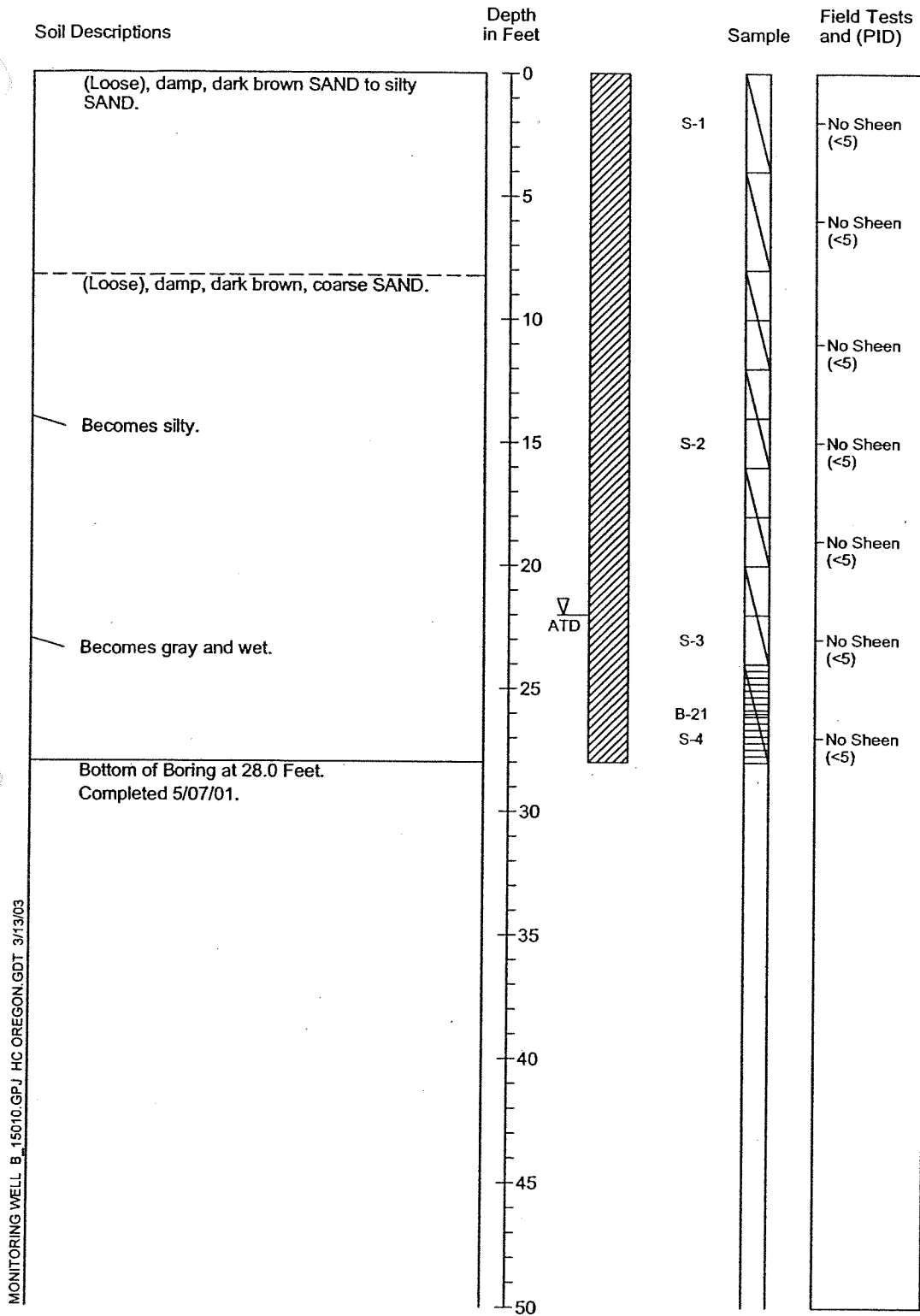
HARTCROWSER

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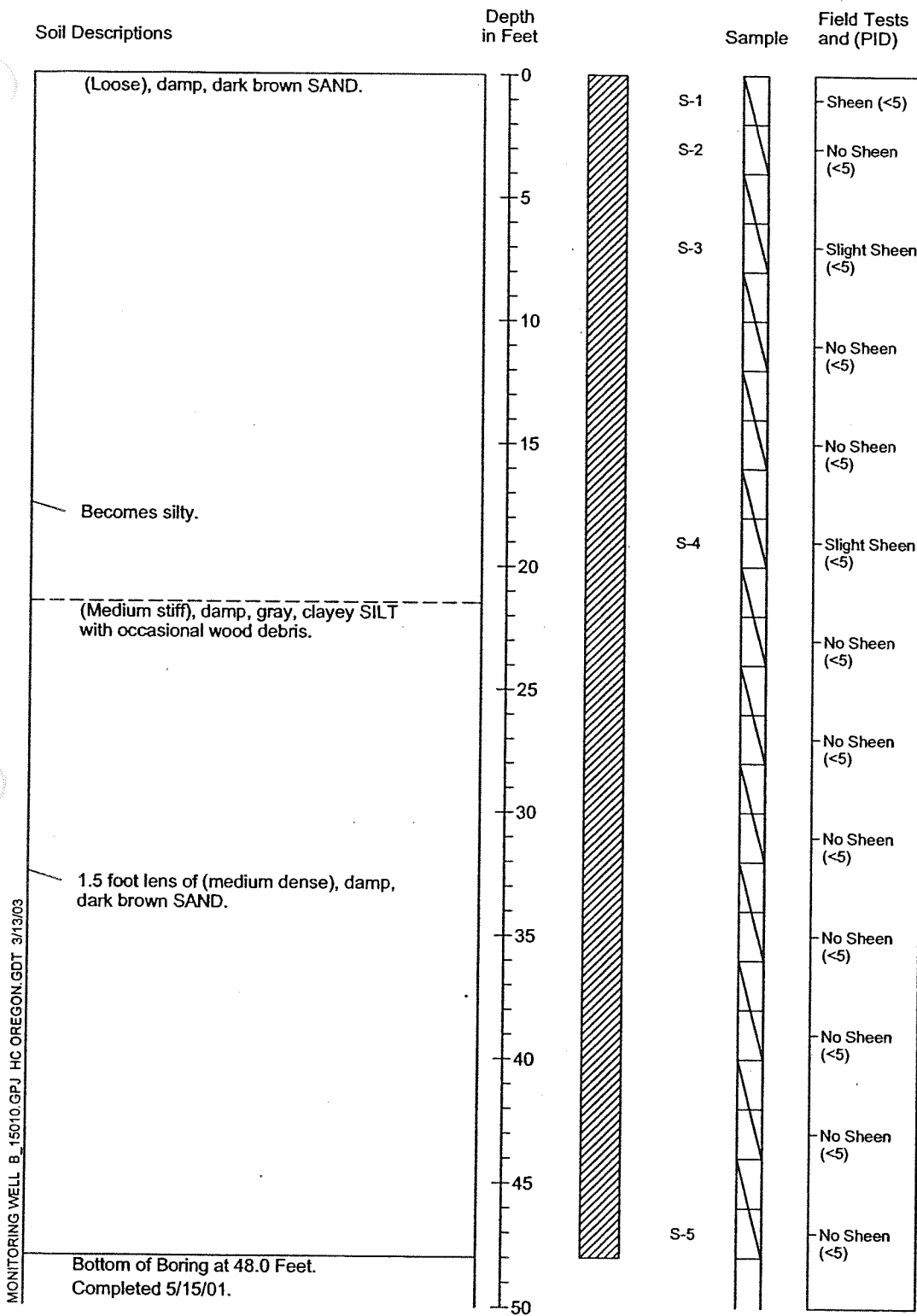
Figure E-34

Push Probe Exploration B-21



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-22



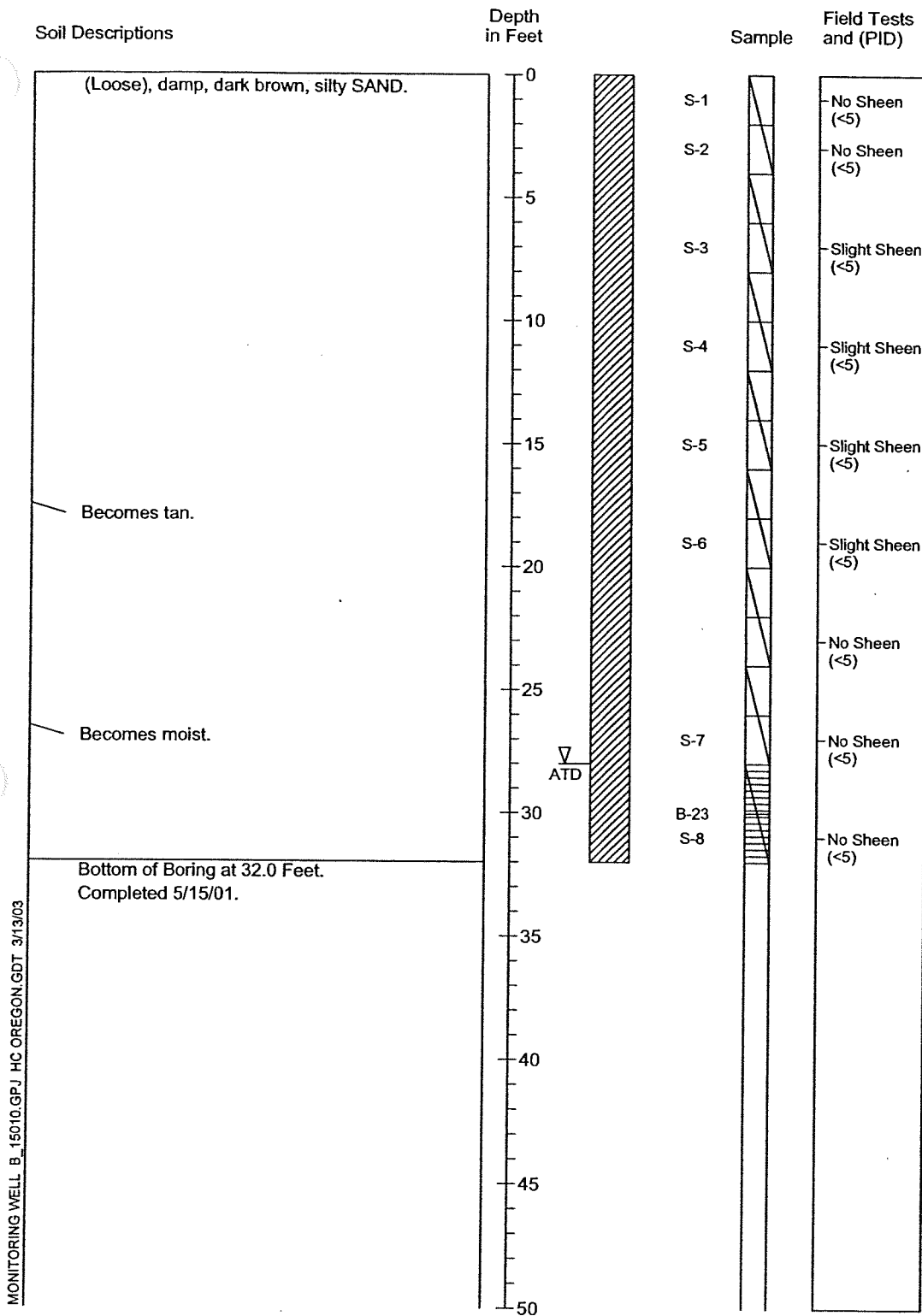
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



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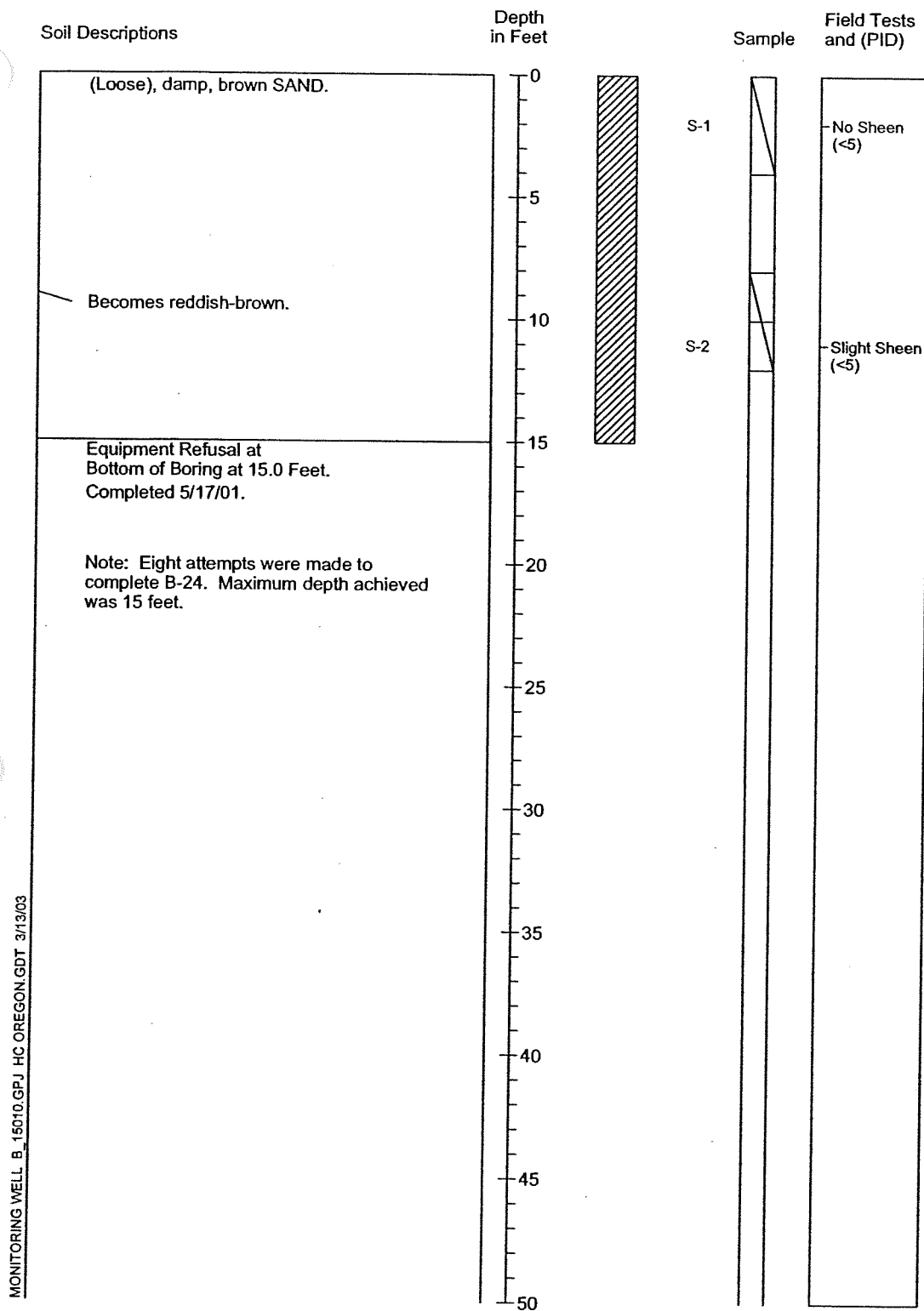
Figure E-36

Push Probe Exploration B-23



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-24



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



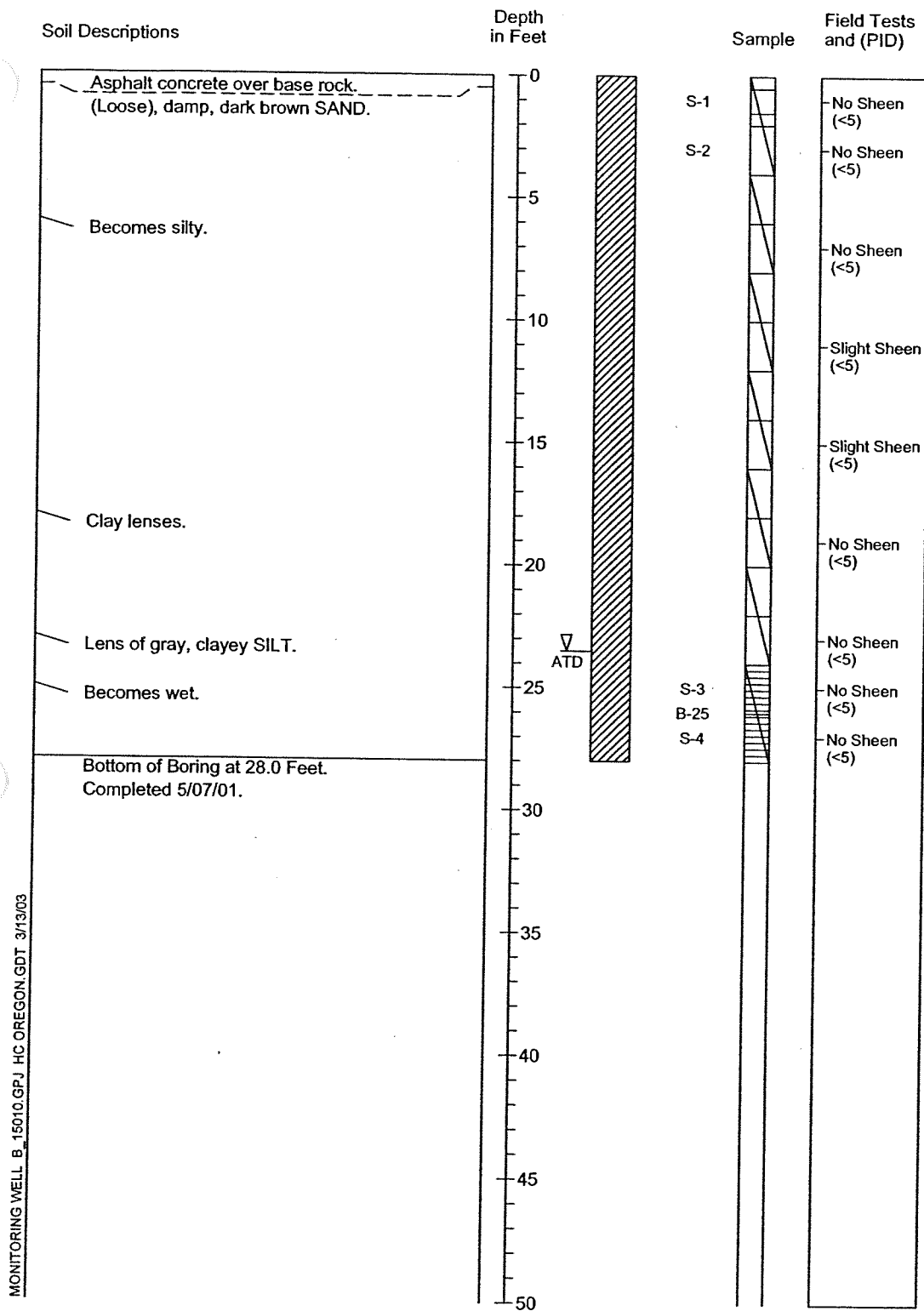
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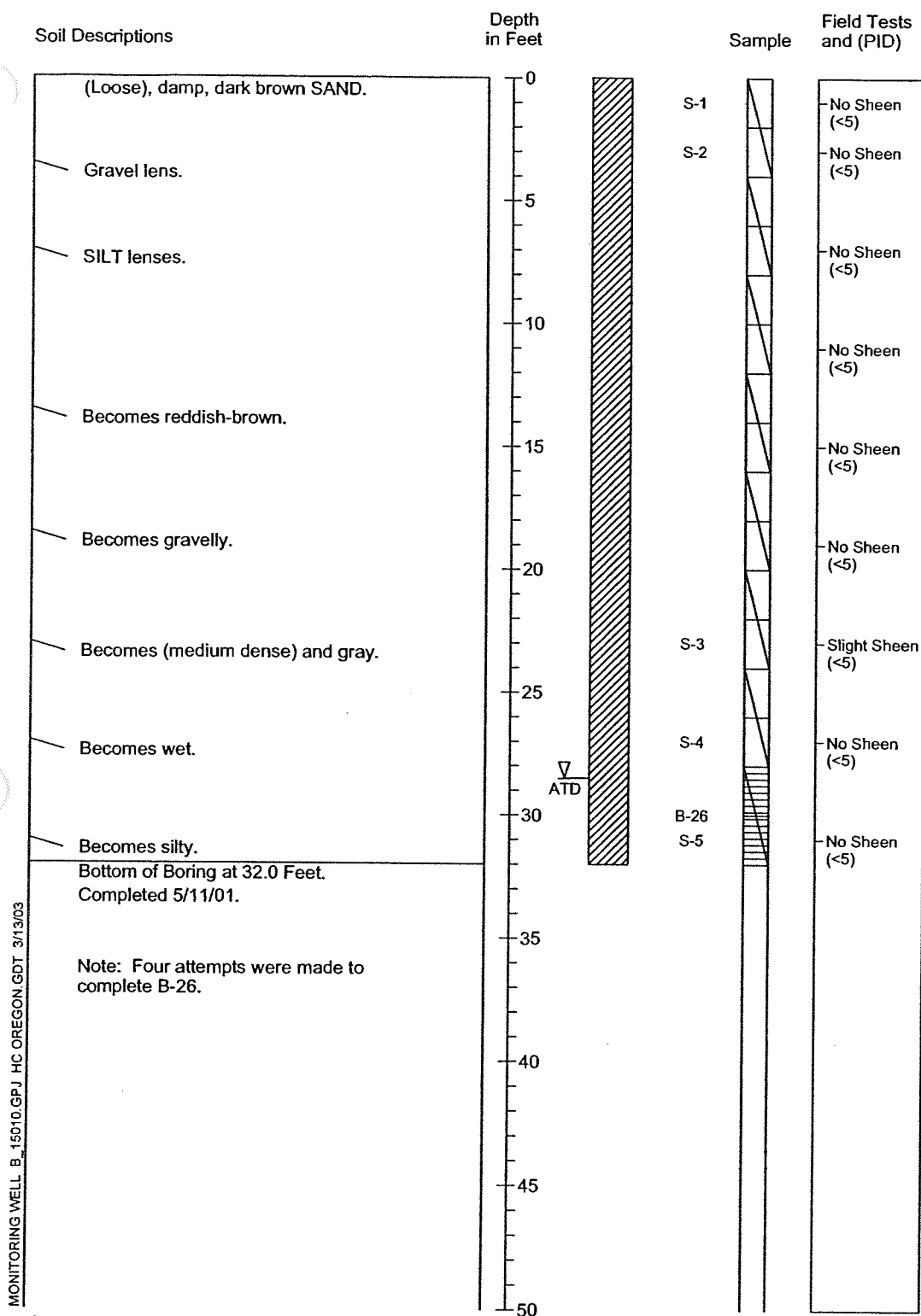
Figure E-38

Push Probe Exploration B-25



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-26



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

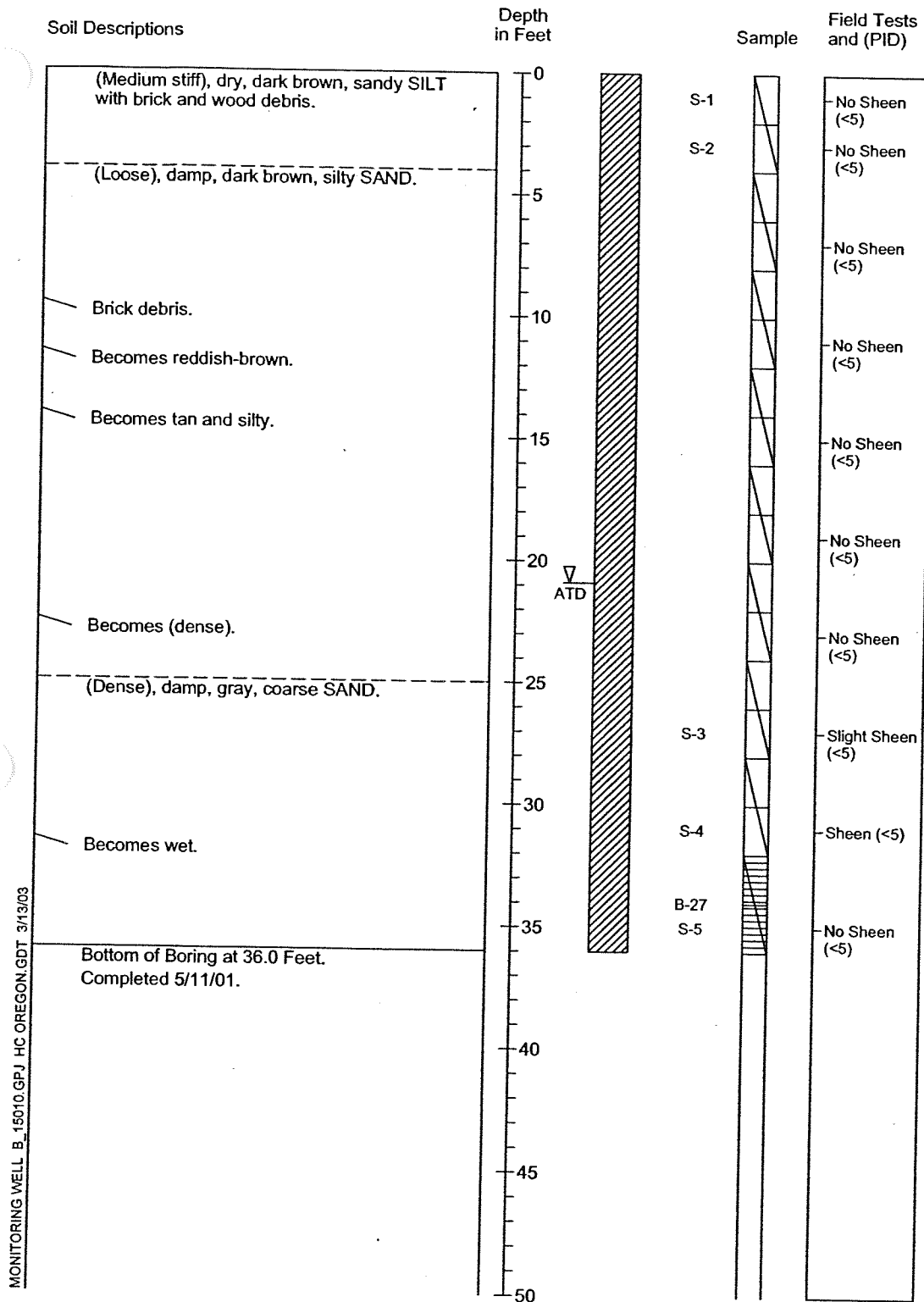

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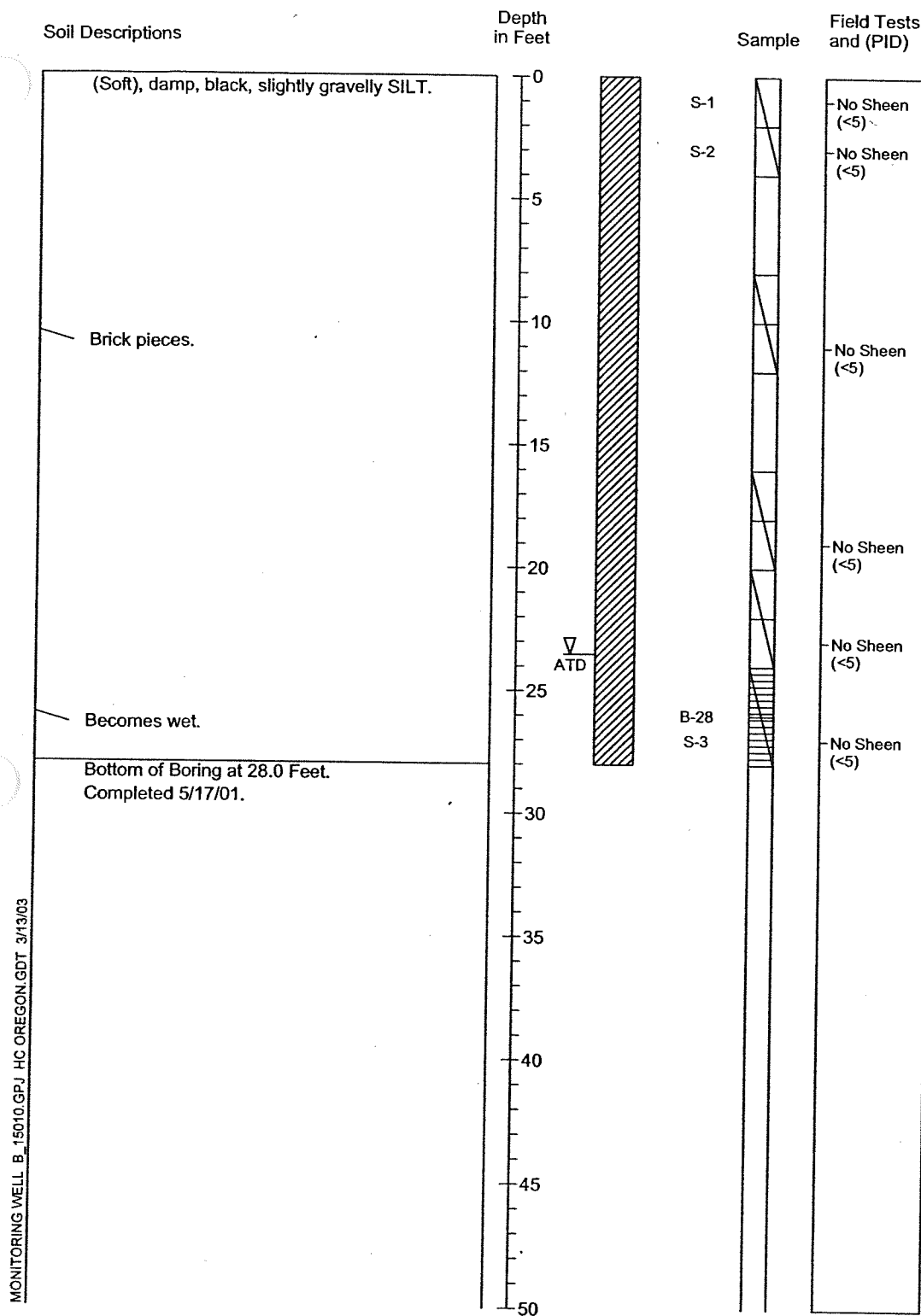
Figure E-40

Push Probe Exploration B-27



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-28



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

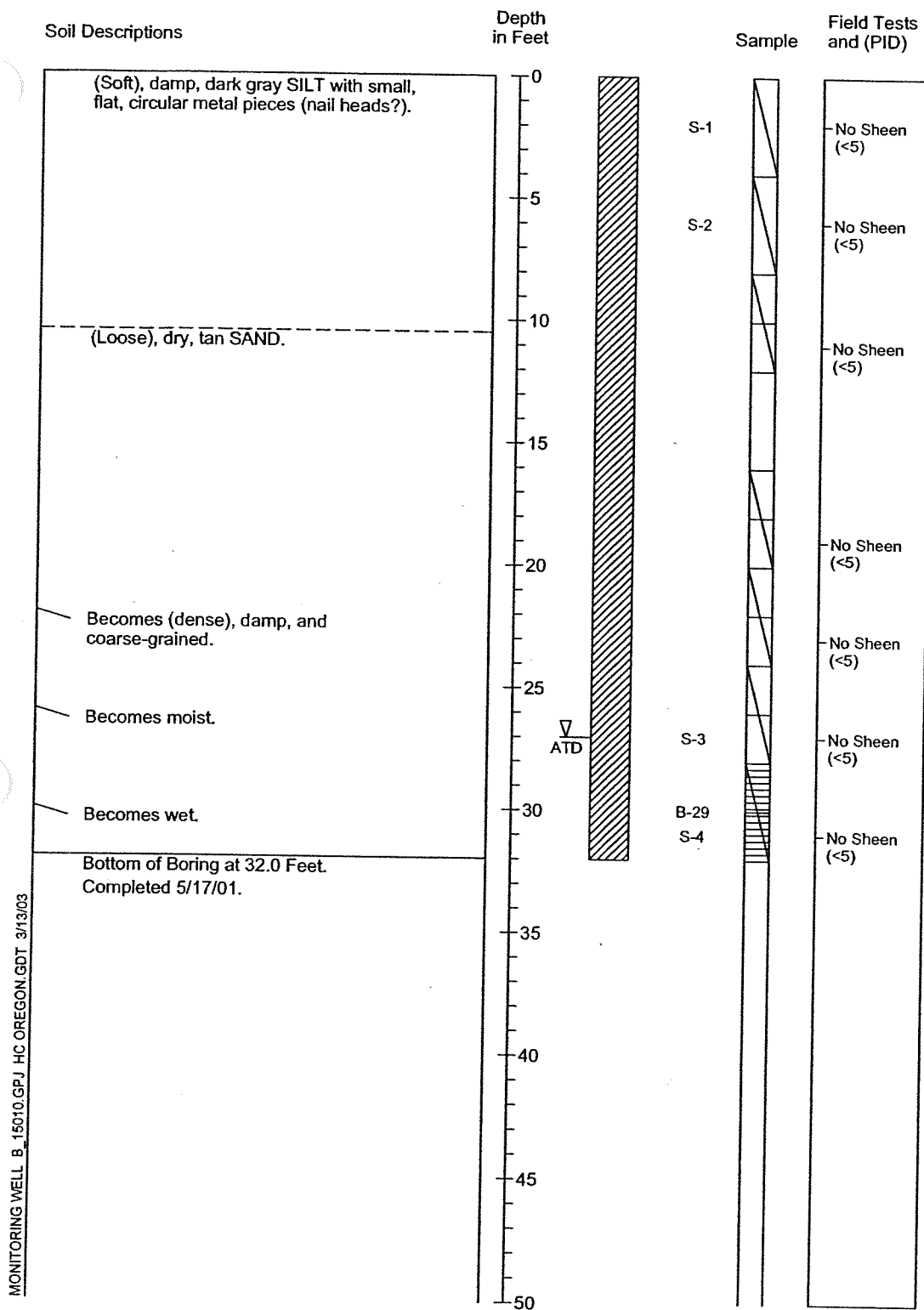
HARTCROWSER

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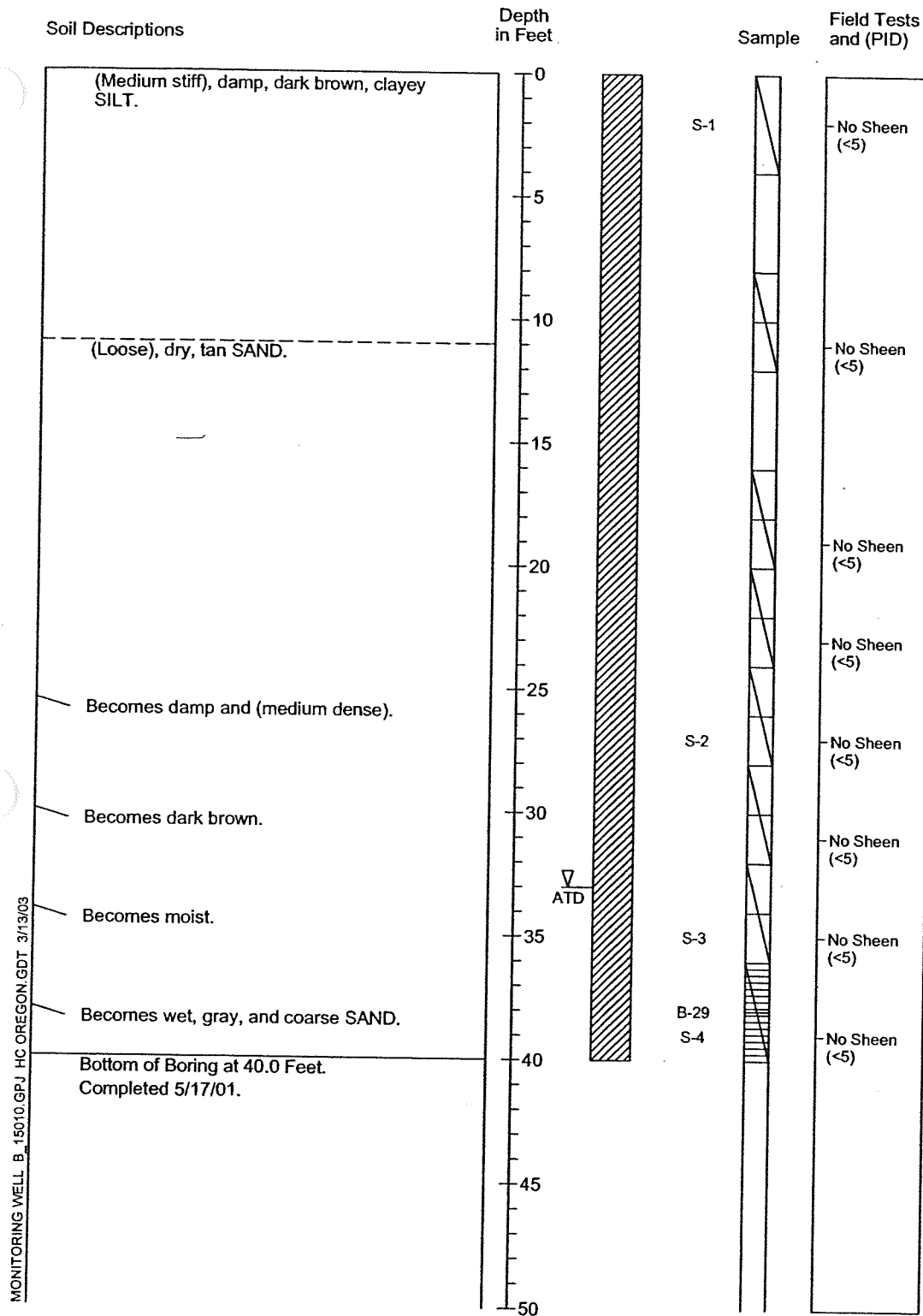
Figure E-42

Push Probe Exploration B-29



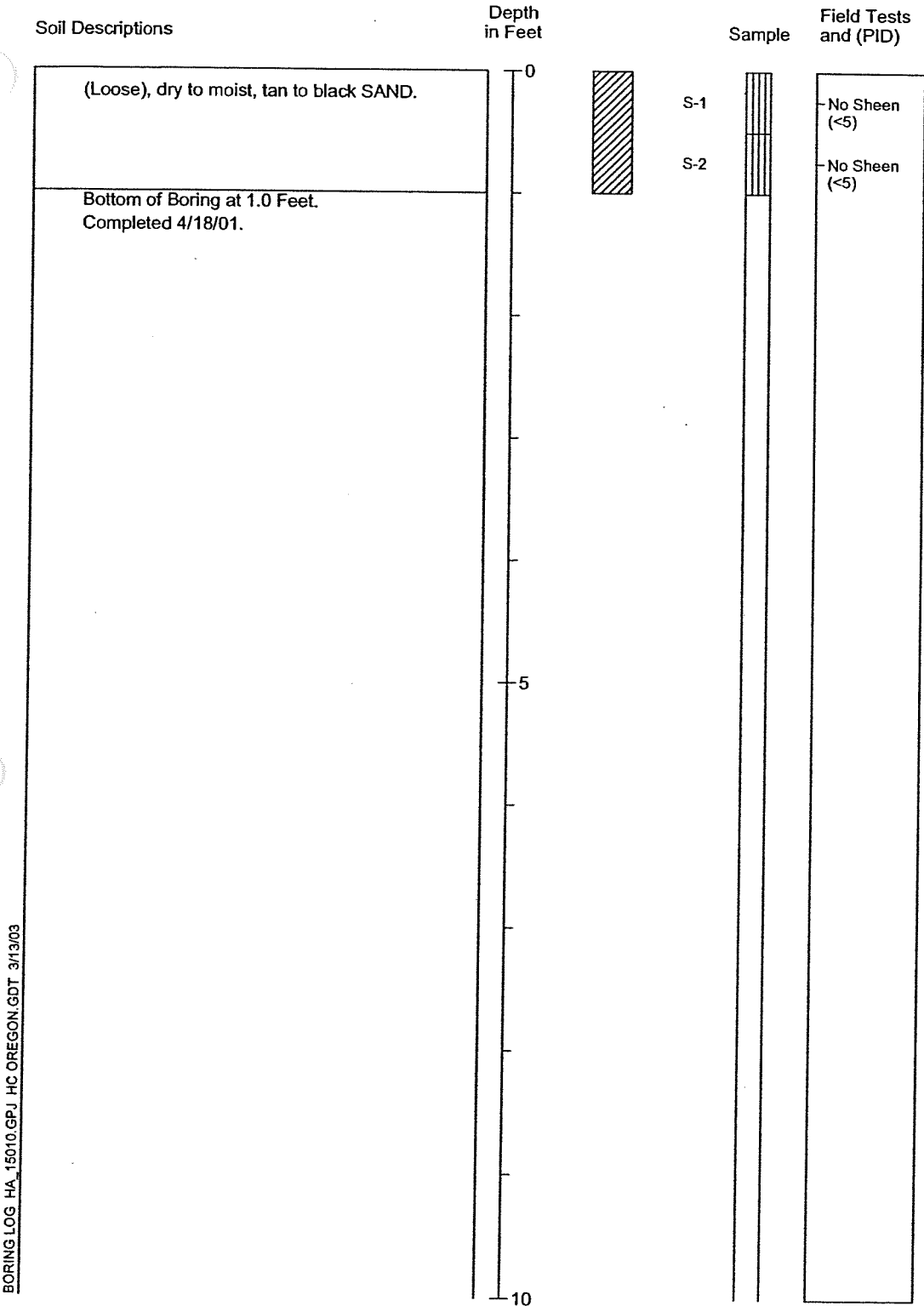
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Push Probe Exploration B-30



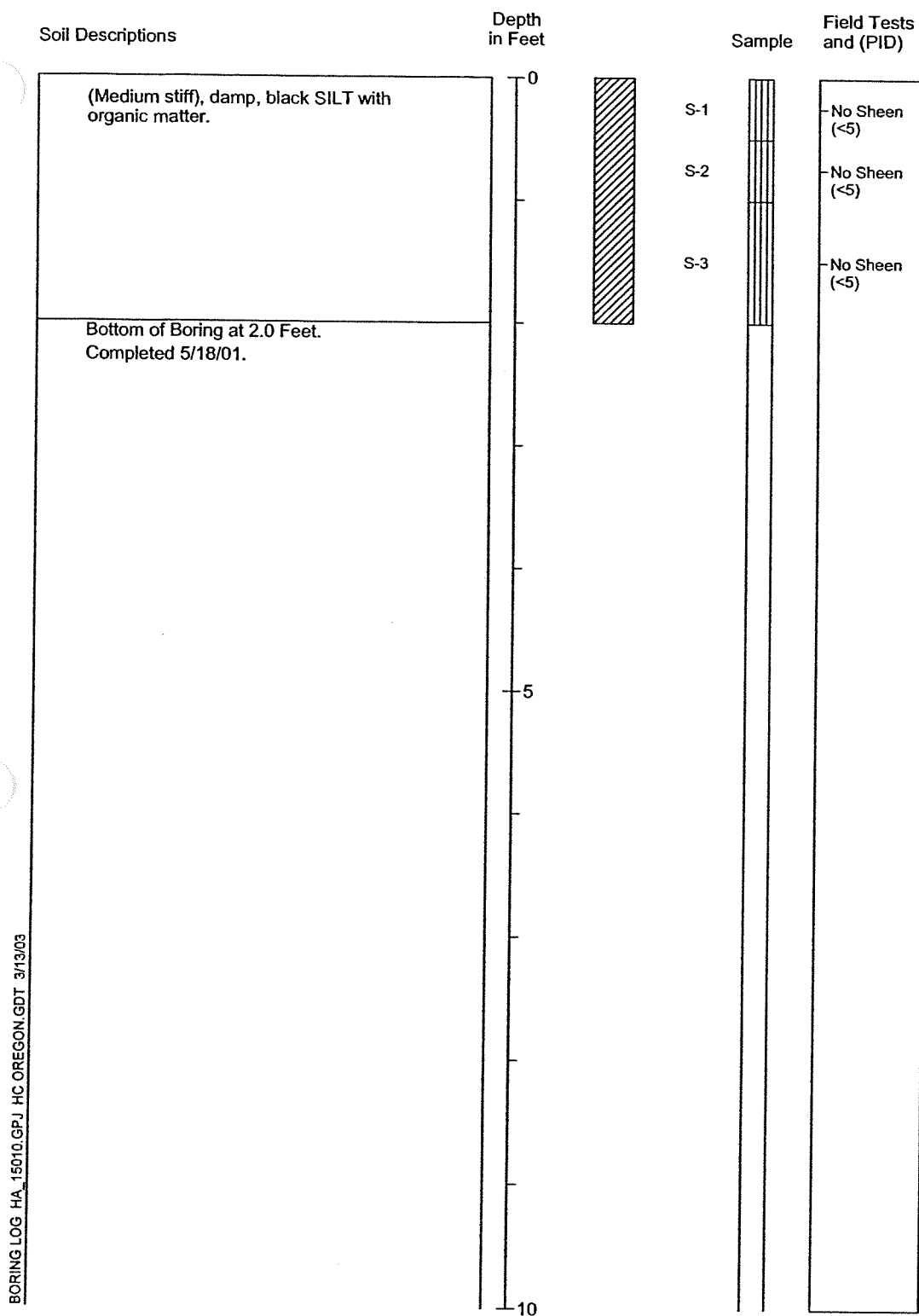
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Water sample was collected from a temporarily screened interval as shown.

Hand-Auger Boring Log HA-5



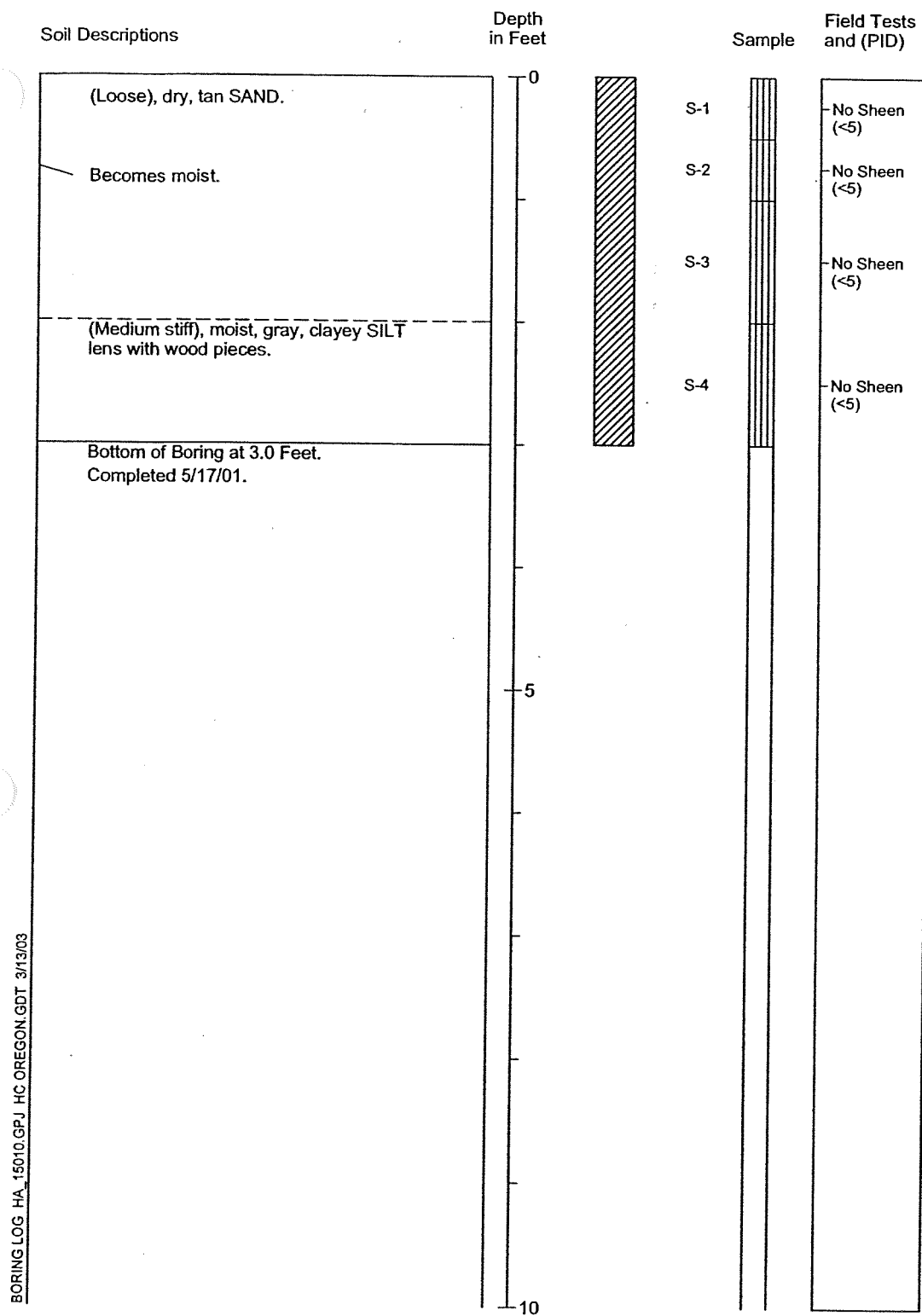
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Hand-Auger Boring Log HA-6



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Hand-Auger Boring Log HA-7



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.



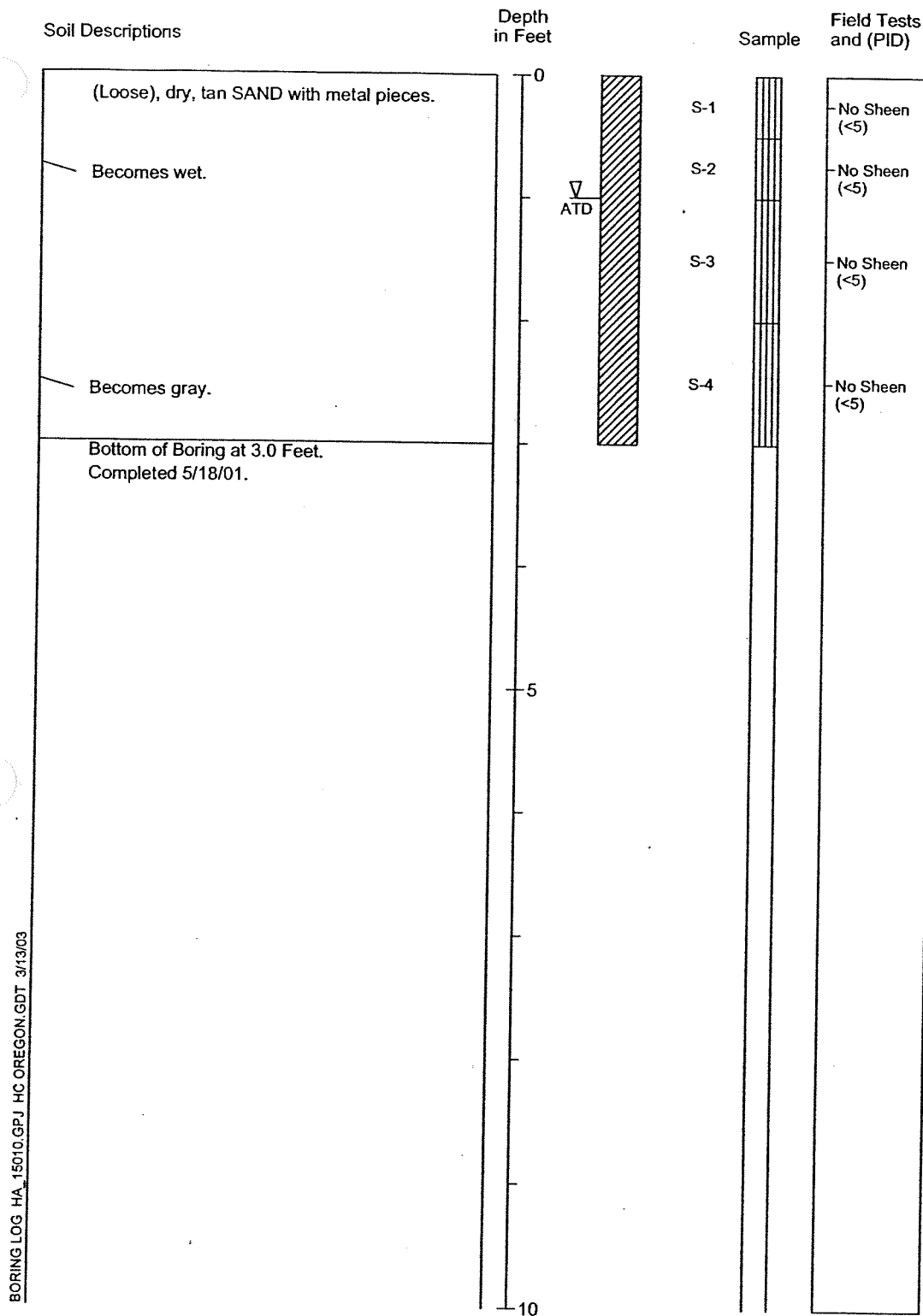
HARTCROWSER

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Figure E-47

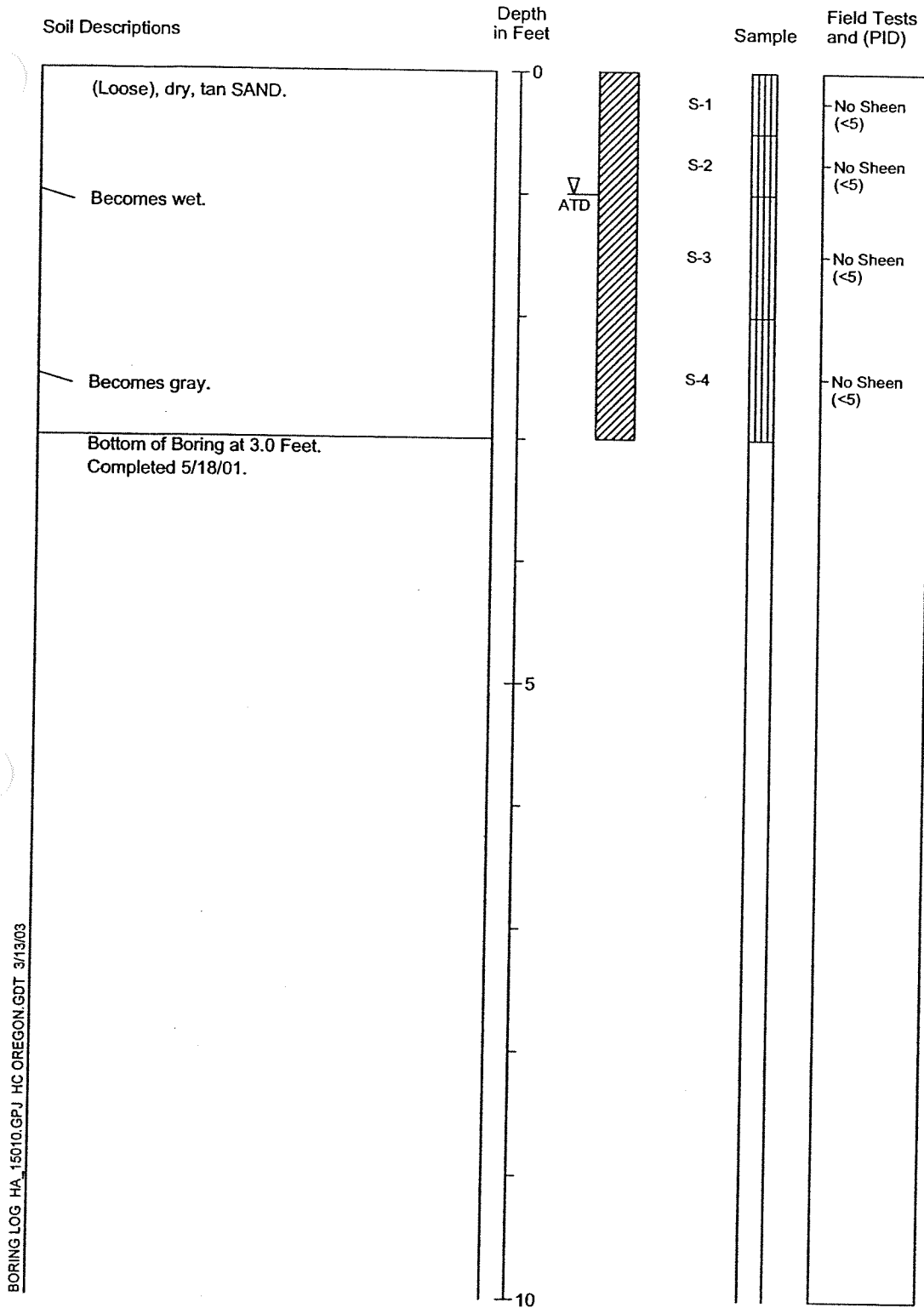
Hand-Auger Boring Log HA-8



BORING LOG HA_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

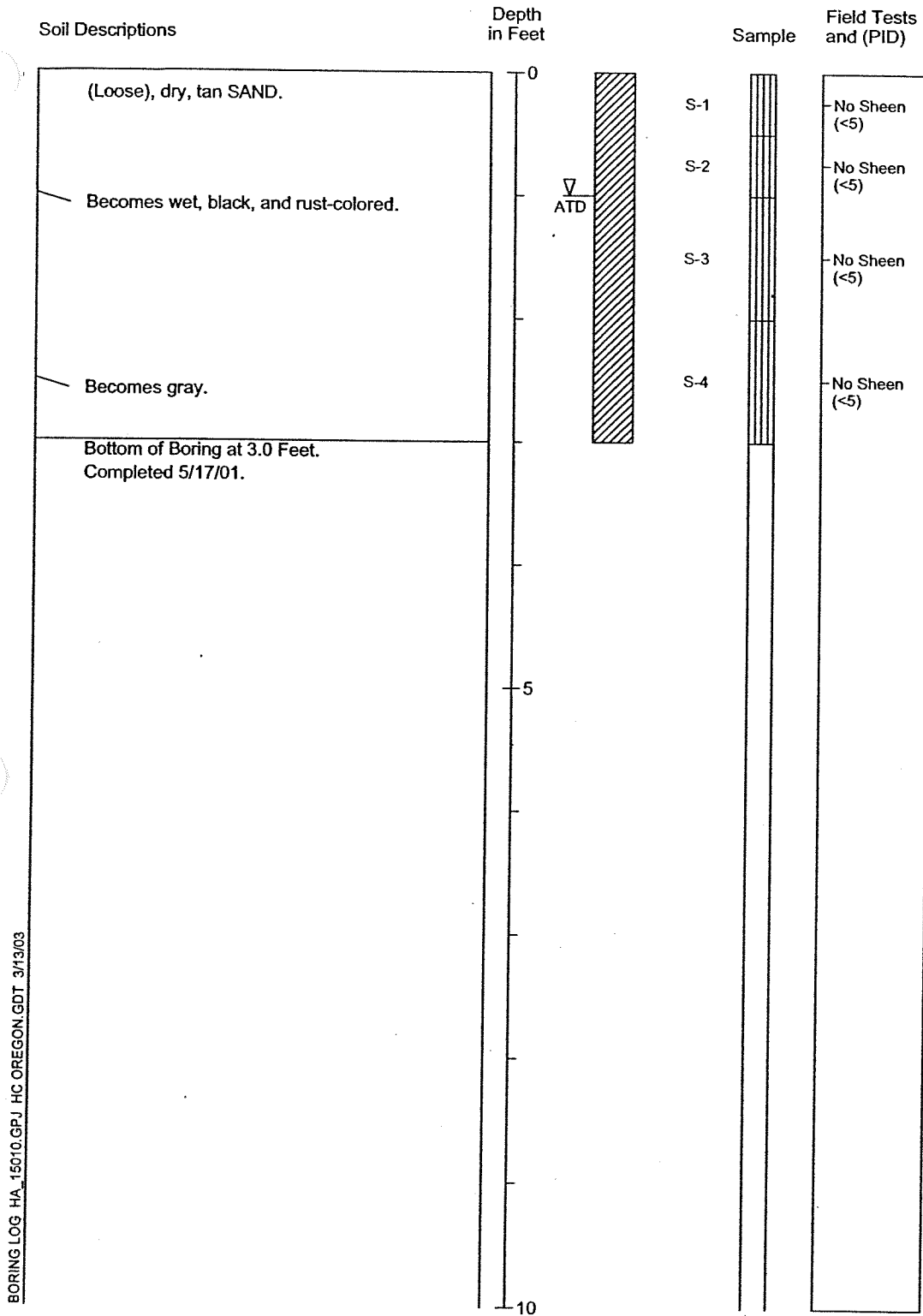
Hand-Auger Boring Log HA-9



BORING LOG HA_15010.GPJ HC OREGON.GDT 3/13/03

1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

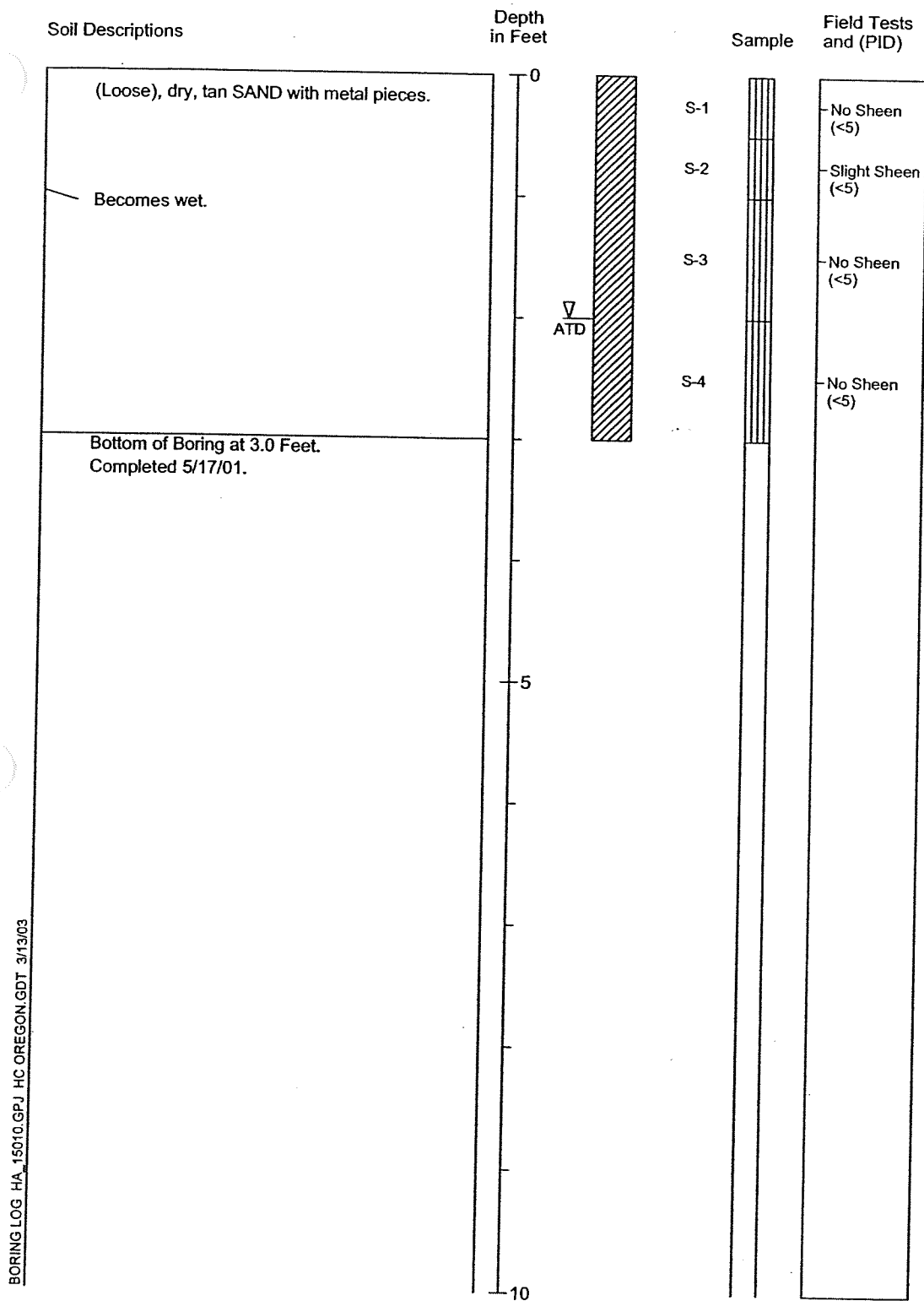
Hand-Auger Boring Log HA-10



BORING LOG HA_15010.GPJ HC OREGON.GDT 3/13/03

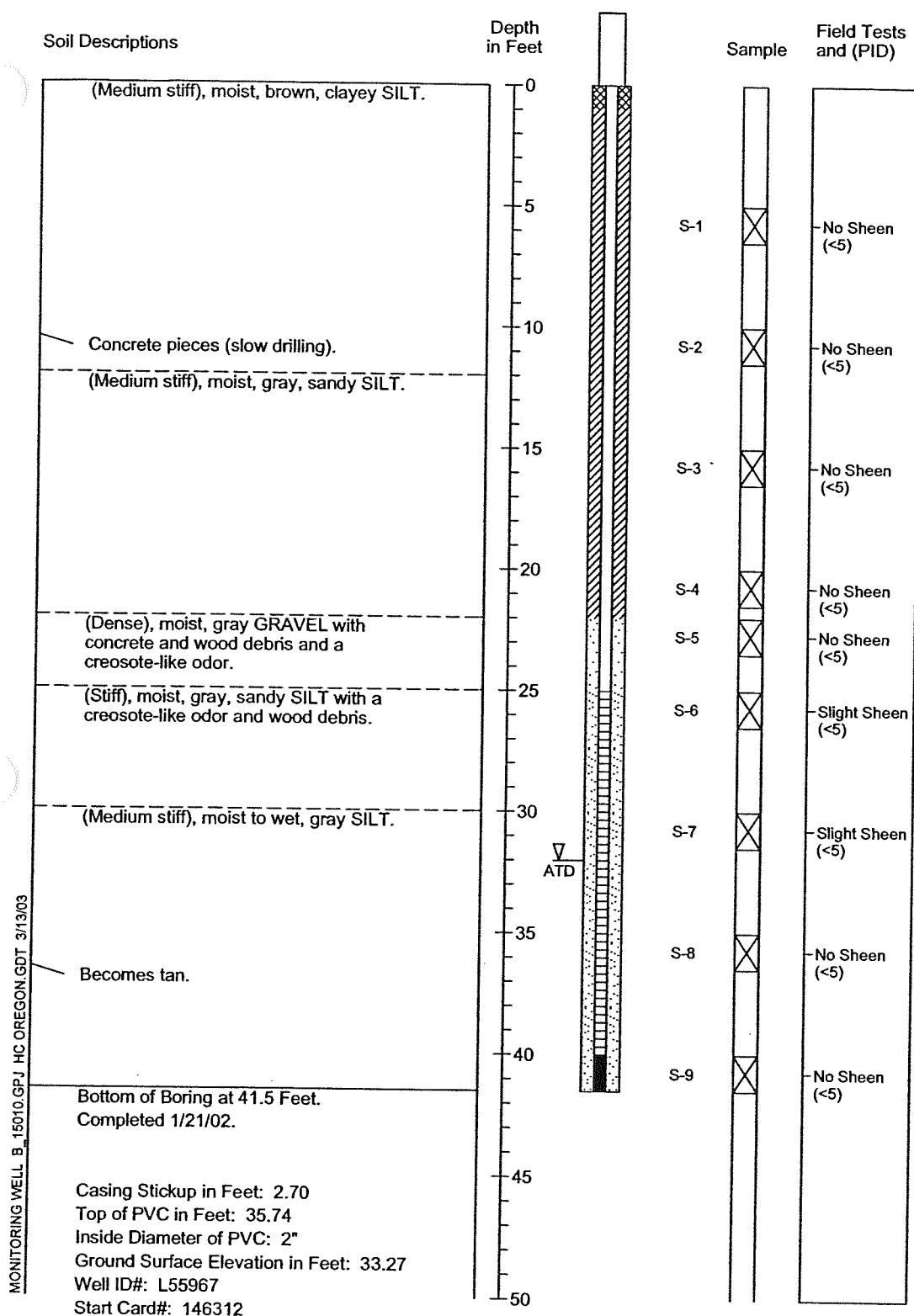
1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Hand-Auger Boring Log HA-11



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.

Boring Log and Construction Data for Monitoring Well MW-1



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

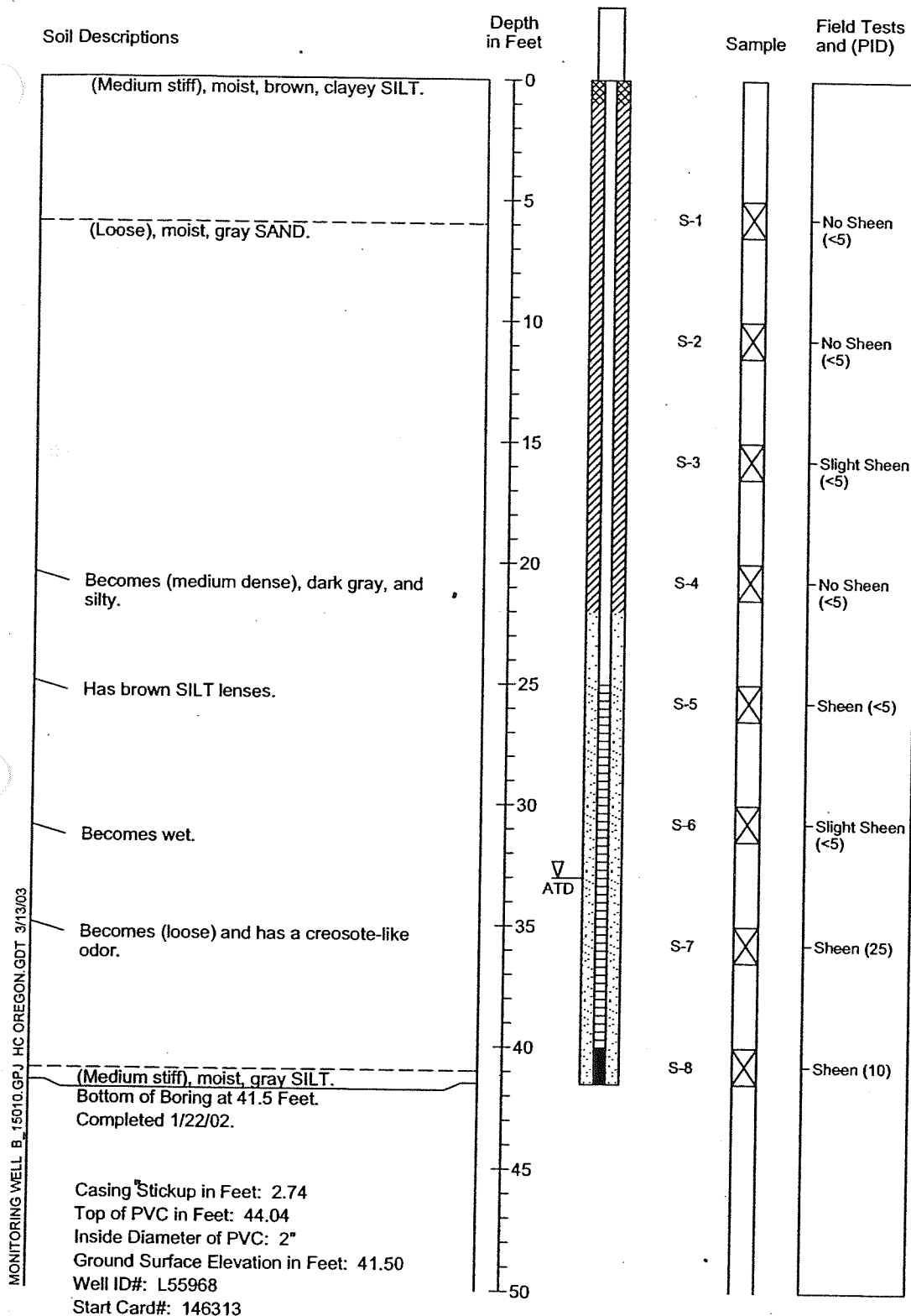
HARTCROWSER

15010-01

1/02

Figure E-52

Boring Log and Construction Data for Monitoring Well MW-2



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

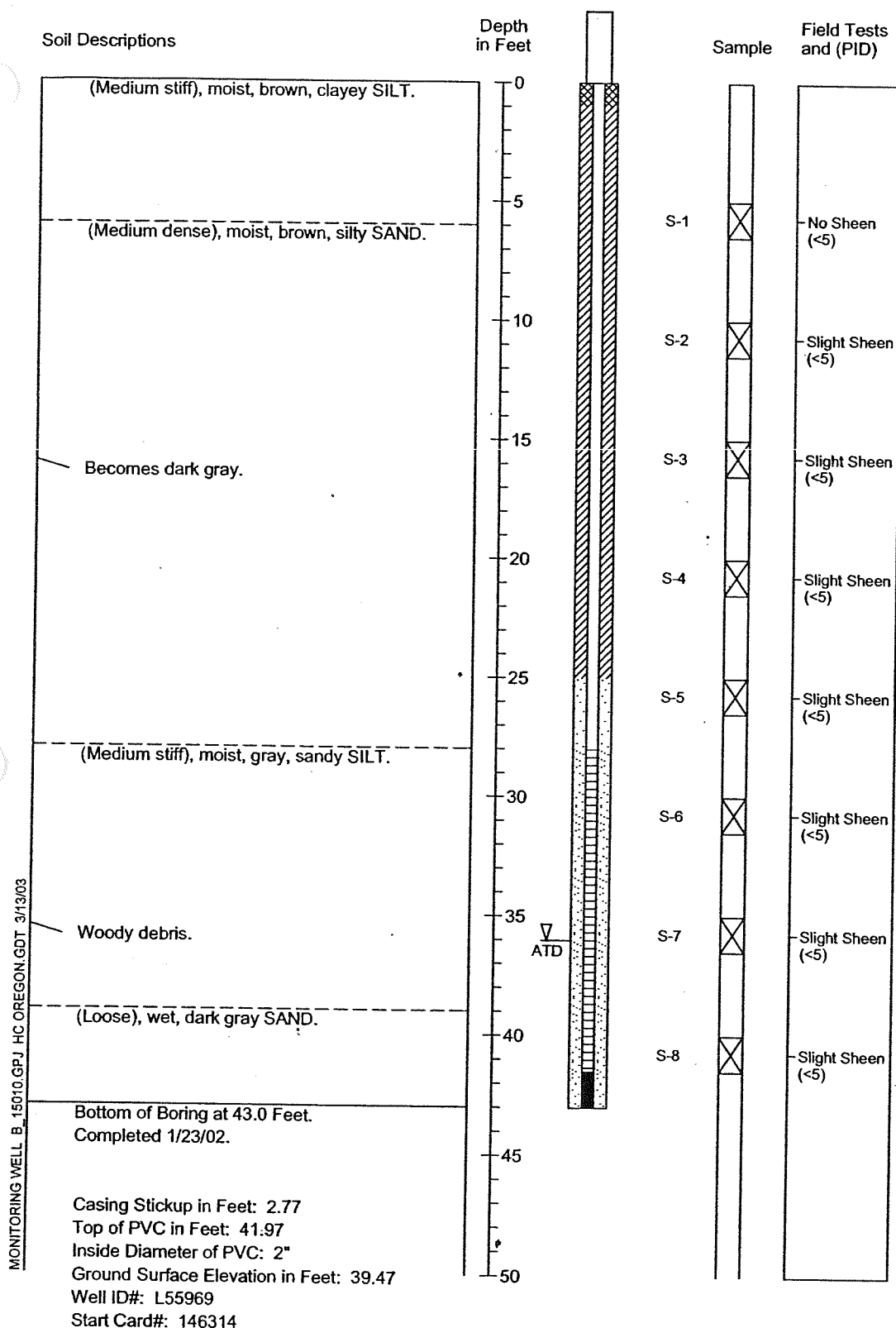
HARTCROWSER

15010-01

1/02

Figure E-53

Boring Log and Construction Data for Monitoring Well MW-3



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

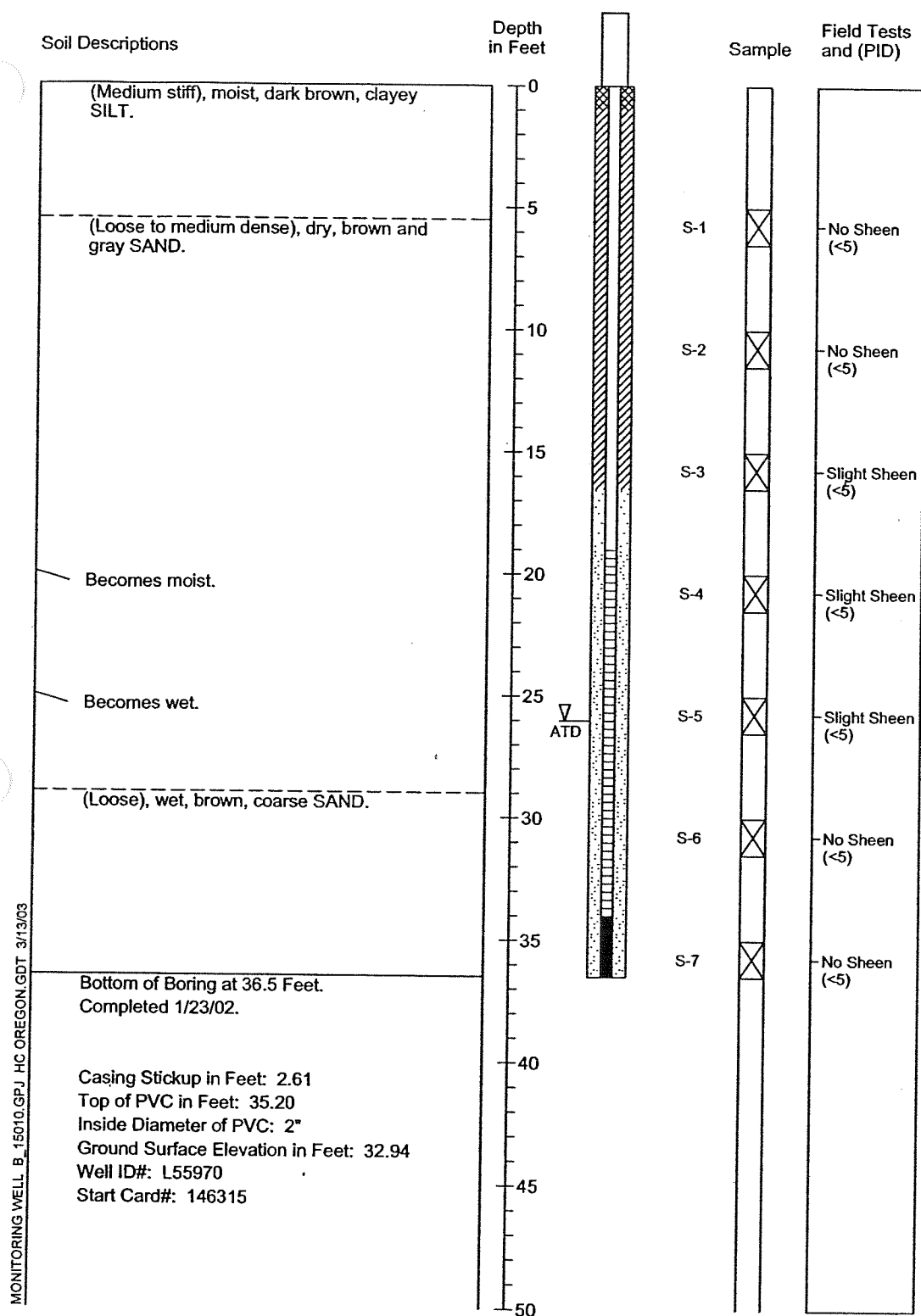
HARTCROWSER

15010-01

1/02

Figure E-54

Boring Log and Construction Data for Monitoring Well MW-4



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

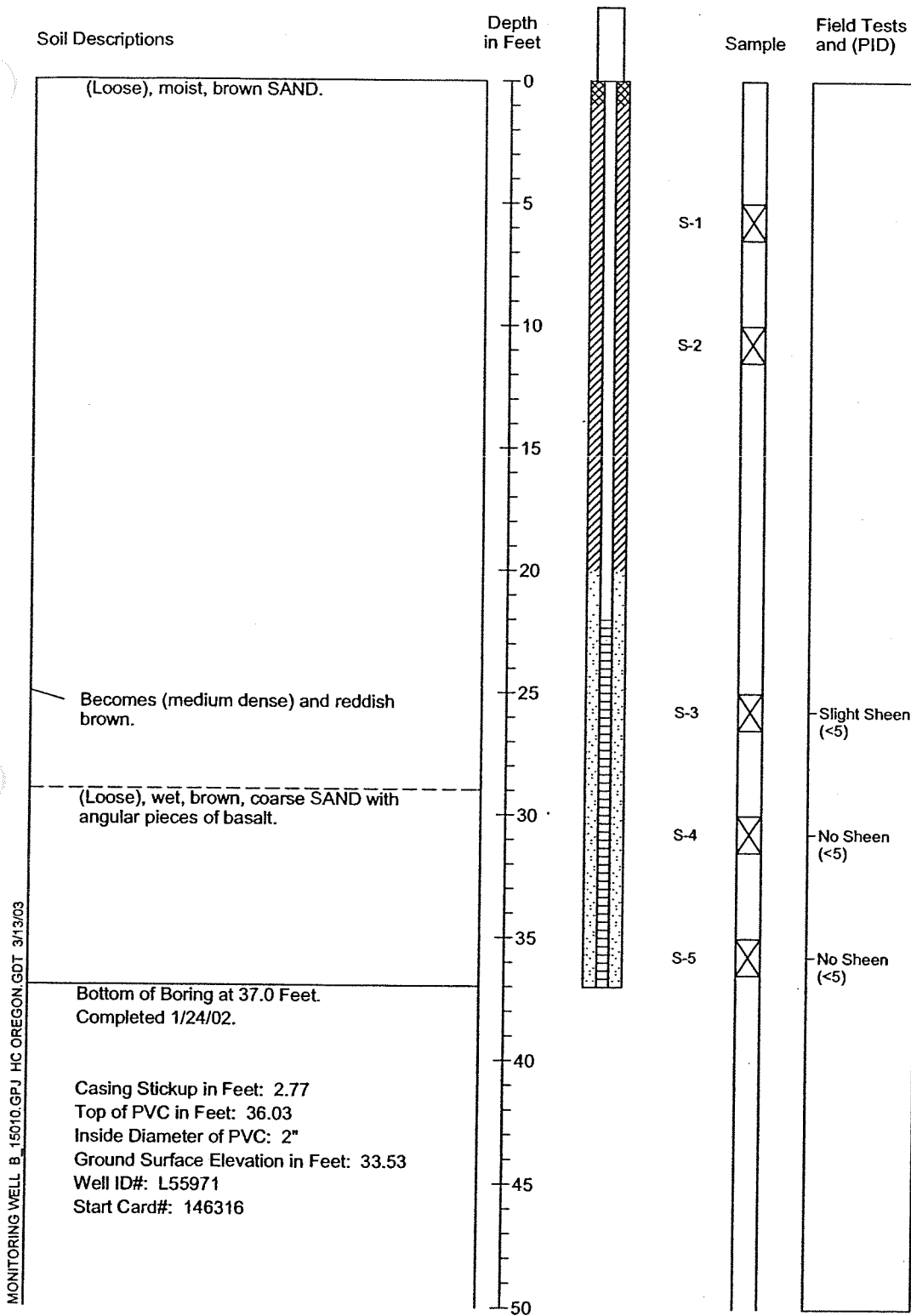
HARTCROWSER

15010-01

1/02

Figure E-55

Boring Log and Construction Data for Monitoring Well MW-5



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

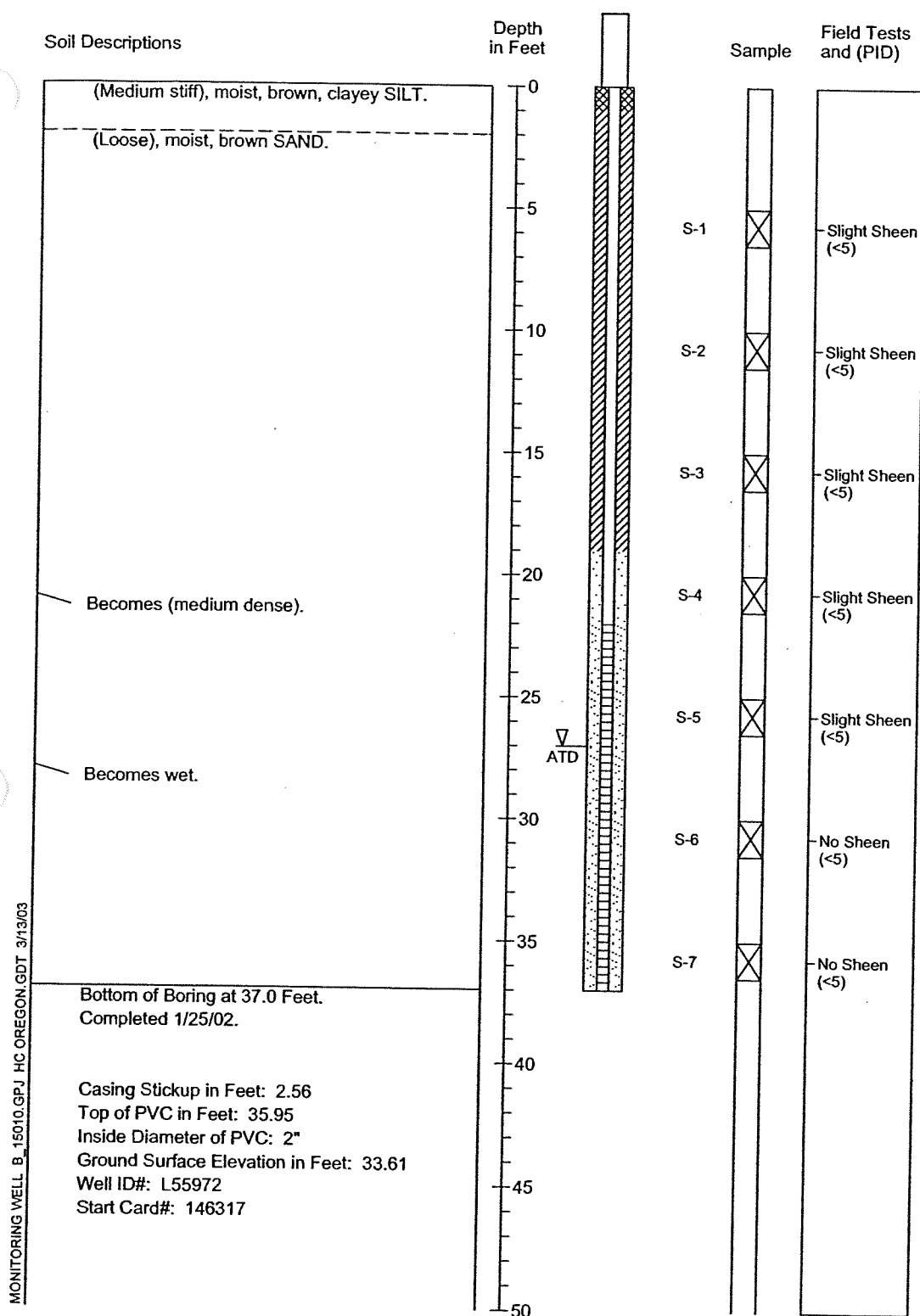
HARTCROWSER

15010-01

1/02

Figure E-56

Boring Log and Construction Data for Monitoring Well MW-6



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

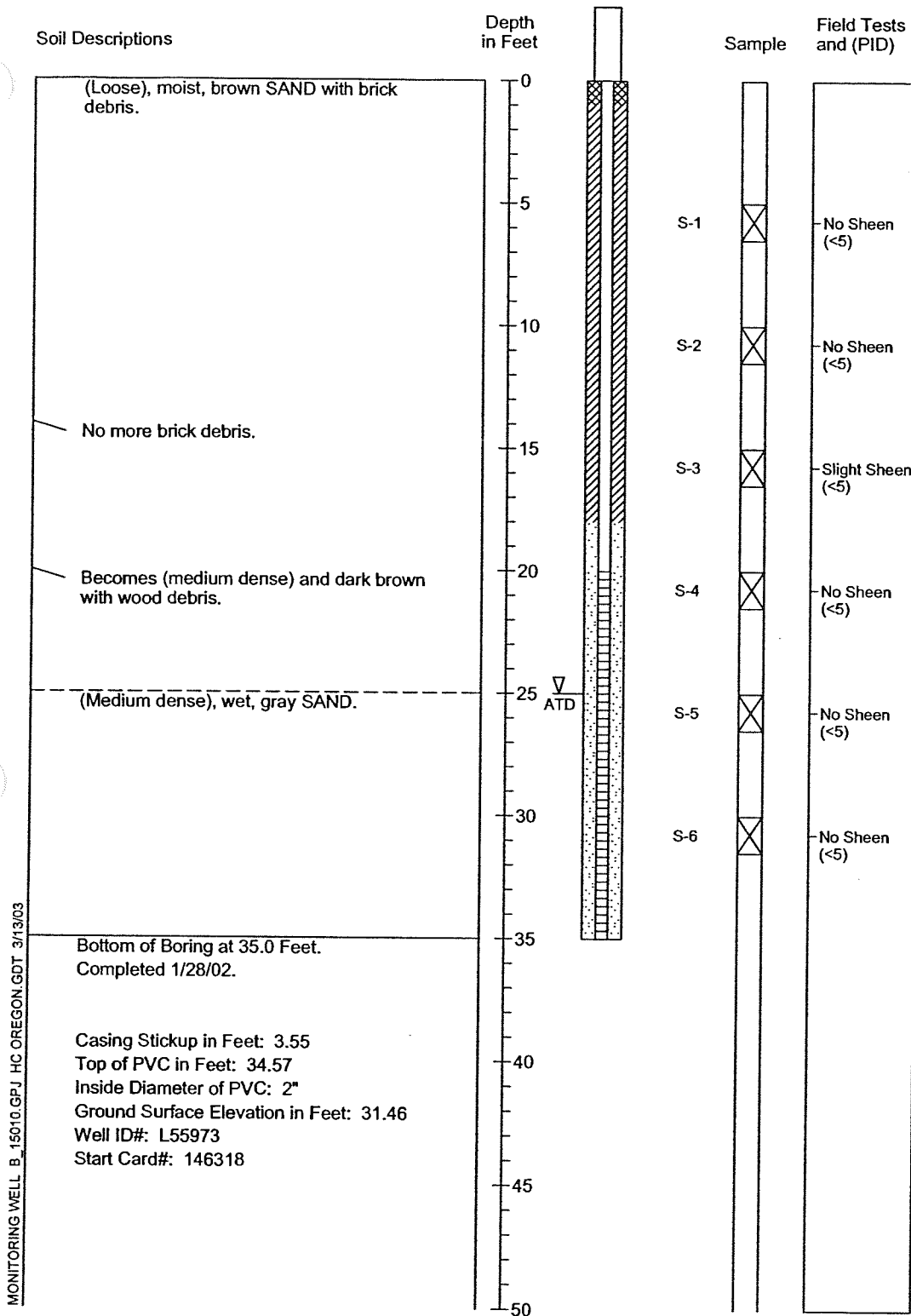
HARTCROWSER

15010-01

1/02

Figure E-57

Boring Log and Construction Data for Monitoring Well MW-7



1. Refer to Figure E-1 for explanation of descriptions and symbols.
2. Descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

HARTCROWSER

15010-01

1/02

Figure E-58

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

MAJOR CONSTITUENT with additional remarks; color, moisture, minor constituents, density/consistency.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL	Standard Penetration Resistance in Blows/Foot	SILT or CLAY	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
<u>Density</u>		<u>Density</u>		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very Stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Sl. Moist	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

Minor Constituents	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Sampling Symbols

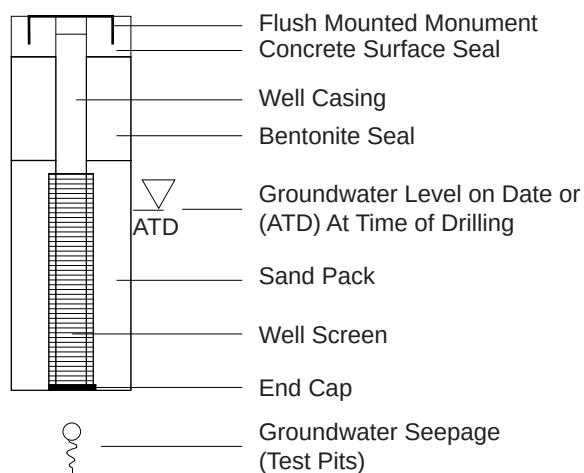
BORING AND PUSH-PROBE SYMBOLS

	Recovery
	No Recovery
	Temporarily Screened Interval
PID	Photoionization Detector Reading
W	Water Sample
	Sample Submitted for Chemical Analysis
NS	No Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
BF	Biogenic Film

TEST PIT SOIL SAMPLES

	Grab (Jar)
	Bag
	Shelby Tube

Groundwater Observations and Monitoring Well Construction



Key to Exploration Logs

Groundwater Data Report
Willamette Cove
Portland, Oregon



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number

1056-12

March 2016

Figure
Key



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Groundwater Data Report
Willamette Cove
Portland, Oregon

Boring Number: **MW-8**

Project Number: **1056-12**

Logged By: **J. Munsey**

Date: **February 9, 2016**

Site Conditions: **Sunny**

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **24'**

Surface Elevation: **--**

Well Details and Notes:

Above Ground Vault

Concrete Surface Seal

Bentonite Grout

2" Diameter Schedule
40 PVC Casing

4" Diameter Borehole

2" Diameter Schedule
40 PVC Screen
(0.010-Inch Slot Size)

#10/20 Filter Pack Sand

4" End Cap

Lithologic Description

Topsoil/concrete.

SAND with silt; yellowish brown, dry, poorly graded, loose,
(90% sand, 10% silt).

SAND; yellowish brown, dry, poorly graded, loose.

SAND; dark gray, wet, poorly graded, loose.

SILT with clay; dark gray, wet, poorly graded, soft,
(90% silt, 10% clay).

Bottom of Boring at 38.0' BGS.



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Groundwater Data Report
Willamette Cove
Portland, Oregon

Boring Number: **MW-9**

Project Number: **1056-12**

Logged By: **J. Munsey**

Date: **February 9, 2016**

Site Conditions: **Sunny**

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **33'**

Surface Elevation: **--**

Well Details and Notes:

Above Ground Vault

Concrete Surface Seal

Bentonite Grout

2" Diameter Schedule
40 PVC Casing

4" Diameter Borehole

2" Diameter Schedule
40 PVC Screen
(0.010-Inch Slot Size)

#10/20 Filter Pack Sand

4" End Cap

Lithologic Description

Topsoil/debris (i.e., brick and glass).

SAND; dark yellowish brown, dry, poorly graded, loose,
(90% sand, 10% silt).

SAND with trace gravel; yellowish brown, dry, poorly graded.

SAND; dark yellowish brown, dry, poorly graded, medium dense,
(95% sand, 5% gravel).

Becomes moist.

SAND with silt and gravel; dark yellowish brown, wet, loose,
(80% sand, 10% gravel, 10% silt).

No recovery.

SILT with clay; dark gray, wet, poorly graded, soft,
(70% silt, 30% clay).

Bottom of Boring at 35.0' BGS.

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

MAJOR CONSTITUENT with additional remarks; color, moisture, minor constituents, density/consistency.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL	Standard Penetration Resistance in Blows/Foot	SILT or CLAY	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
<u>Density</u>		<u>Density</u>		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very Stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Sl. Moist	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

Minor Constituents	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Sampling Symbols

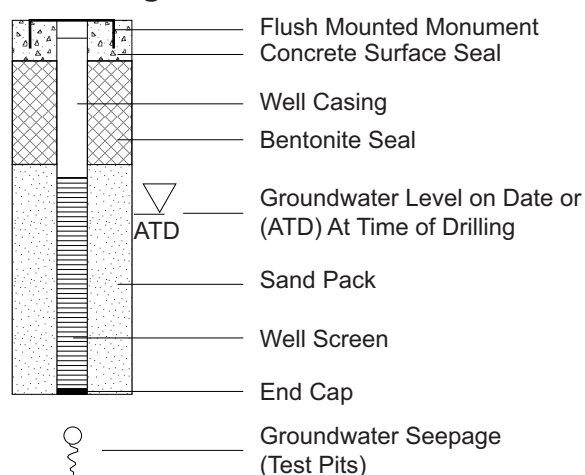
BORING AND PUSH-PROBE SYMBOLS

	Recovery
	No Recovery
	Temporarily Screened Interval
PID	Photoionization Detector Reading
W	Water Sample
	Sample Submitted for Chemical Analysis
NS	No Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
BF	Biogenic Film

TEST PIT SOIL SAMPLES

	Grab (Jar)
	Bag
	Shelby Tube

Groundwater Observations and Monitoring Well Construction



Key to Exploration Logs

Willamette Cove
Portland, Oregon



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number

1056-12

March 2017

Figure
Key



Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Willamette Cove
Portland, Oregon

Boring Number: **DP-1**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 14, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **25'**

Surface Elevation: --

Construction Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description		
5		DP-1 (0-5)	<5	NS	SILT; brown, moist, medium stiff.		
					Becomes sandy.	5	
10		DP-1 (5-10)	<5	NS	Trace gravel.	10	
15		DP-1 (10-15)	<5	NS		15	
20		DP-1 (15-20)	<5	NS	Clayey SILT; brown with red and yellow mottling, moist medium stiff.	20	
25		DP-1 (20-25)	<5	NS	Becomes wet.	25	▽
					No Recovery.		
30					Clayey SILT; brown, moist, stiff.	30	
35		DP-1 (30-35)	<5	NS	Becomes wet.		
					Becomes soft.	35	
		DP-1 (35-40)	<5	NS	Becomes sandy SILT.		



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Willamette Cove
Portland, Oregon

Boring Number: **DP-1**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 14, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **25'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Sandy SILT; brown, wet, medium stiff.

Becomes stiff.

Trace black SAND.

SAND; black, wet, medium dense.

Becomes coarse SAND; brown.

Becomes black SAND.

Becomes coarse SAND; dark brown.

SAND; black, moist, trace gravel, dense.

Bottom of Boring at 60.0' BGS.



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Willamette Cove
Portland, Oregon

Boring Number: **DP-2**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 14, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **43.6'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
5		DP-2 (0-5)	<5	NS	SILT; brown, slightly moist, stiff.
10		DP-2 (5-10)	<5	NS	Silty SAND; brown, slightly moist, medium dense.
15		DP-2 (10-15)	<5	NS	
20		DP-2 (15-20)	<5	NS	Sandy SILT; brown, moist, medium stiff.
25		DP-2 (20-25)	<5	NS	
30		DP-2 (20-25)	<5	NS	Silty SAND; dark gray, moist, medium dense.
35		DP-2 (30-35)	<5	NS	Silty SAND; gray-brown, wet, soft.
		DP-2 (30-35)	<5	NS	Becomes moist and medium stiff.
		DP-2 (35-40)	<5	NS	Becomes loose.
		DP-2 (35-40)	<5	NS	Becomes moist and medium dense.



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Willamette Cove
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Boring Number: **DP-2**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 19, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **43.6'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
45		DP-2 (40-45)	<5	NS	
			<5	NS	Sandy SILT; brown, moist, medium stiff.
			<5	NS	
			<5	NS	SAND; dark gray, moist, loose.
			<5	NS	Silty CLAY; brown, moist, medium stiff.
			<5	NS	
			<5	NS	Becomes light brown.
50		DP-2 (45-50)	<5	NS	
			<5	NS	Sandy SILT; brown, wet, soft.
			<5	NS	Becomes moist and medium stiff.
			<5	NS	
			<5	NS	Wood debris.
55		DP-2 (50-55)	<5	NS	
			<5	NS	Sandy SILT; brown, wet, soft.
			<5	NS	Becomes moist and medium stiff.
			<5	NS	
60		DP-2 (55-60)	<5	NS	
			<5	NS	Bottom of Boring at 60.0' BGS.
65					
70					
75					



Apex Companies, LLC
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Willamette Cove
Portland, Oregon

Boring Number: **DP-3**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 21, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **~28'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
					Sandy SILT; brown, slightly moist, medium stiff.
		DP-3 (0-5)	<5	NS	
			<5	NS	
5					Trace roots.
		DP-3 (5-10)	<5	NS	
			<5	NS	
10					
		DP-3 (10-15)	<5	NS	
			<5	NS	Becomes clayey and gray.
15					Trace gravel.
		DP-3 (15-20)	<5	NS	
			<5	NS	
20					Becomes moist.
		DP-3 (20-25)	<5	NS	
			<5	NS	
25					
		DP-3 (20-25)	<5	NS	
			<5	NS	
		DP-3 (30-35)	<5	NS	SAND; brown, moist, medium dense.
30					Fine SAND; gray, moist to wet, medium dense.
			<5	NS	
			<5	NS	Becomes brown/tan and coarse.
35					
		DP-3 (35-40)	<5	NS	Medium SAND; dark gray, moist, medium dense.
			<5	NS	
			<5	NS	Becomes coarse.



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Willamette Cove
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Boring Number: **DP-3**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 21, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **~28'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
45		DP-3 (40-45)	<5	NS	
			<5	NS	
			<5	NS	
			5	NS	Trace gravel.
		DP-3 (45-50)	6	NS	
			6	NS	
50			12	NS	Becomes fine with trace gravel.
		DP-3 (50-55)	18	NS	
			15	NS	
55			<5	NS	Becomes coarse and loose.
		DP-3 (55-60)	<5	NS	
			<5	NS	
60			<5	NS	Becomes fine and brown.
					Bottom of Boring at 60.0' BGS.
65					
70					
75					



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Willamette Cove
Portland, Oregon

Boring Number: **DP-4**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 21, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): --

Surface Elevation: --

Construction Details and Notes:

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

Lithologic Description

SILT; brown, slightly moist, trace roots, medium stiff.

Silty SAND; brown, slightly moist, medium dense.

Becomes dark gray.

Sandy SILT; dark brown, moist, medium stiff.
Becomes wet.

No sand.

Becomes soft.

Becomes moist and medium stiff.

SAND; dark gray, moist, medium dense.





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Boring Number: **DP-4**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **December 21, 2016**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): --

Surface Elevation: --

Construction Details and Notes:

Depth, feet

Core Interval/Recovery

Laboratory Sample ID

PID

Sheen

Lithologic Description

SILT; brown, slightly moist, medium stiff.

Boring Refusal at 42.0' BGS.

45

50

55

60

65

70

75

45

50

55

60

65

70

75



Apex Companies, LLC
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Willamette Cove
Portland, Oregon

Boring Number: **DP-5**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **January 1, 2017**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

Depth to Water (ATD): **~30'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
					SILT; brown, moist, medium stiff.
		DP-5 (0-5)	<5	NS	
			<5	NS	Becomes sandy,
5					
		DP-5 (5-10)	<5	NS	Silty SAND; brown, moist, medium dense.
			<5	NS	
10					
		DP-5 (10-15)			
		DP-5 (15-20)	<5	NS	Sandy SILT; gray, moist, medium stiff.
			<5	NS	
			<5	NS	
20					
		DP-5 (20-25)	<5	NS	Becomes dark brown.
			<5	NS	
			<5	NS	Becomes brown and soft.
25					
		DP-5 (20-25)	<5	NS	Becomes dark brown/gray.
			<5	NS	
			<5	NS	
30					
		DP-5 (30-35)	<5	NS	SAND; gray, wet, loose.
			<5	NS	
			<5	NS	3-Inch lens of wood debris.
35					
		DP-5 (35-40)	<5	NS	
			<5	NS	
			<5	NS	Sandy SILT; brown, moist, medium stiff.



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Willamette Cove
Portland, Oregon

Boring Number: **DP-5**

Project Number: **1056-12**

Logged By: **K. Kline**

Date: **January 1, 2017**

Site Conditions: --

Drilling Contractor: **Pacific Soil & Water**

Drilling Equipment: **Power Probe 9500 VTR**

Sampler Type: **Macro Core**

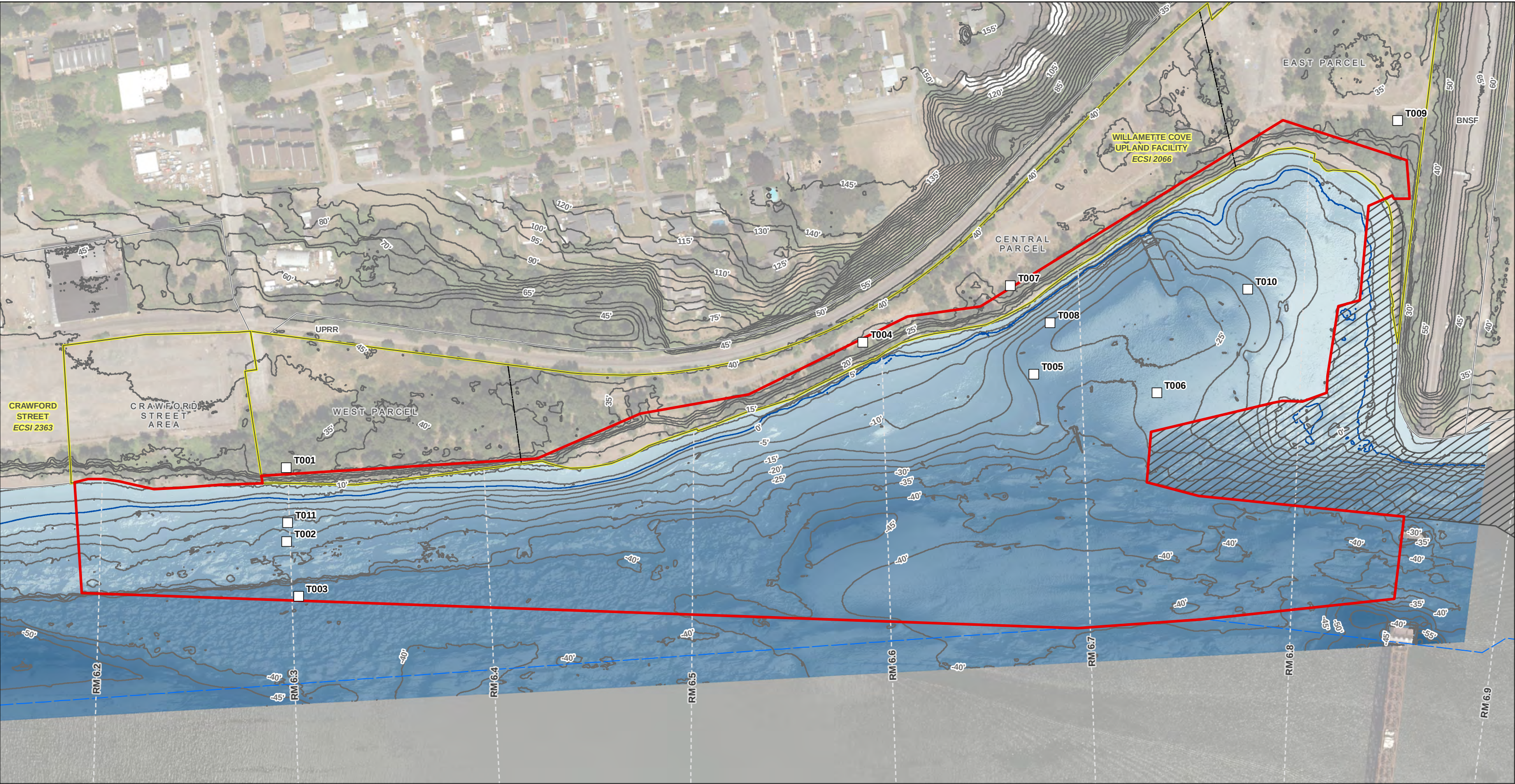
Depth to Water (ATD): **~30'**

Surface Elevation: --

Construction Details and Notes:

Lithologic Description

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	
45			<5	LS	SAND; gray, wet, loose.
			<5	NS	SILT lens. SAND becomes medium dense with trace gravel.
			<5	NS	
			5	NS	
			5	NS	SILT; dark brown, moist, medium stiff. Wood debris lens (80%).
50			15	LS	
			5	NS	
			5	NS	SAND; gray, wet, trace gravel, loose.
			5	NS	
			5	NS	
55			<5	NS	
			<5	NS	Becomes brown.
			<5	NS	
60					Bottom of Boring at 60.0' BGS.
65					
70					
75					



LEGEND

- Geotechnical Boring

All Other Features

Project Area Boundary

Upland Parcel

Upland Subparcel

Adjacent Parcel

Capped Area

Navigation Channel
- 3.2' NAVD88 (-2' CRD)

5' Elevation Contours (NAVD88)

River Mile (RM)

Bathymetry

20'

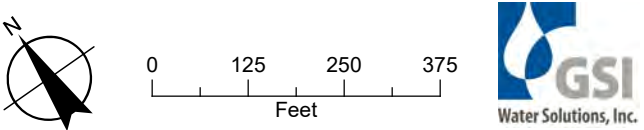
-66'

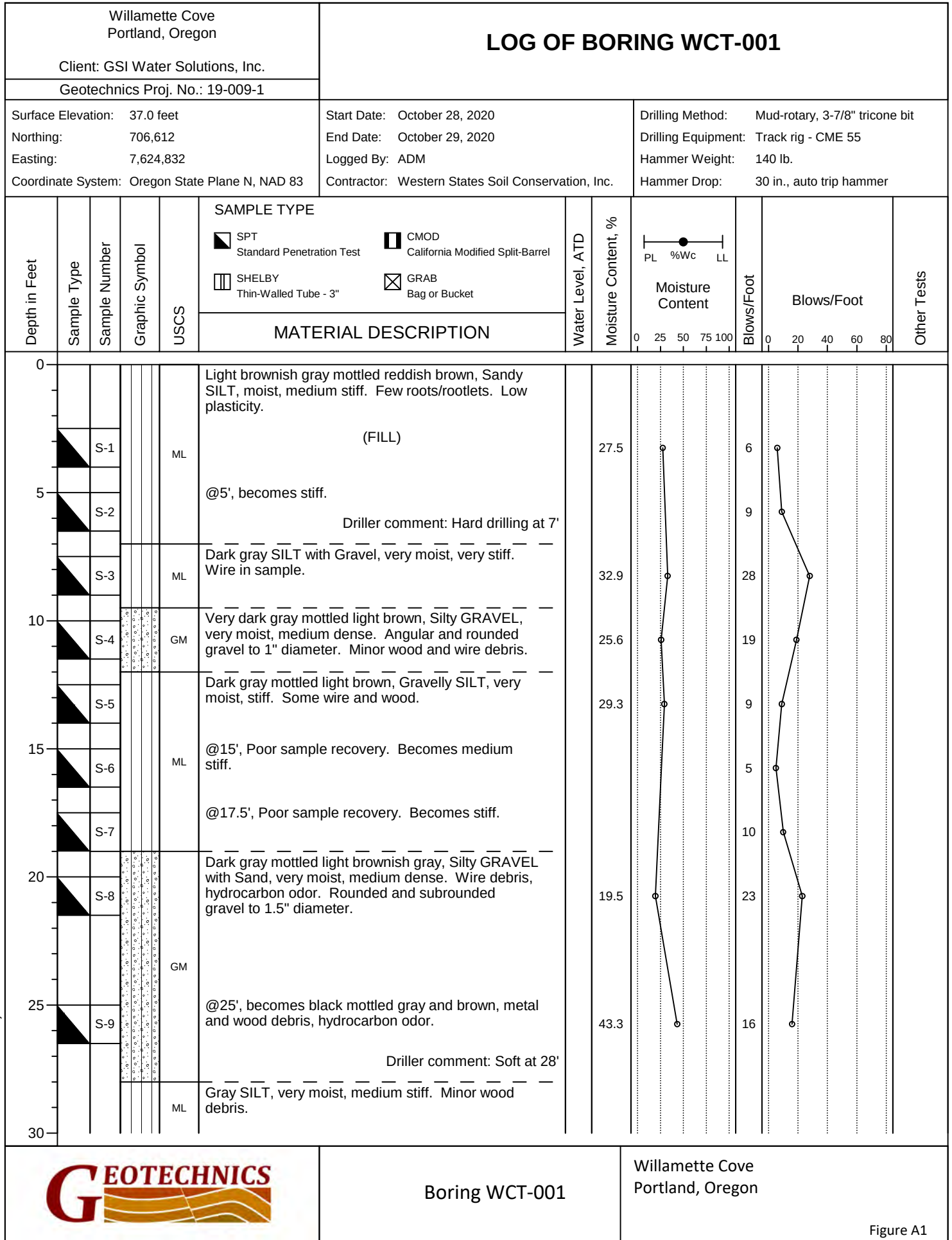
NOTES

1. 3.2' NAVD88 (-2' CRD) and 5' Elevation Contour (NAVD88) are generated from 2021 site bathymetry, Solmar Hydro.
BNSF: Burlington Northern Santa Fe Railway
CRD: Columbia River Datum
ECSI: Environmental Cleanup Site Information
NAVD88: North American Vertical Datum of 1988
UPRR: Union Pacific Railroad
USACE: U.S. Army Corps of Engineers

Date: May 3, 2021
Data Sources: City of Portland 2019, METRO 2020,
USACE 2014, Bathymetry from Solmar Hydro, Aerial City of Portland 2020

FIGURE 2-1
Geotechnical Sampling Locations
Pre-Design Investigation Evaluation Report





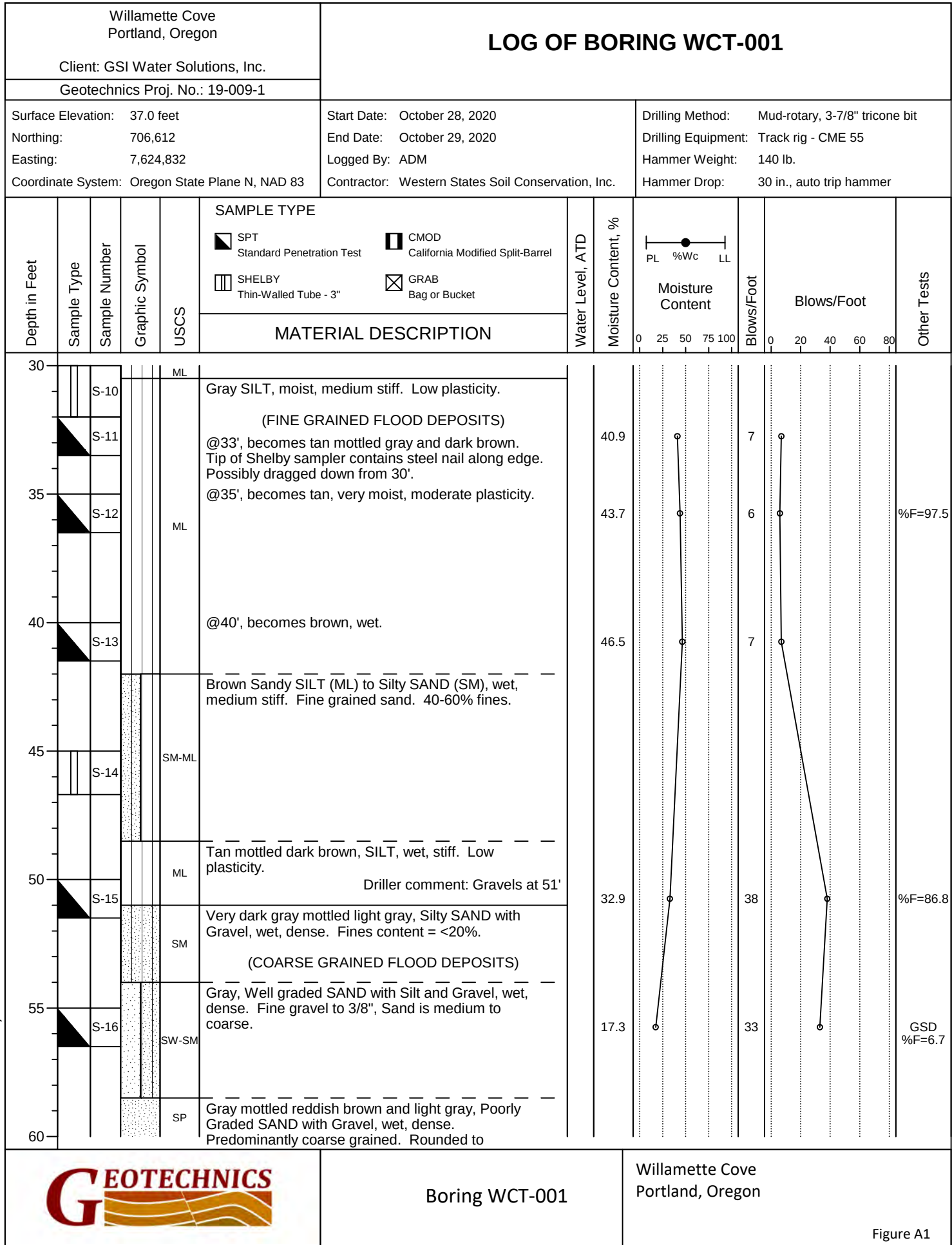
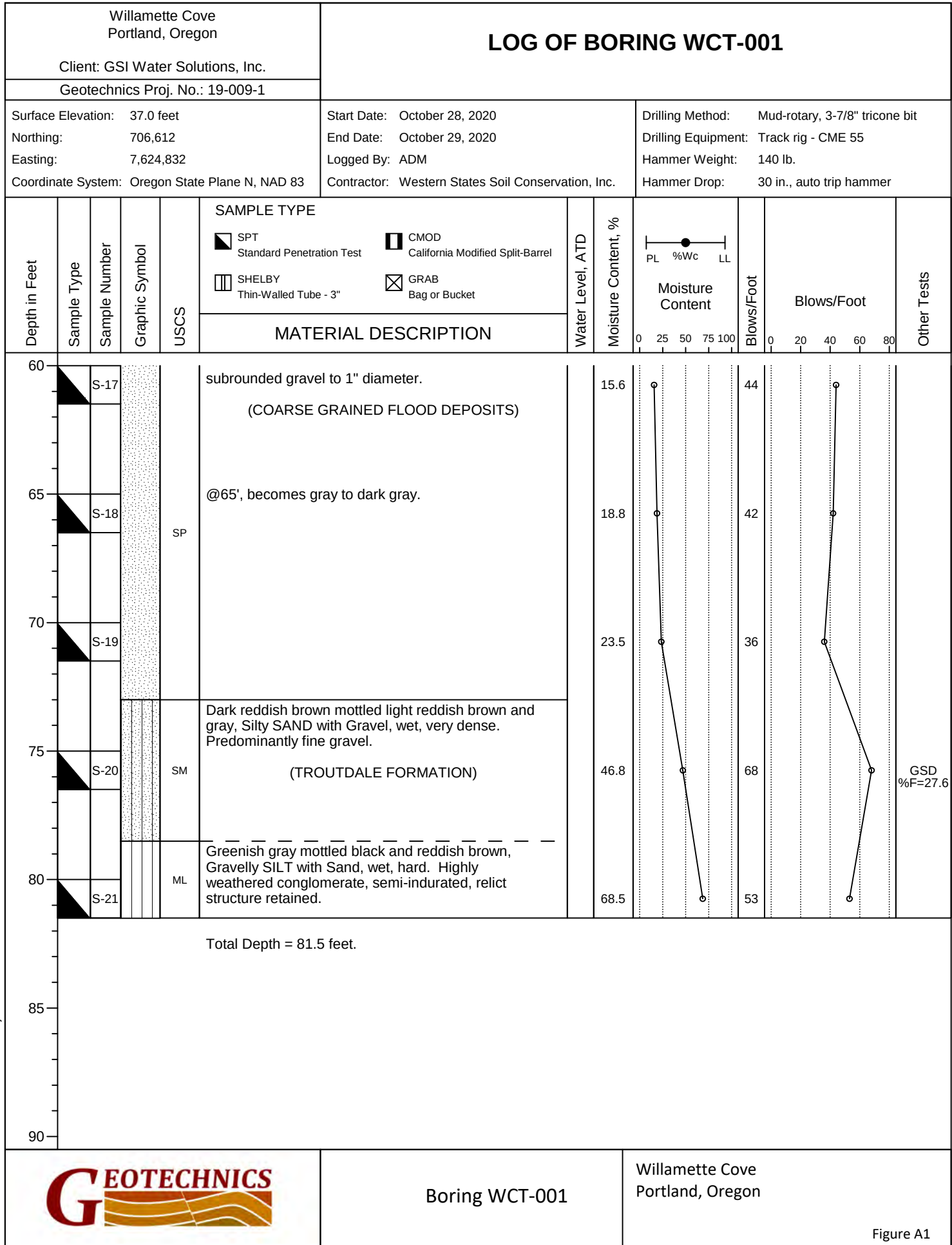


Figure A1



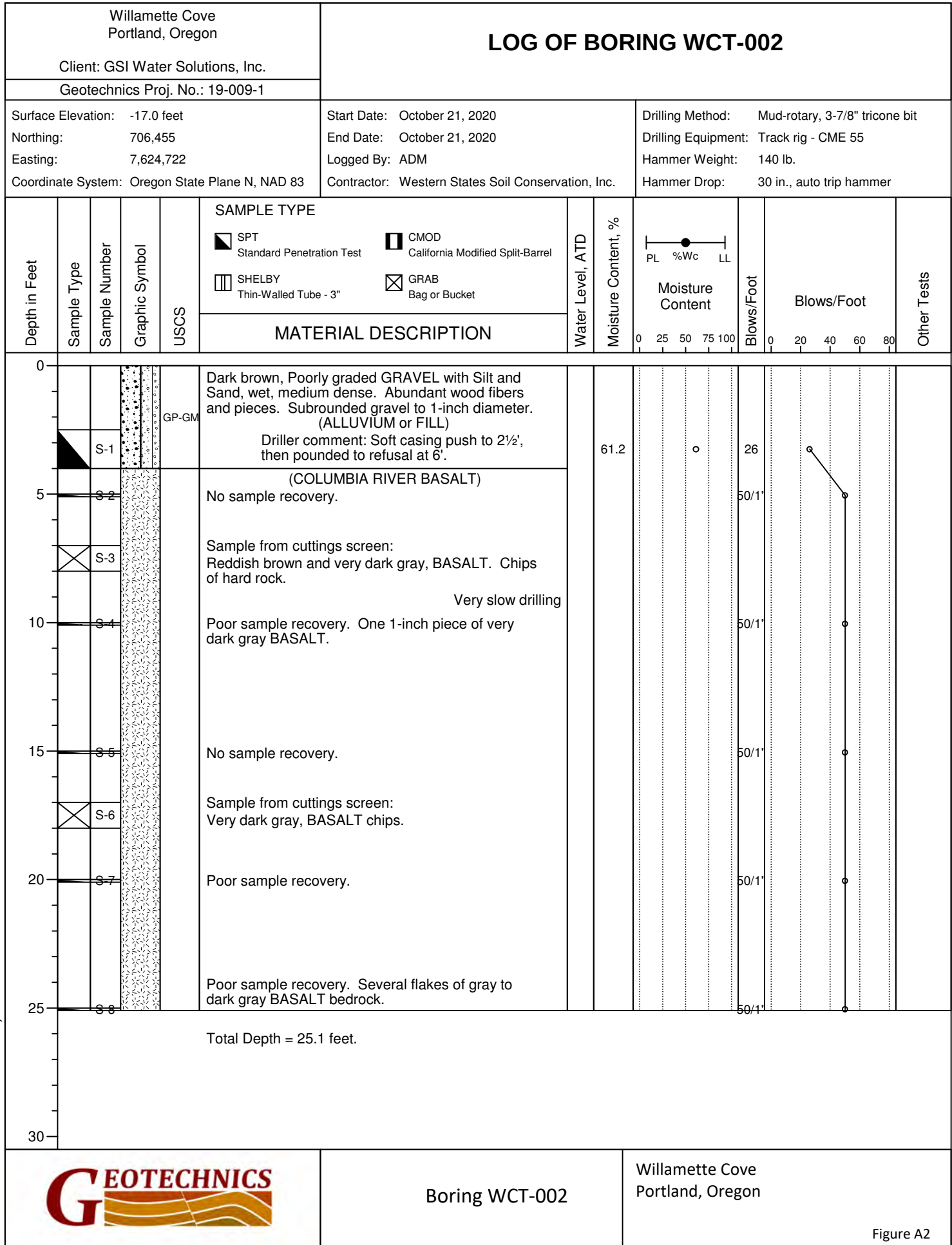
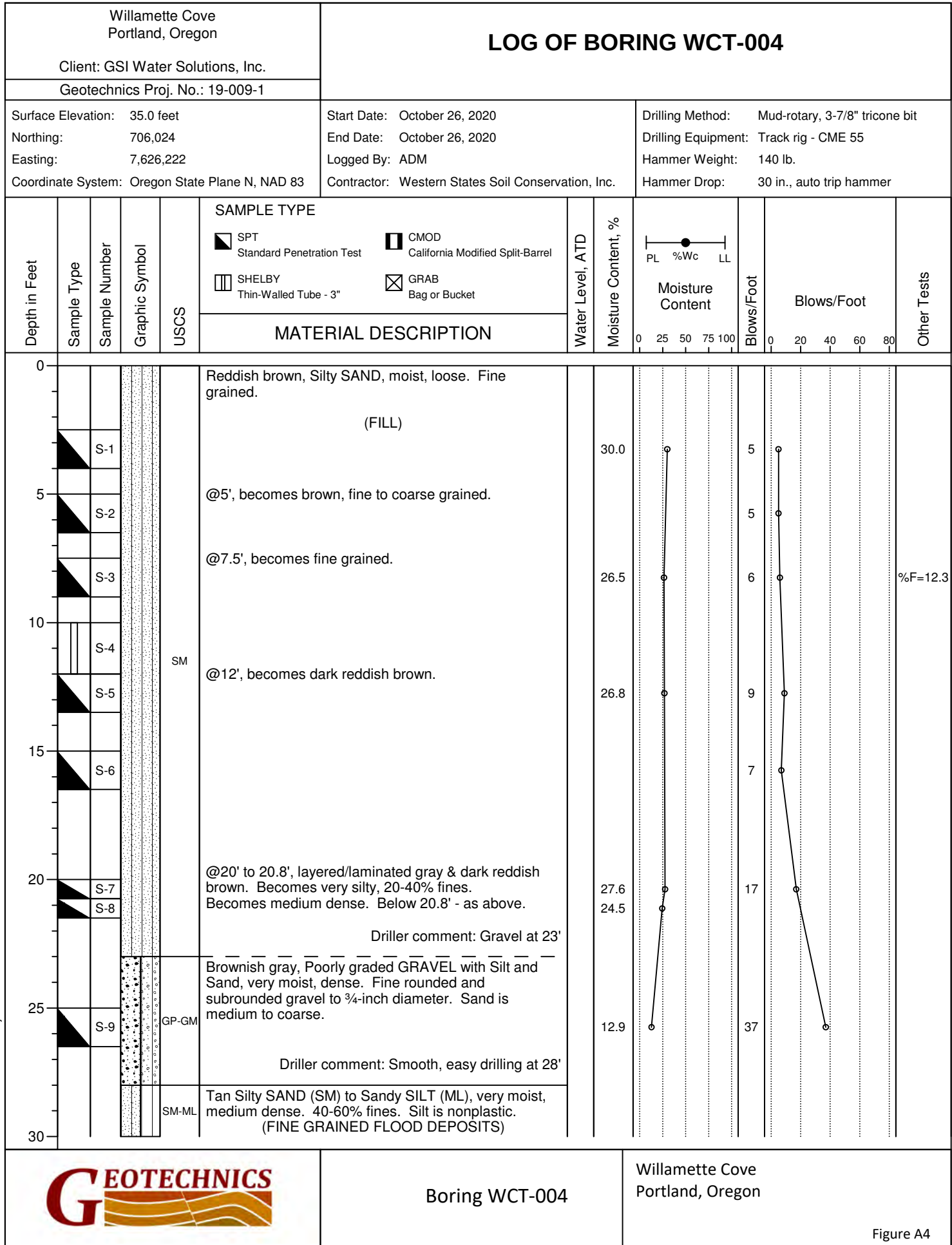
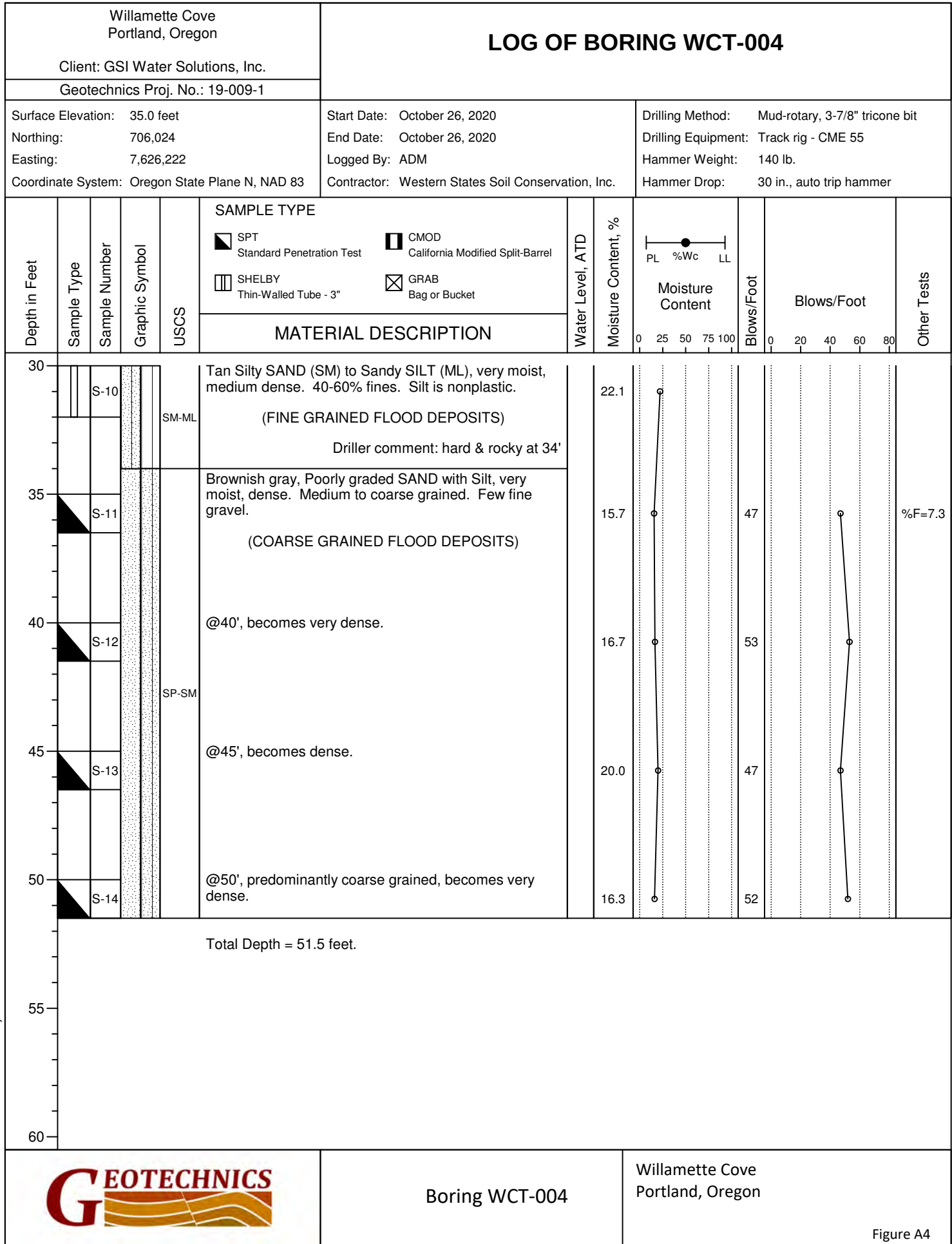
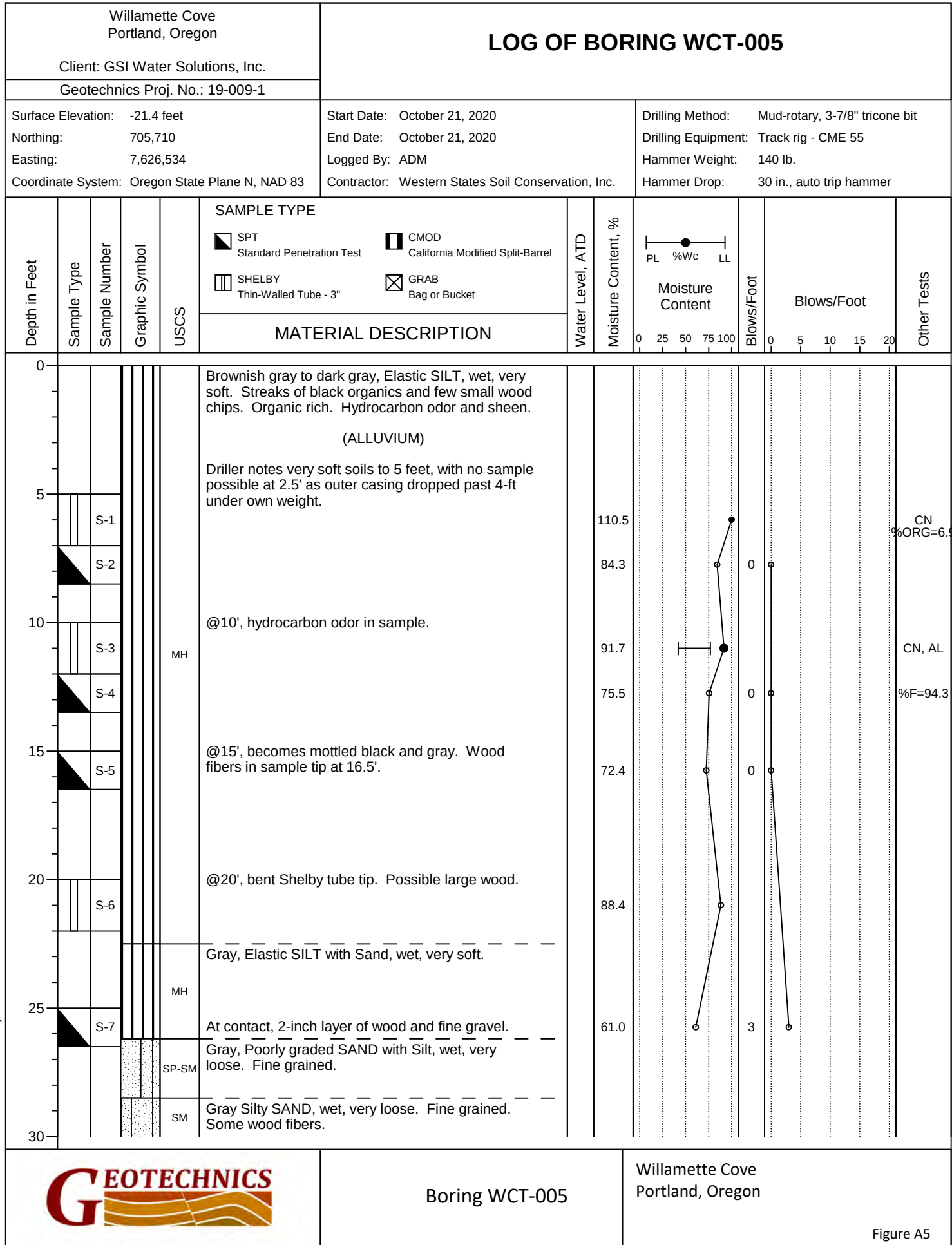


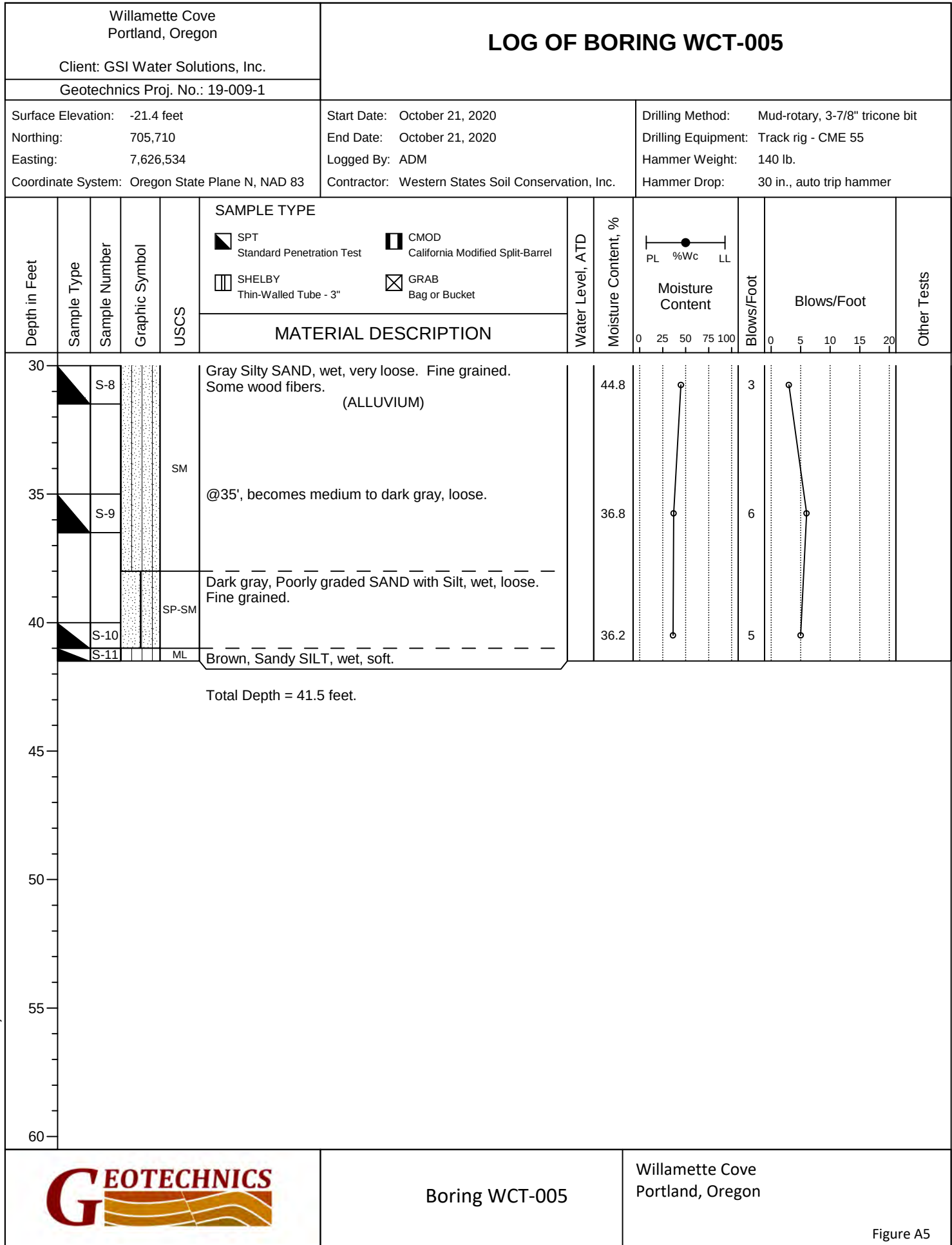
Figure A2

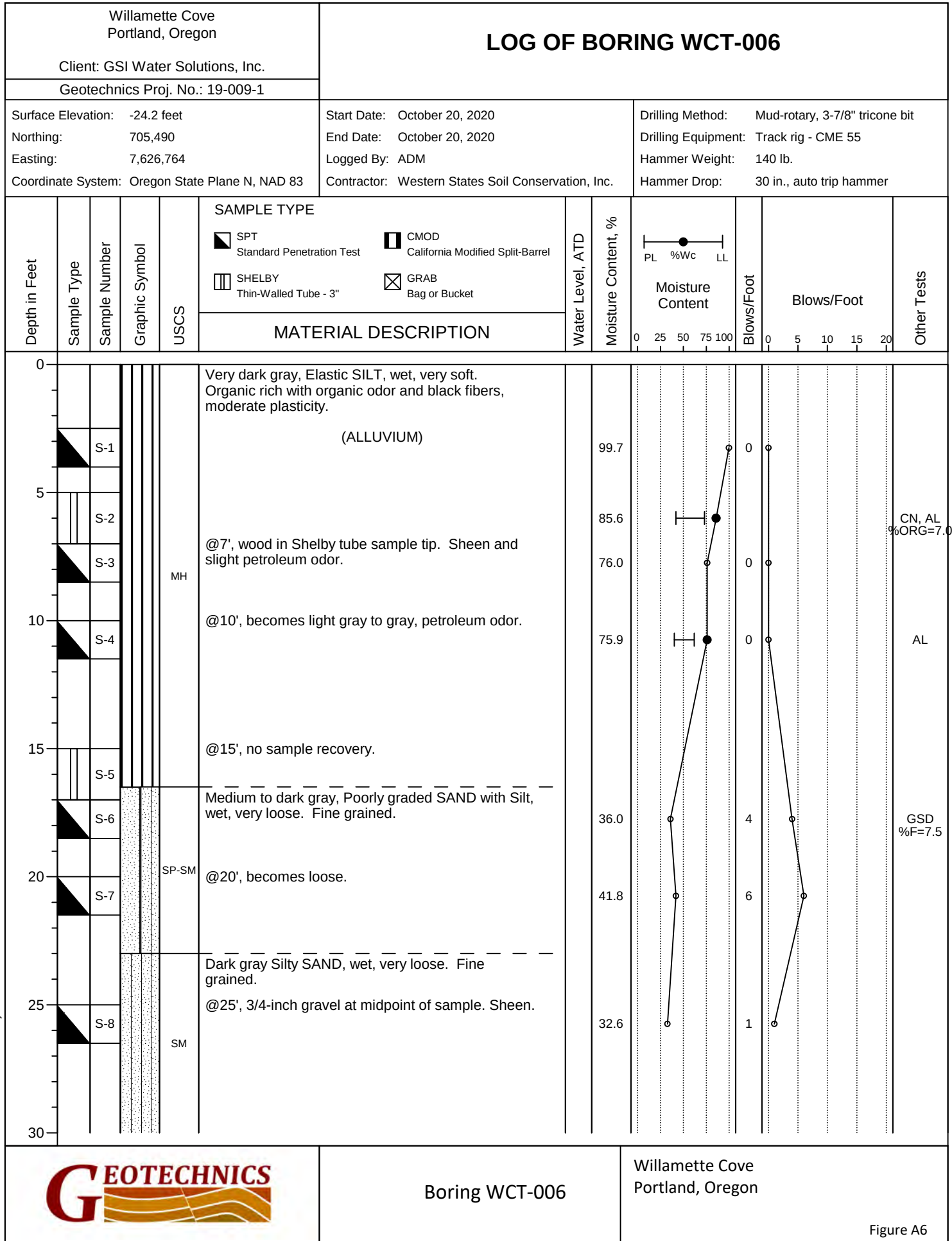
Willamette Cove Portland, Oregon Client: GSI Water Solutions, Inc. Geotechnics Proj. No.: 19-009-1					LOG OF BORING WCT-003									
Surface Elevation: -39.3 feet Northing: 706,323 Easting: 7,624,667 Coordinate System: Oregon State Plane N, NAD 83					Start Date: October 22, 2020 End Date: October 22, 2020 Logged By: ADM Contractor: Western States Soil Conservation, Inc.					Drilling Method: Mud-rotary, 3-7/8" tricone bit Drilling Equipment: Track rig - CME 55 Hammer Weight: 140 lb. Hammer Drop: 30 in., auto trip hammer				
Depth in Feet	Sample Type	Sample Number	Graphic Symbol	USCS	SAMPLE TYPE		Water Level, ATD	Moisture Content, %	PL %Wc LL Moisture Content	Blows/Foot	Other Tests			
					☐ SPT Standard Penetration Test ☐ SHELBY Thin-Walled Tube - 3"	☐ CMOD California Modified Split-Barrel ☒ GRAB Bag or Bucket						MATERIAL DESCRIPTION		
0		S-1		SP	Brownish gray, Poorly graded SAND with Gravel, wet, medium dense. Predominantly coarse sand with some fine gravel to 3/8-inch diameter. Some wood in sample and abundant wood in cuttings. (ALLUVIUM)			24.2		60+				
Angular pieces/flakes of gray to dark gray BASALT bedrock. (COLUMBIA RIVER BASALT)														
Total Depth = 1.9 feet. Casing pounded to 12 inches, refusal.														
5														
10														
15														
20														
					Boring WCT-003					Willamette Cove Portland, Oregon				

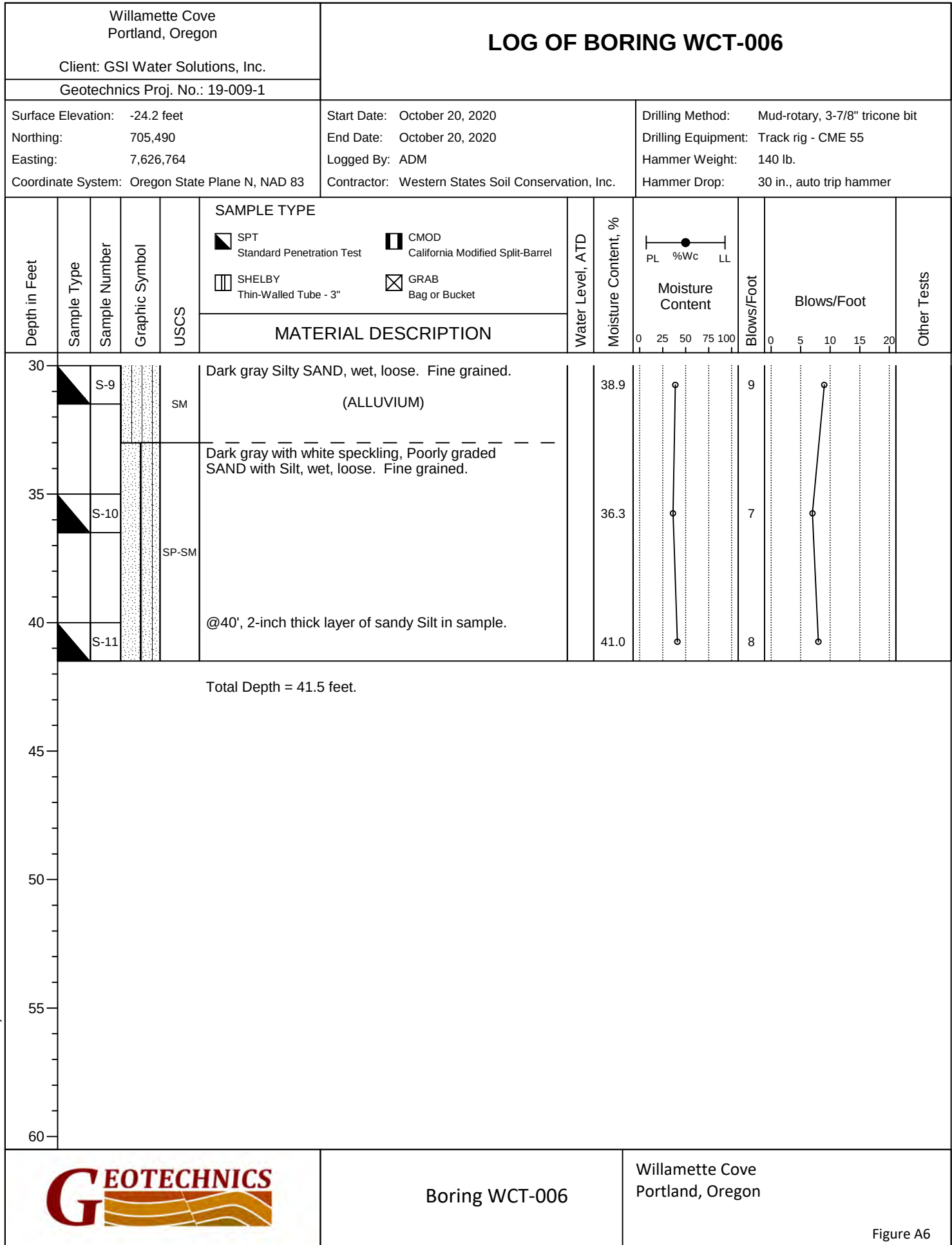


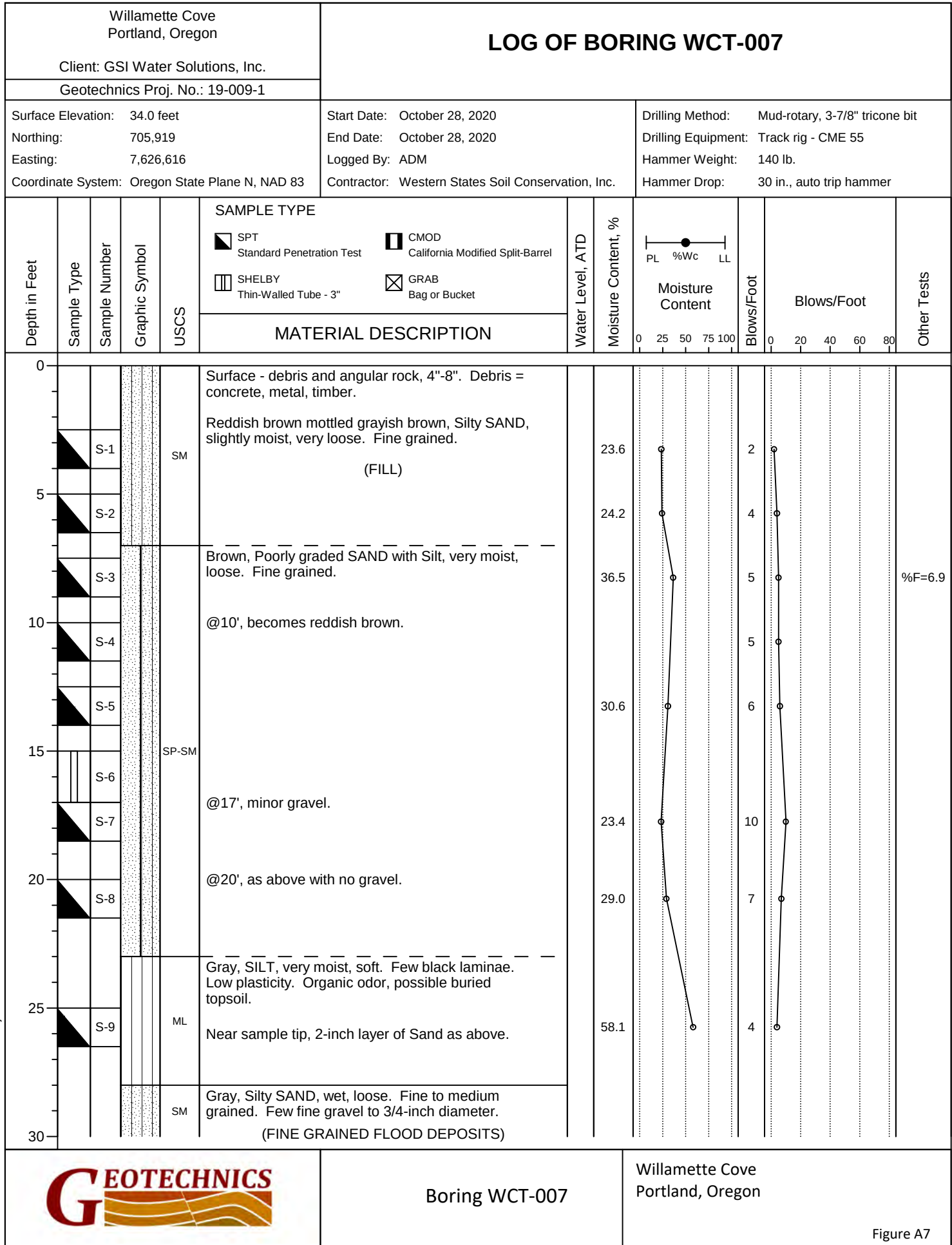












01-08-2021

C:\Users\Andre\Documents\1\Projects - Geotechnics LLC\19-009-1 Willamette Cove\field and lab\T007.bor

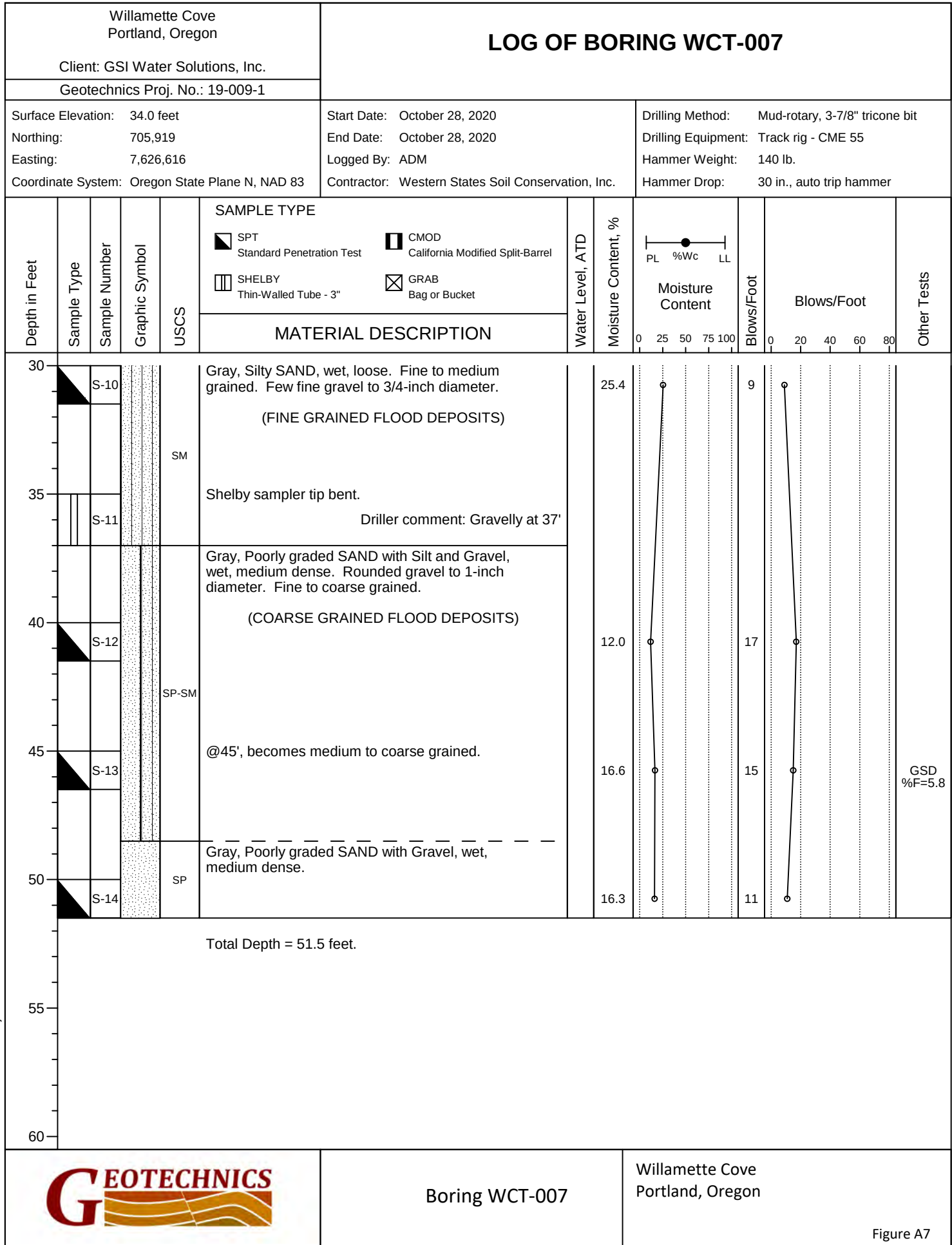
GEOTECHNICS

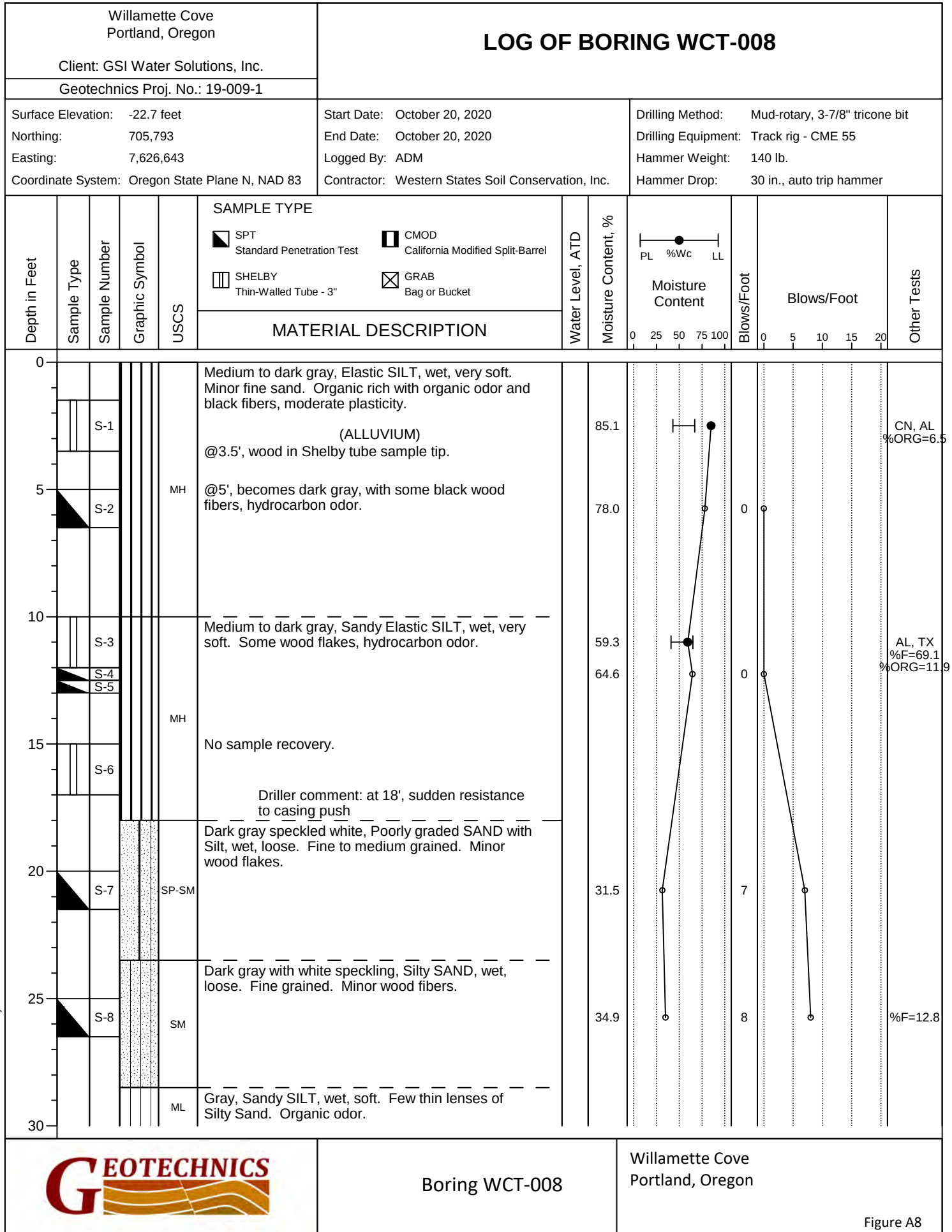
Boring WCT-007

Willamette Cove

Portland, Oregon

Figure A7





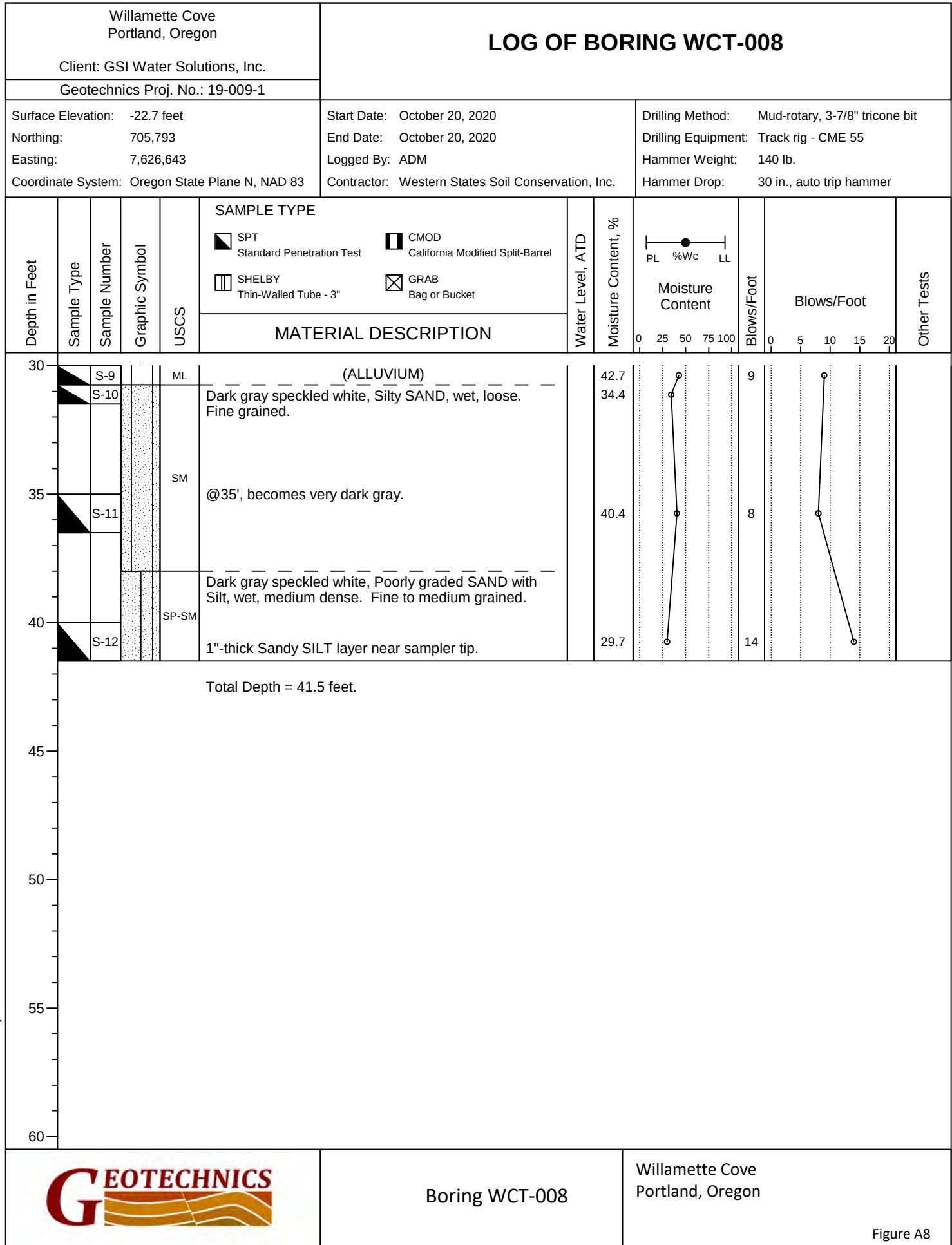
01-08-2021 C:\Users\Andre\Documents\1\Projects - Geotechnics LLC\19-009-1 Willamette Cove\field and lab\T008.bor



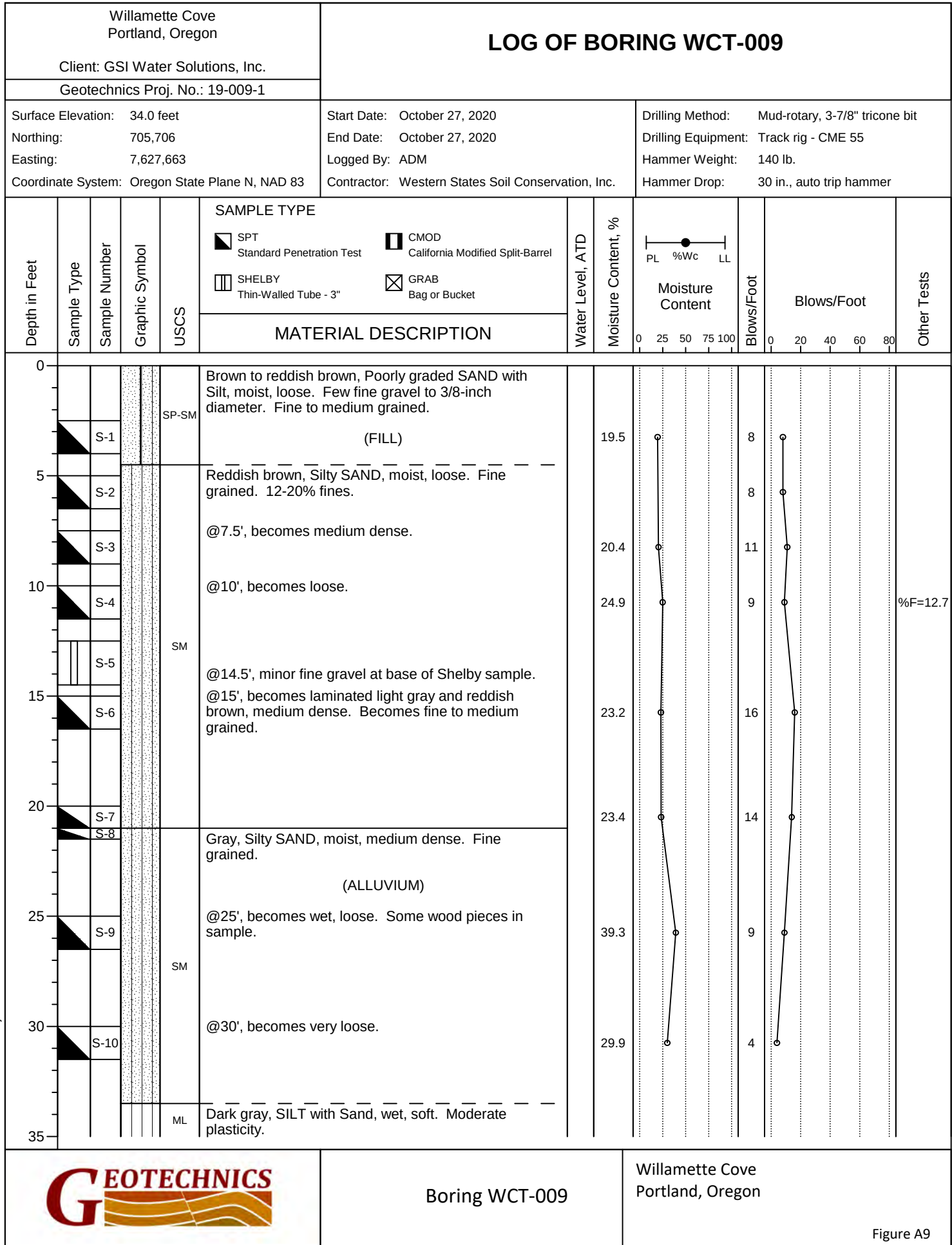
Boring WCT-008

Willamette Cove
Portland, Oregon

Figure A8



01-08-2021 C:\Users\Andre\Documents\1\Projects - Geotechnics LLC\19-009-1 Willamette Cove\field and lab\T008.bor



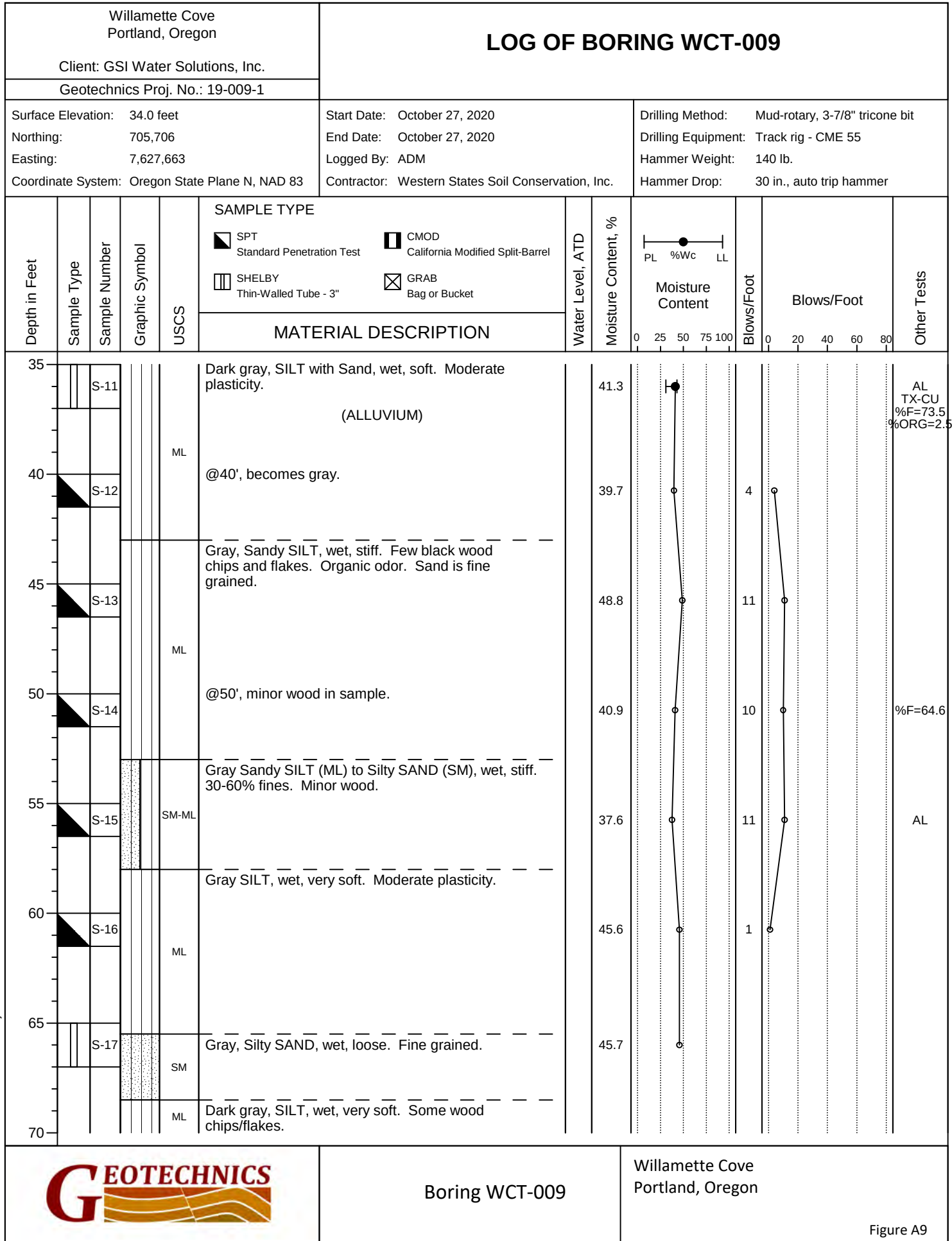
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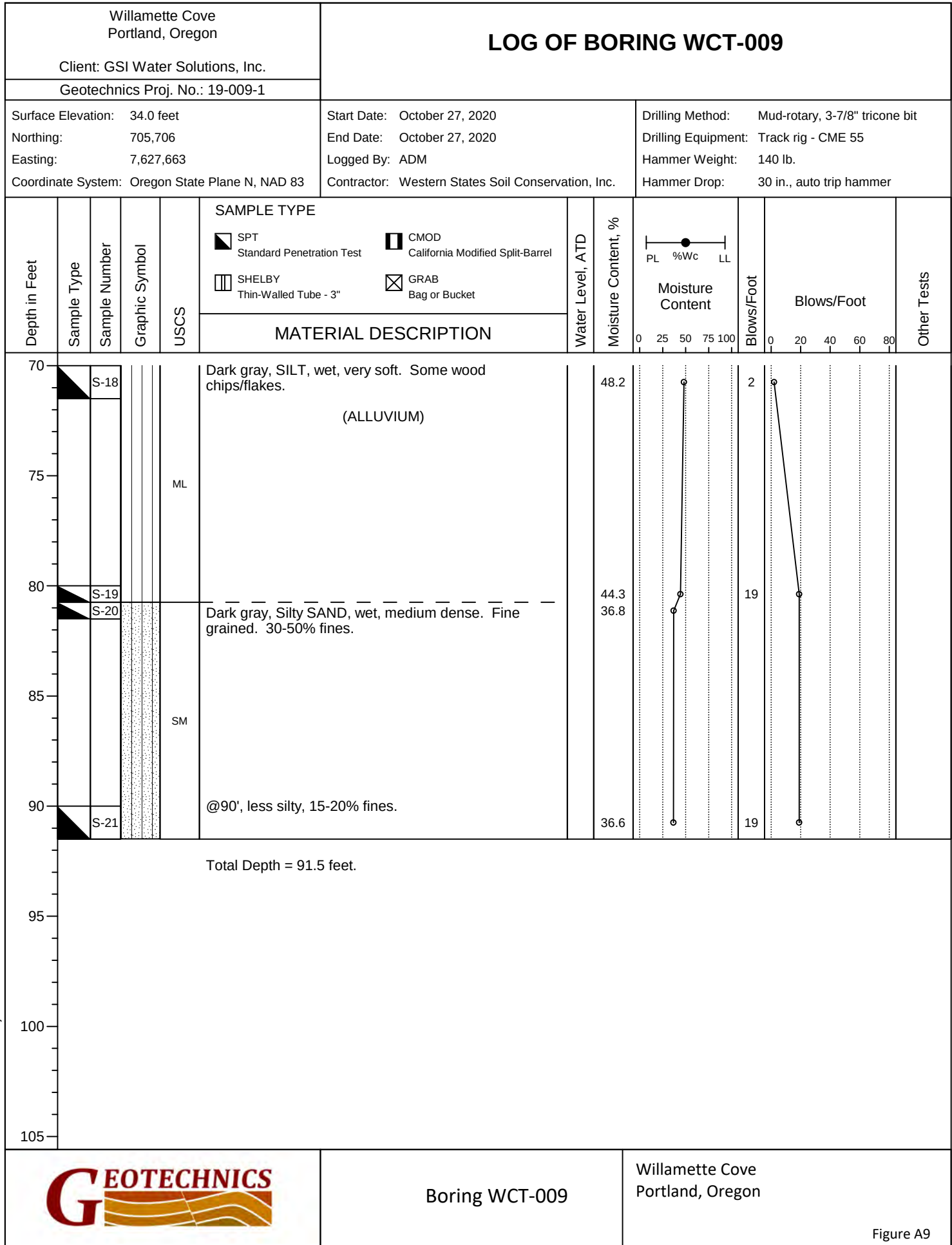


Boring WCT-009

Willamette Cove
Portland, Oregon

Figure A9

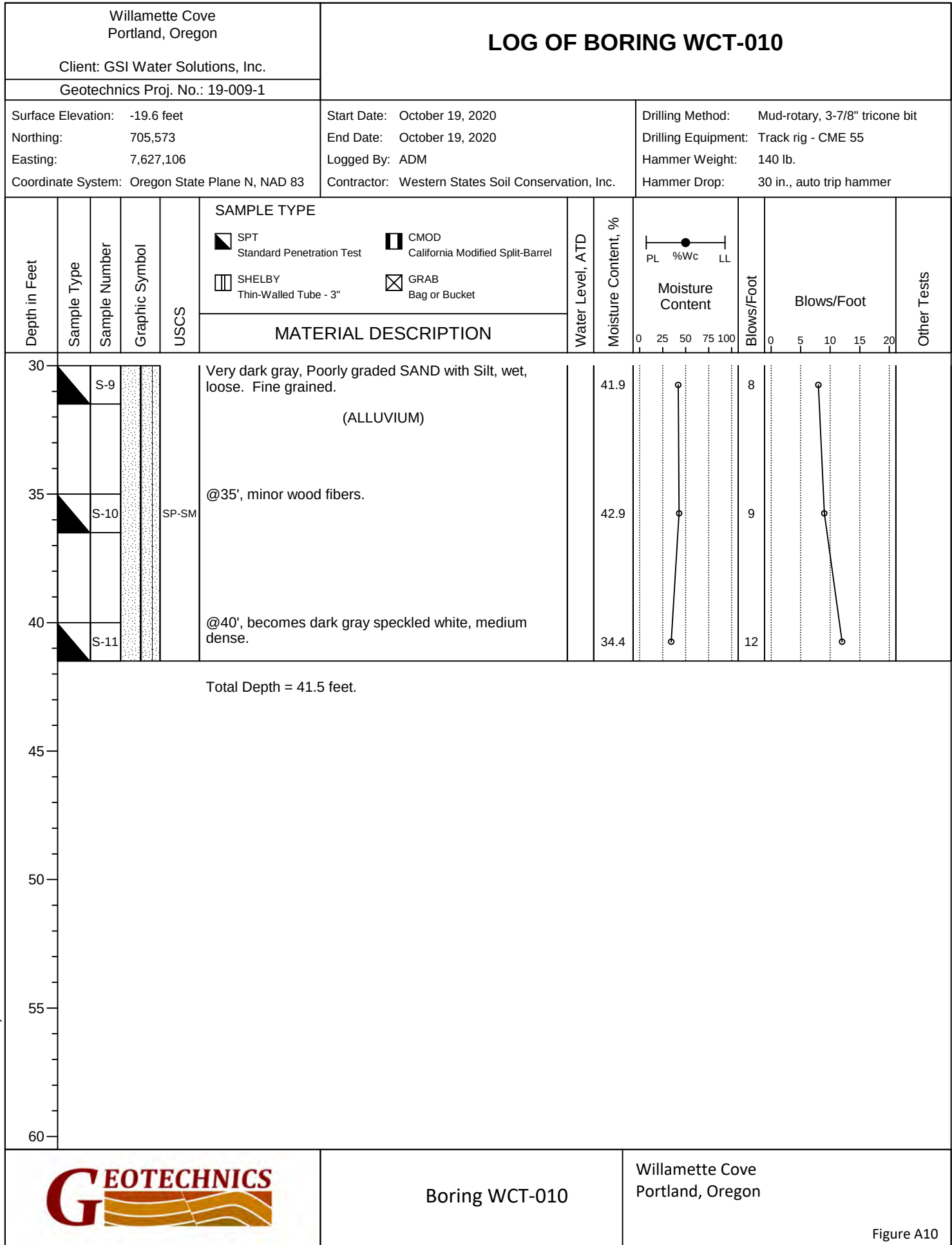




01-08-2021 C:\Users\Andre\Documents\1\Projects - Geotechnics LLC\19-009-1 Willamette Cove\field and lab\T009.bor

Willamette Cove Portland, Oregon				LOG OF BORING WCT-010									
Client: GSI Water Solutions, Inc.													
Geotechnics Proj. No.: 19-009-1													
Surface Elevation: -19.6 feet				Start Date: October 19, 2020				Drilling Method: Mud-rotary, 3-7/8" tricone bit					
Northing: 705,573				End Date: October 19, 2020				Drilling Equipment: Track rig - CME 55					
Easting: 7,627,106				Logged By: ADM				Hammer Weight: 140 lb.					
Coordinate System: Oregon State Plane N, NAD 83				Contractor: Western States Soil Conservation, Inc.				Hammer Drop: 30 in., auto trip hammer					
Depth in Feet	Sample Type	Sample Number	Graphic Symbol	USCS	SAMPLE TYPE		Water Level, ATD	Moisture Content, %	PL %Wc LL	Moisture Content	Blows/Foot	Blows/Foot	Other Tests
					SPT Standard Penetration Test CMOD California Modified Split-Barrel SHELBY Thin-Walled Tube - 3" GRAB Bag or Bucket	MATERIAL DESCRIPTION							
0					Medium to dark gray, Poorly graded SAND with Silt, wet, very loose. Fine grained. Minor wood in mud cuttings.								
					(ALLUVIUM)								
5		S-1			@5', no sample recovery, slipped out of Shelby tube and placed in baggie. Becomes dark gray.		41.3		1				
		S-2											
10		S-3											
		S-4					35.5		3				
15		S-5		SP-SM	@15', becomes speckled white.		41.5		3				GSD %F=10.9
													%F=10.2
20		S-6			@20', a few 2"-thick beds of sandy Silt.		41.0		0				
		S-7											
25		S-8			@25', becomes loose. Few thin beds of dark gray Sandy SILT.		36.0		6				
30					@30', becomes very dark gray.								

<



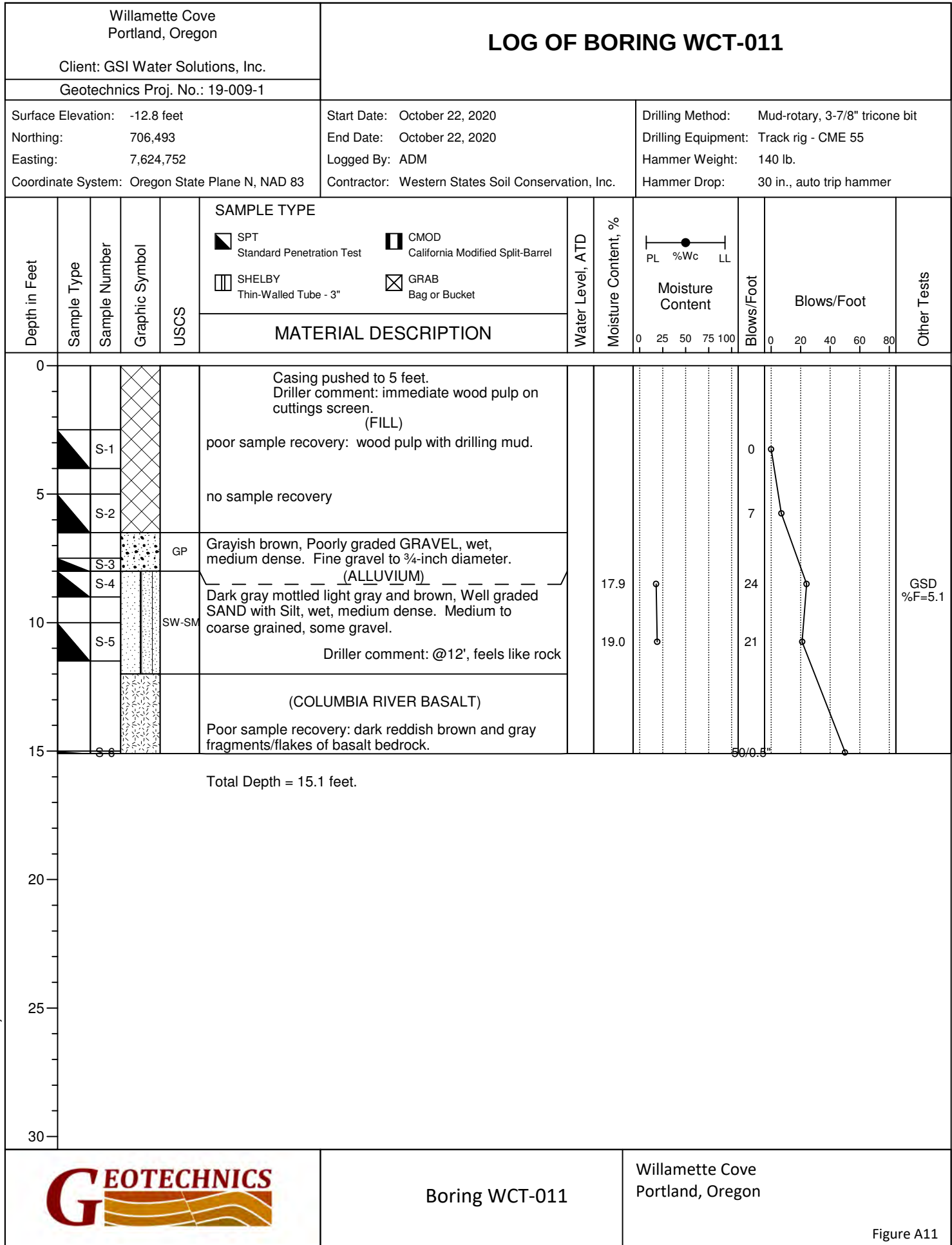


Figure A11

APPENDIX G

Geotechnical Logs



Greenfield Geotechnical

EXPLORATION WC-T013

PAGE 1 OF 2

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

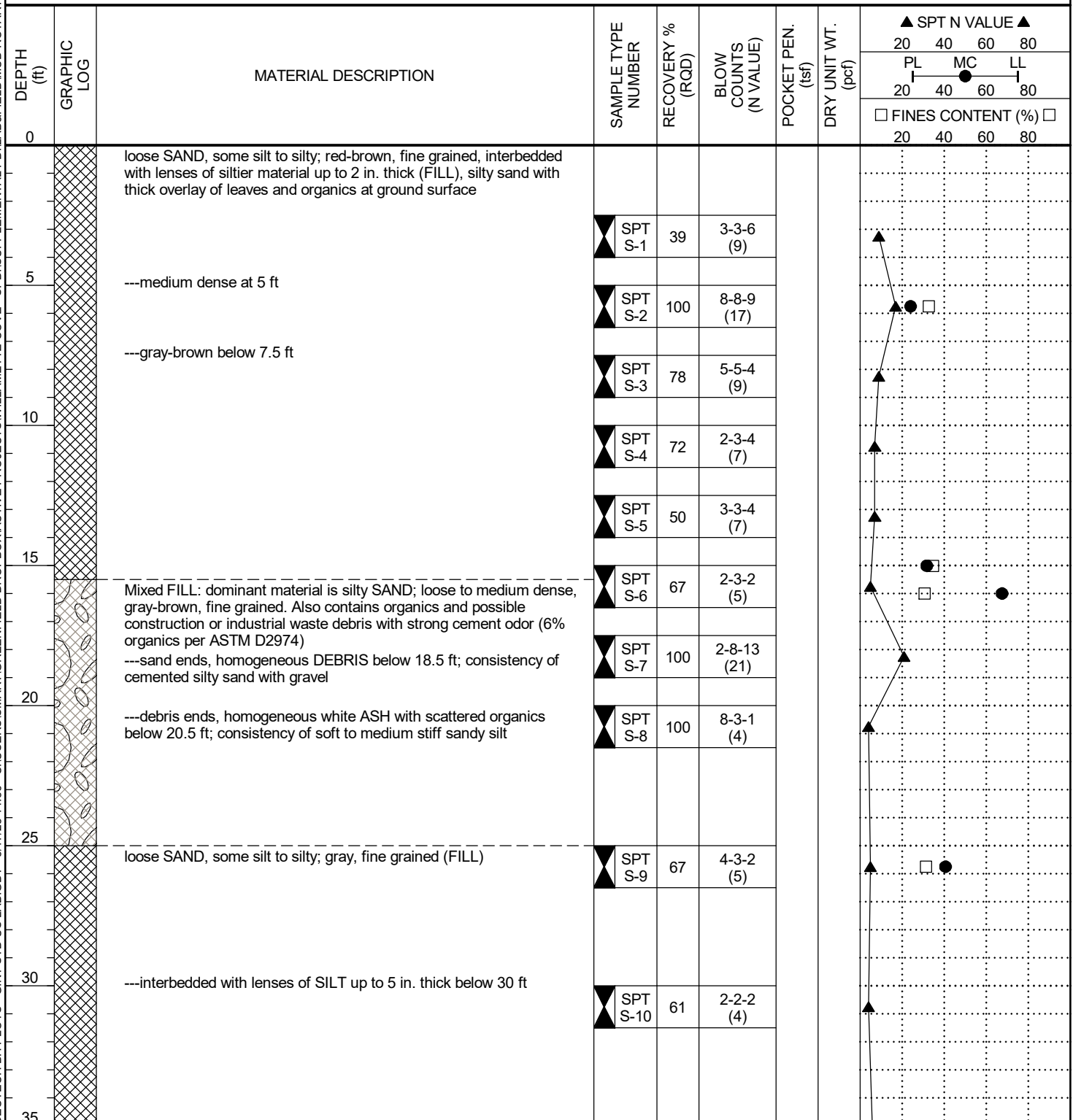
PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland ORDATE STARTED 11/16/22 COMPLETED 11/16/22GROUND ELEVATION 43.5 ft HOLE SIZE 4.2 inchesDRILLING CONTRACTOR Holt Services, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Mud RotaryAT TIME OF DRILLING ---LOGGED BY M. Banks CHECKED BY _____AT END OF DRILLING ---NOTES Mobile B-57 track-mounted drill rigAFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE_MUD_2022.GPJ



(Continued Next Page)



CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲	
								20 40 60 80	20 40 60 80
								PL MC LL	□ FINES CONTENT (%) □
35								20 40 60 80	20 40 60 80
		loose SAND, some silt to silty; gray, fine grained, interbedded with lenses of SILT up to 5 in. thick (FILL)	SPT S-11	83	1-3-3 (6)				
40									
		soft SILT, some fine-grained sand; gray-brown, low to medium plasticity, scattered organic debris, strong hydrocarbon odor (Recent Fine Alluvium)	SPT S-12	100	0-1-2 (3)				
45									
		---plentiful wood debris below 45 ft (14% organics per ASTM D2974)	SPT S-13	100	2-1-3 (4)				
50									
		medium dense, silty SAND; gray, fine grained (Recent Sandy Alluvium)	SPT S-14	83	5-5-6 (11)				

Bottom of exploration at 51.5 feet.



Greenfield Geotechnical

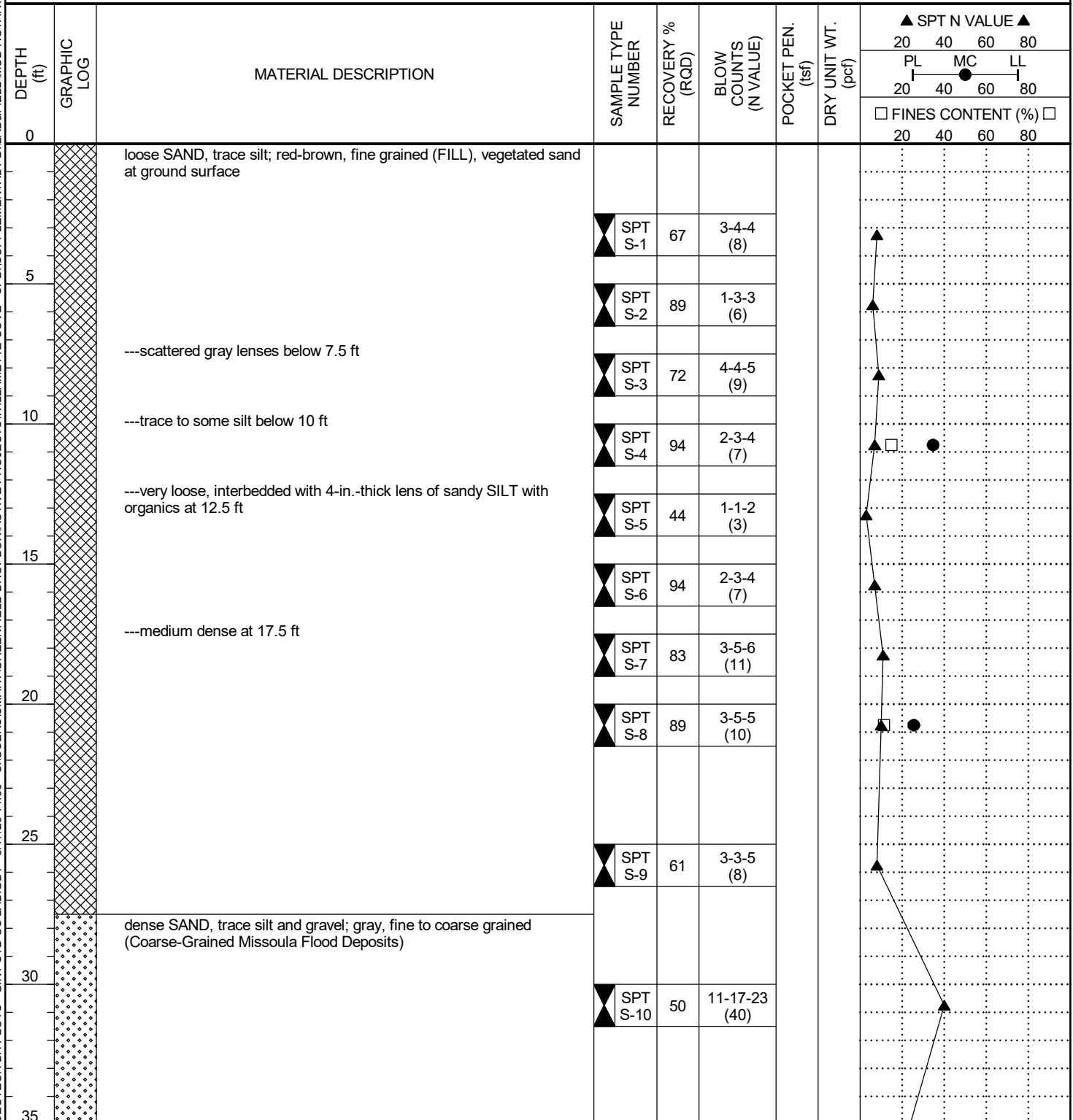
EXPLORATION WC-T014

PAGE 1 OF 2

CLIENT GSI Water Solutions, Inc.
PROJECT NUMBER _____
DATE STARTED 11/15/22 **COMPLETED** 11/15/22
DRILLING CONTRACTOR Holt Services, Inc.
DRILLING METHOD Mud Rotary
LOGGED BY M. Banks **CHECKED BY** _____
NOTES Mobile B-57 track-mounted drill rig

PROJECT NAME Willamette Cove Supplemental PDI
PROJECT LOCATION Willamette Cove, Portland OR
GROUND ELEVATION 36.5 ft **HOLE SIZE** 4.2 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE MUD 2022.GPJ



(Continued Next Page)

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland OR

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
20								20	40	60	80
								☐ FINES CONTENT (%) ☐			
35								20	40	60	80
		medium dense SAND, trace silt and gravel; gray, fine to coarse grained (Coarse-Grained Missoula Flood Deposits)	▲ SPT S-11	78	10-10-11 (21)						

40		---medium dense to dense below 40 ft	▲ SPT S-12	89	11-14-16 (30)						
45			▲ SPT S-13	83	13-16-17 (33)						
50			▲ SPT S-14	78	15-14-15 (29)						

Bottom of exploration at 51.5 feet.



Greenfield Geotechnical

EXPLORATION WC-T015

PAGE 1 OF 3

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

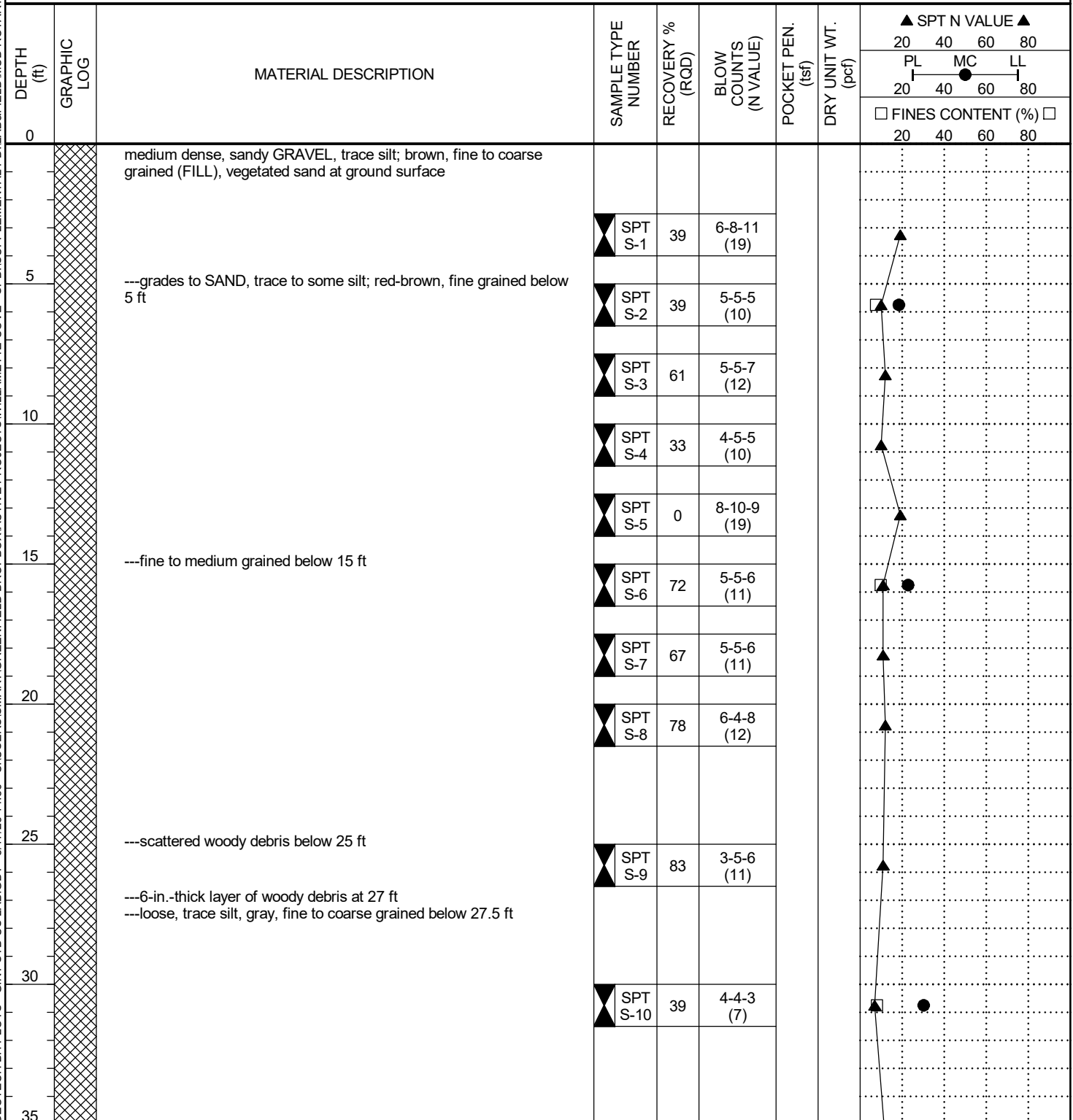
PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland ORDATE STARTED 11/14/22 COMPLETED 11/14/22GROUND ELEVATION 34 ft HOLE SIZE 4.2 inchesDRILLING CONTRACTOR Holt Services, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Mud RotaryAT TIME OF DRILLING ---LOGGED BY M. Banks CHECKED BY _____AT END OF DRILLING ---NOTES Mobile B-57 track-mounted drill rigAFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE_MUD_2022.GPJ



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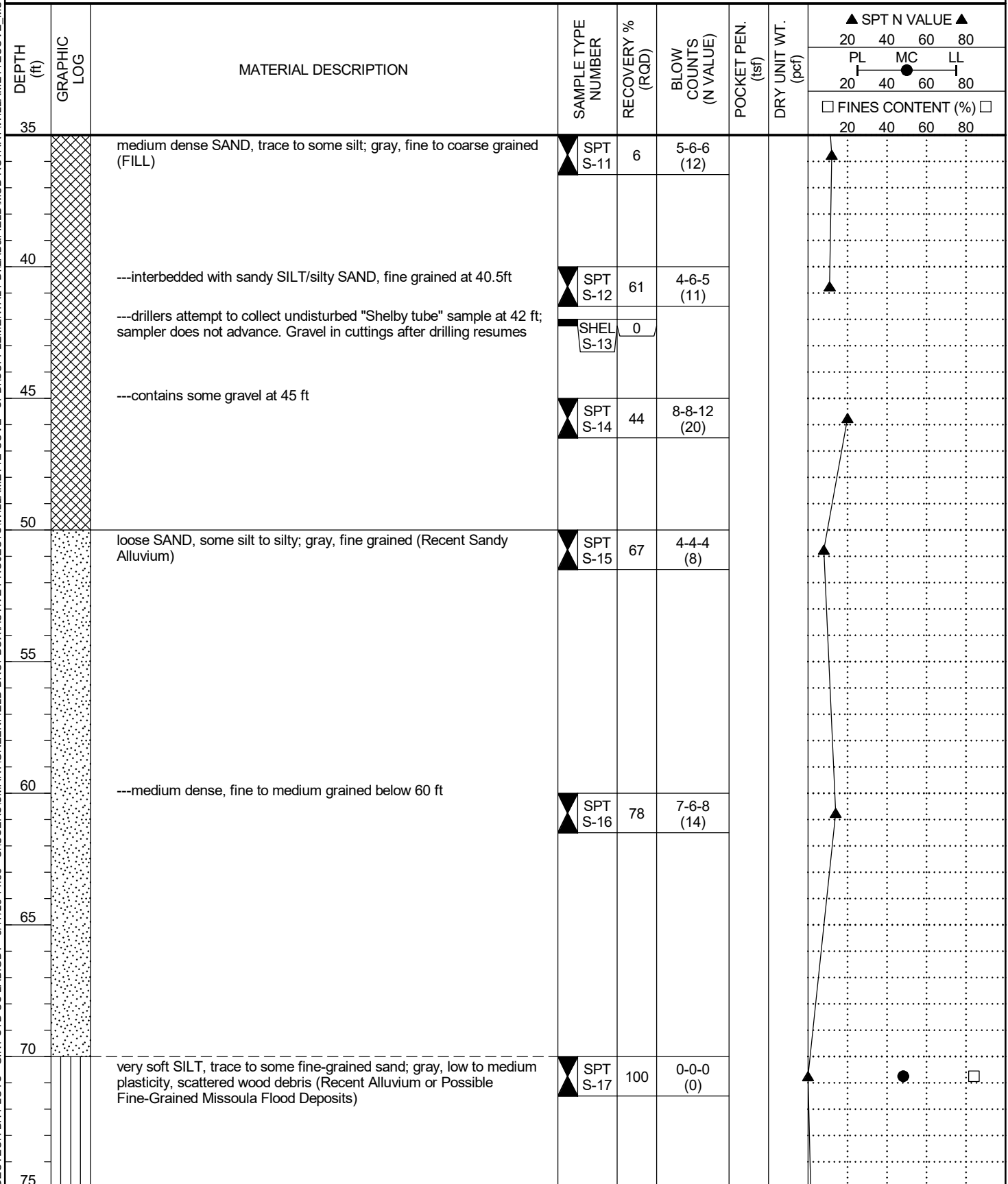
CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

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(Continued Next Page)

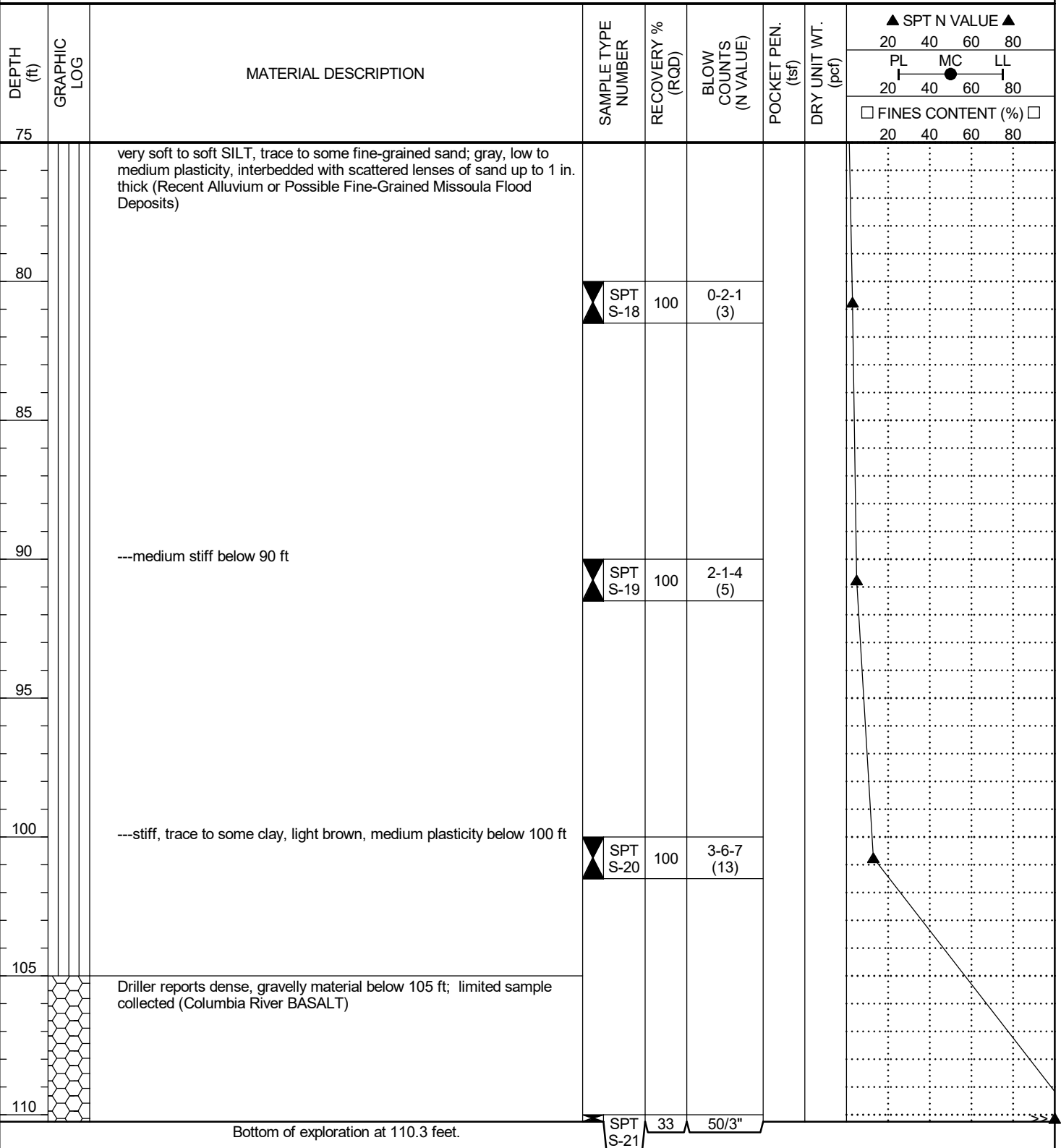


CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR



CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland ORDATE STARTED 11/16/22COMPLETED 11/17/22GROUND ELEVATION 31.5 ftHOLE SIZE 4.2 inchesDRILLING CONTRACTOR Holt Services, Inc.

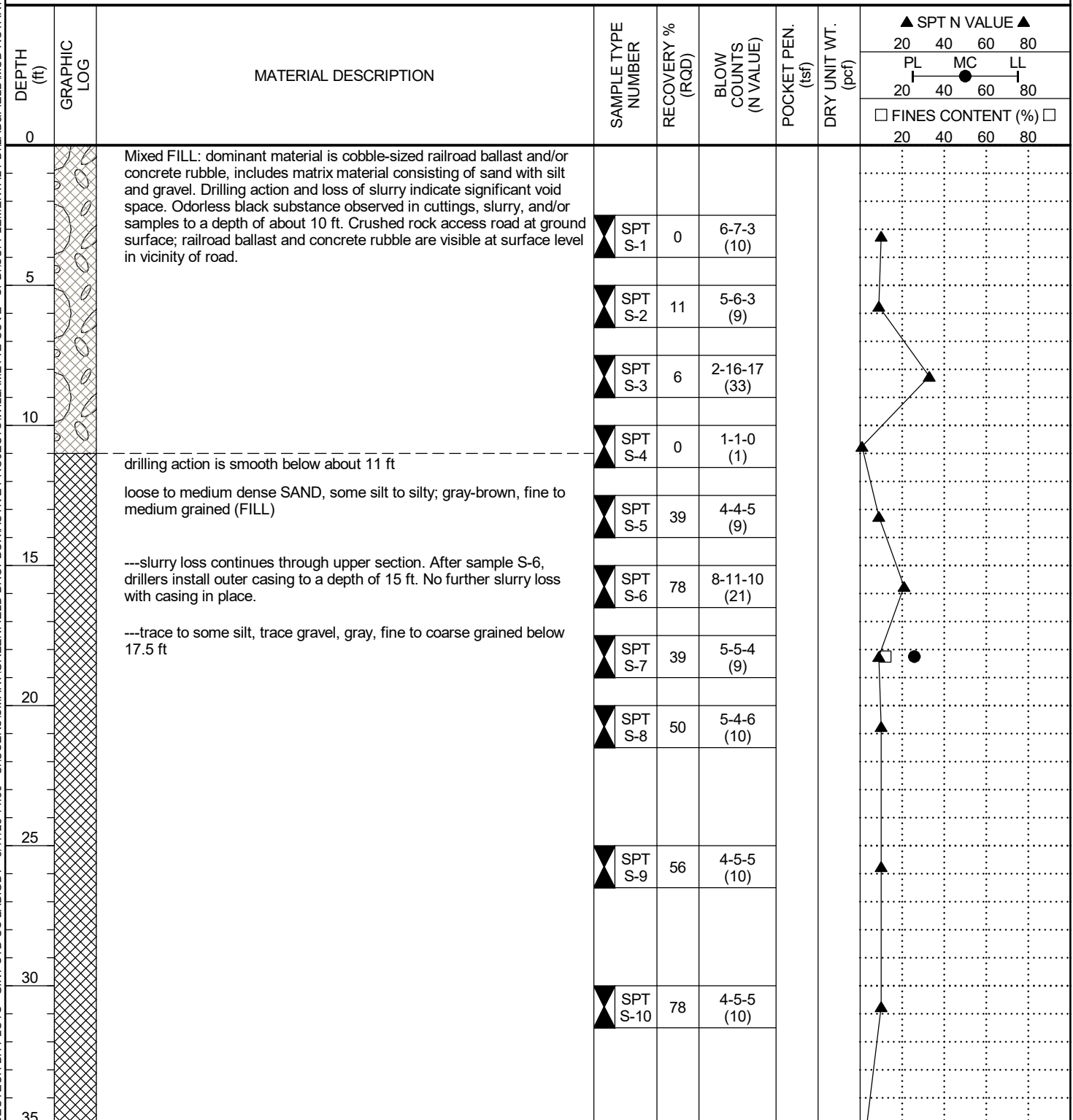
GROUND WATER LEVELS:

DRILLING METHOD Mud RotaryAT TIME OF DRILLING ---LOGGED BY M. Banks

CHECKED BY _____

AT END OF DRILLING ---NOTES Mobile B-57 track-mounted drill rigAFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE_MUD_2022.GPJ



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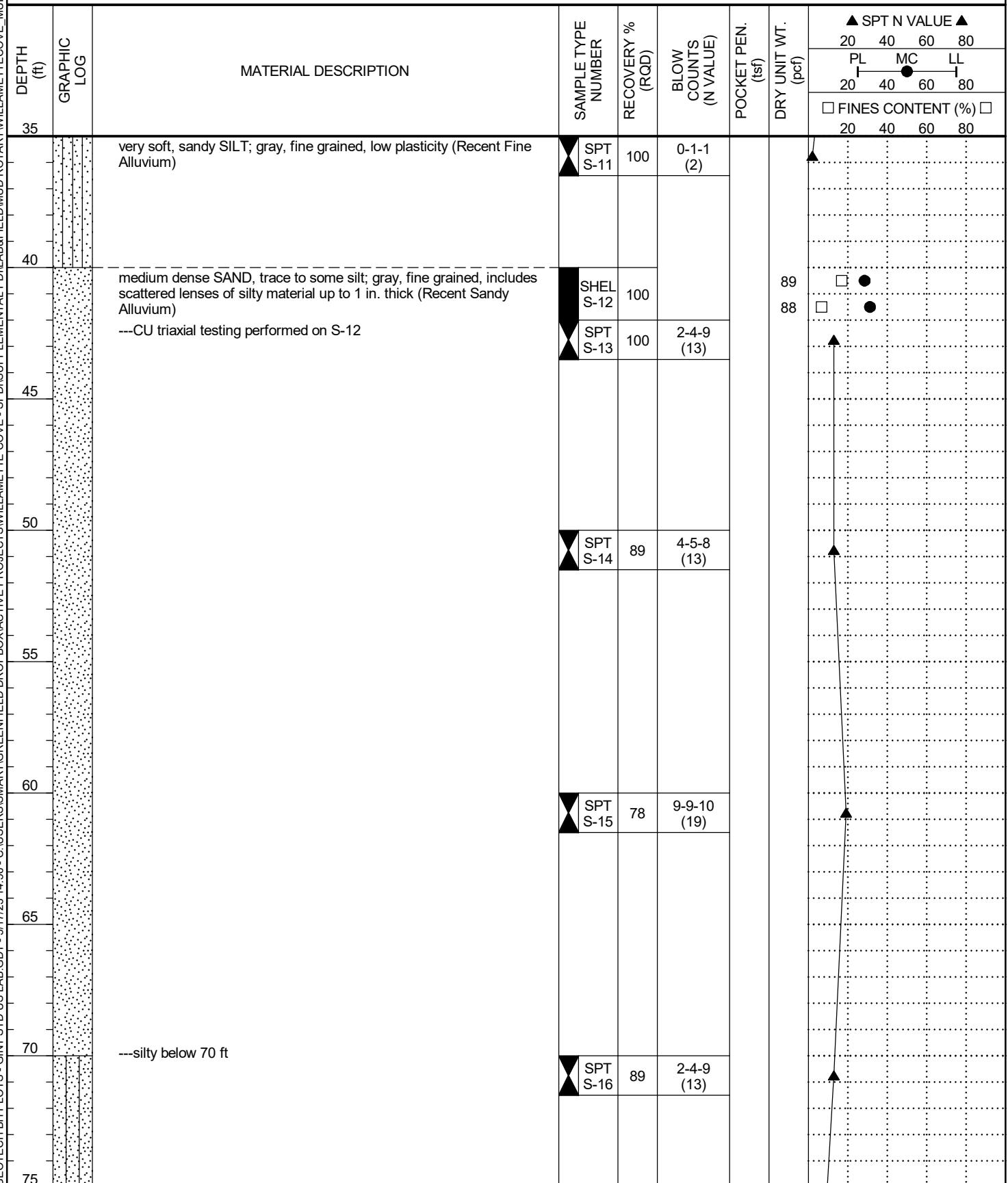
CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDI\SUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE MUD 2022.GPJ



(Continued Next Page)

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland OR

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
								20	40	60	80
								□ FINES CONTENT (%) □			
								20	40	60	80
75											
		medium dense silty SAND; gray, fine grained (Recent Sandy Alluvium)									
80		medium stiff, sandy SILT; gray, low to medium plasticity, fine-grained sand (Recent Sandy Alluvium)	▲ SPT S-17	100	3-1-4 (5)						
85											
90		--stiff, interbedded with 7-in.-thick lens of SAND with some silt at 90 ft	▲ SPT S-18	89	6-12-6 (18)						
95											
100			▲ SPT S-19	100	1-2-3 (5)						

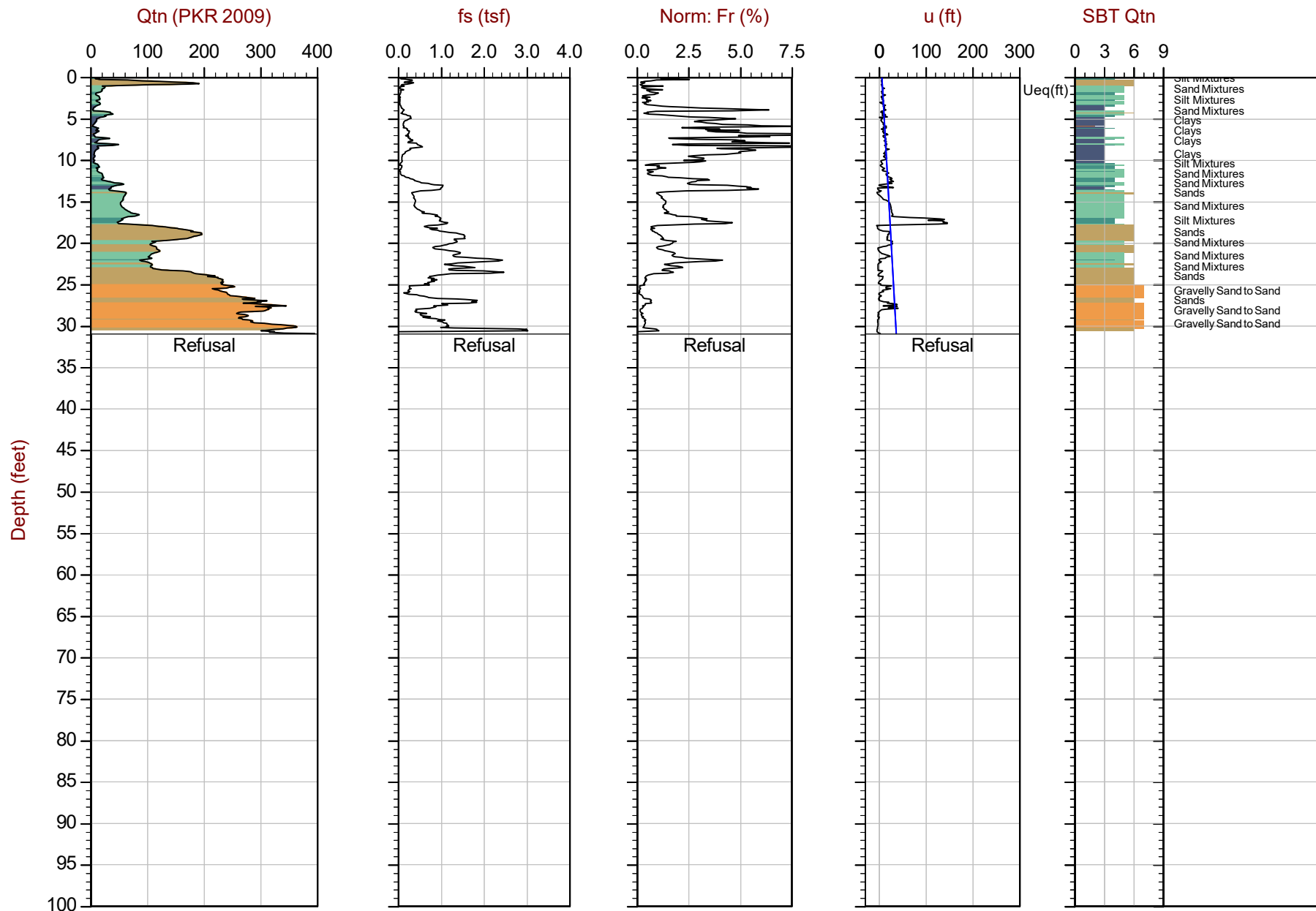
Bottom of exploration at 101.5 feet.



Greenfields

Job No: 22-59-24503
Date: 2022-07-18 09:49
Site: Willamette Overwater

Sounding: WC-CP001
Cone: 730:T1500F15U35



Max Depth: 9.425 m / 30.92 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP01.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58291 Long: 122.75596

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

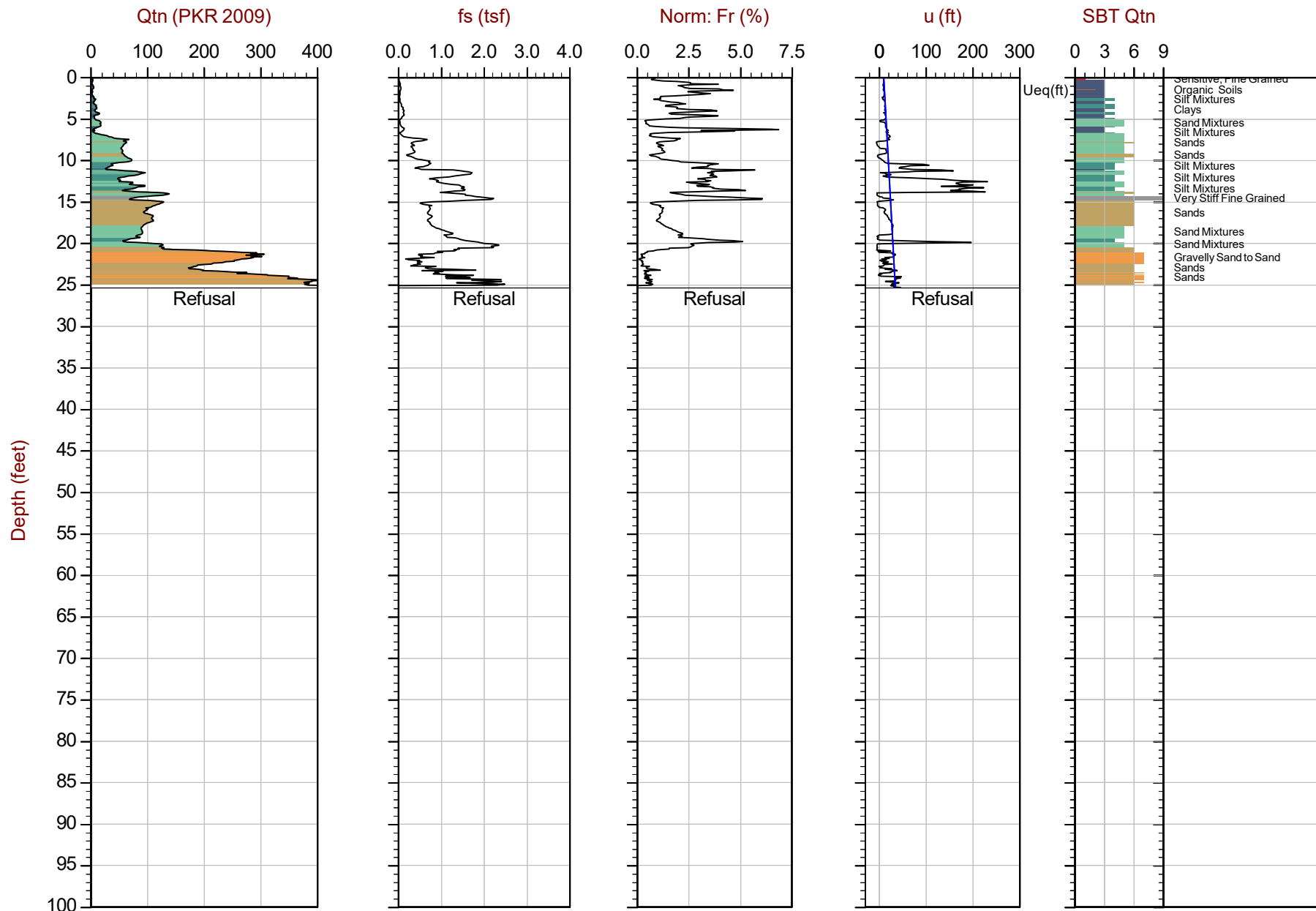
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-19 05:44
Site: Willamette Overwater

Sounding: WC-CP002
Cone: 730:T1500F15U35



Max Depth: 7.725 m / 25.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP02.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58218 Long: 122.75436

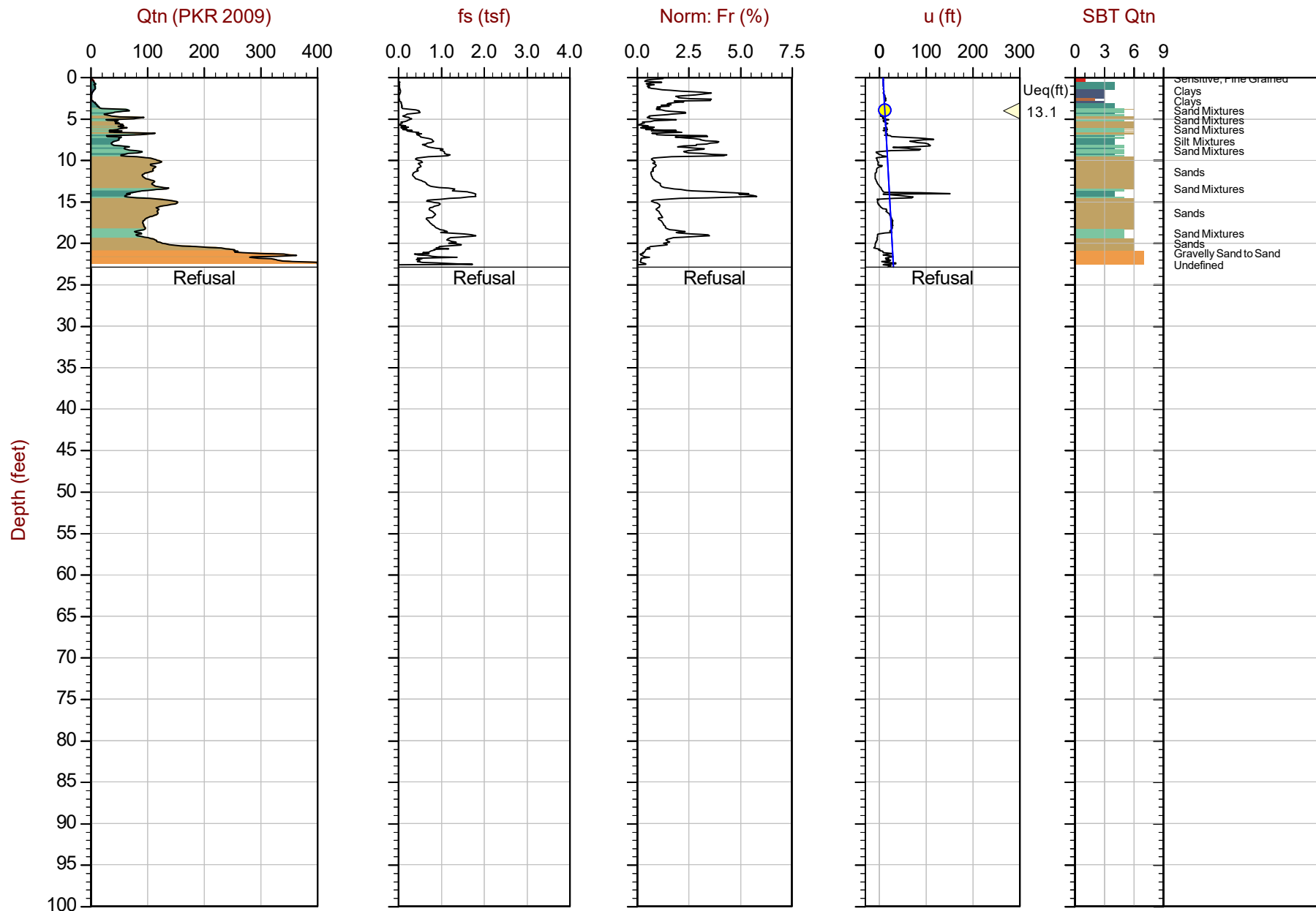
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-18 12:40
Site: Willamette Overwater

Sounding: WC-CP003
Cone: 730:T1500F15U35



Max Depth: 6.975 m / 22.88 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP03.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58253 Long: 122.75516

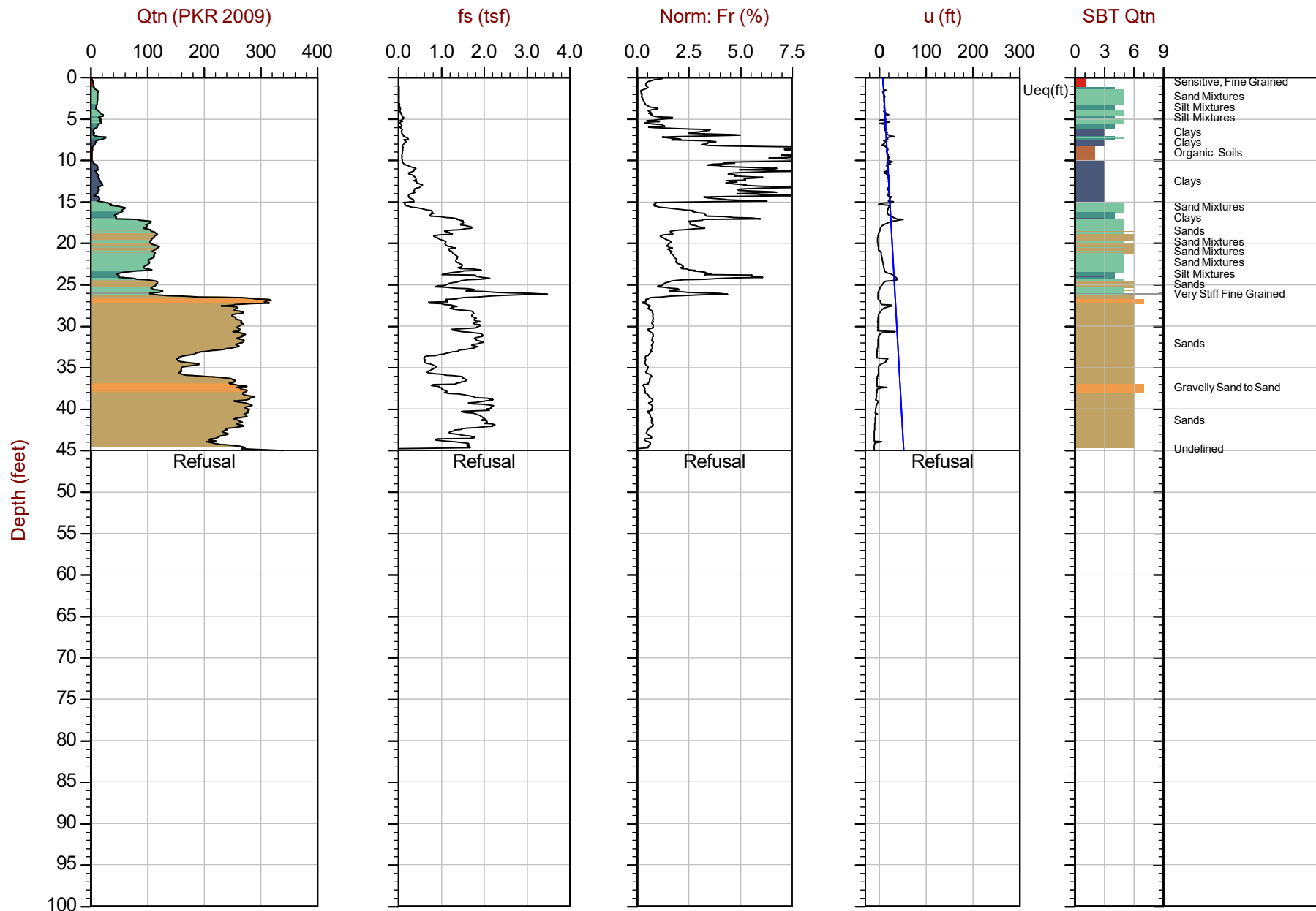
Yellow circle: Equilibrium Pore Pressure (Ueq)
Blue circle: Assumed Ueq
Yellow triangle: Dissipation, Ueq achieved
Purple triangle: Dissipation, Ueq not achieved
Blue line: Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-19 07:59
Site: Willamette Overwater

Sounding: WC-CP004
Cone: 730:T1500F15U35



Max Depth: 13.725 m / 45.03 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP04.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58185 Long: 122.75346

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

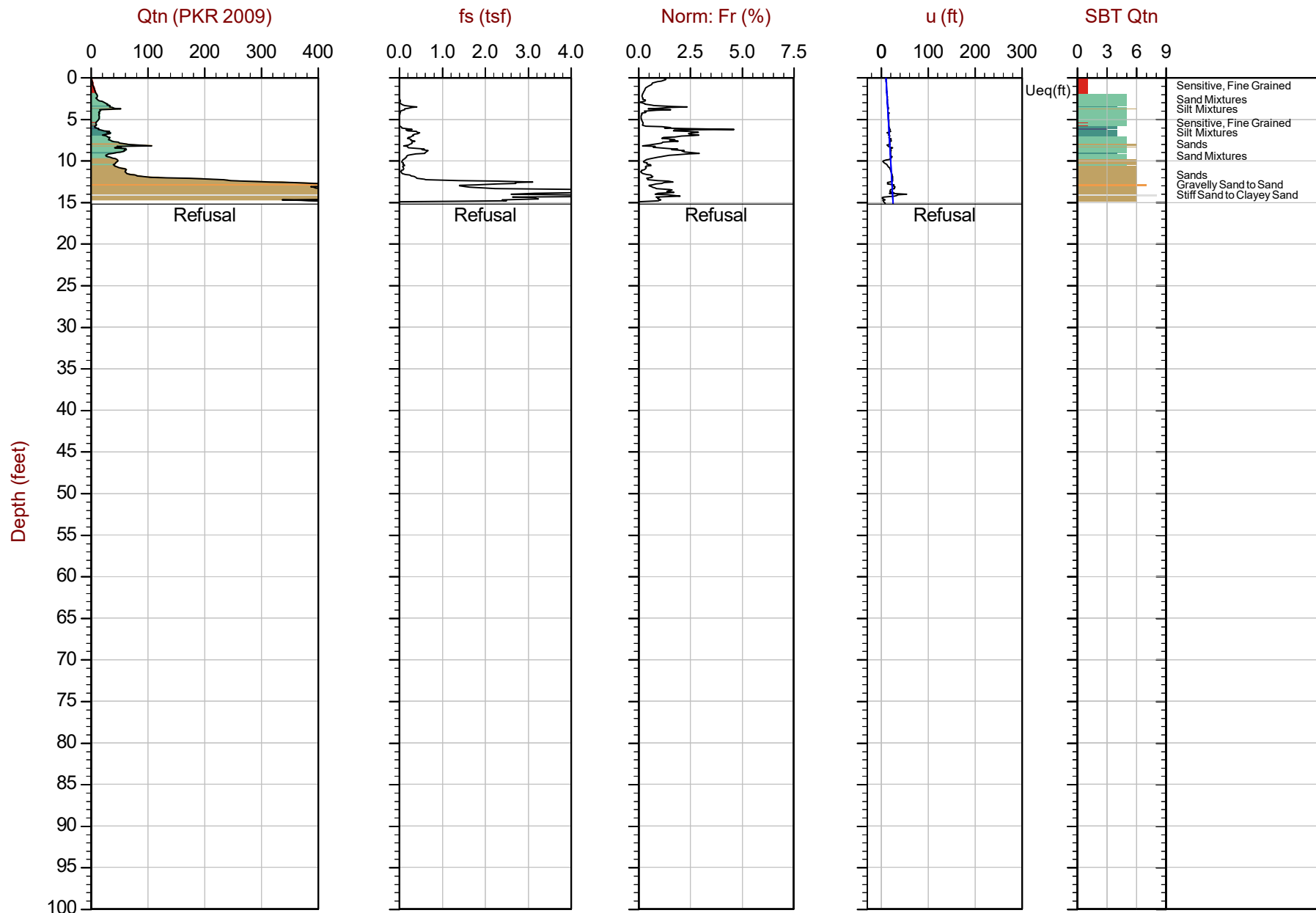
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-19 10:19
Site: Willamette Overwater

Sounding: WC-CP005
Cone: 730:T1500F15U35



Max Depth: 4.625 m / 15.17 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP05.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58127 Long: 122.75149

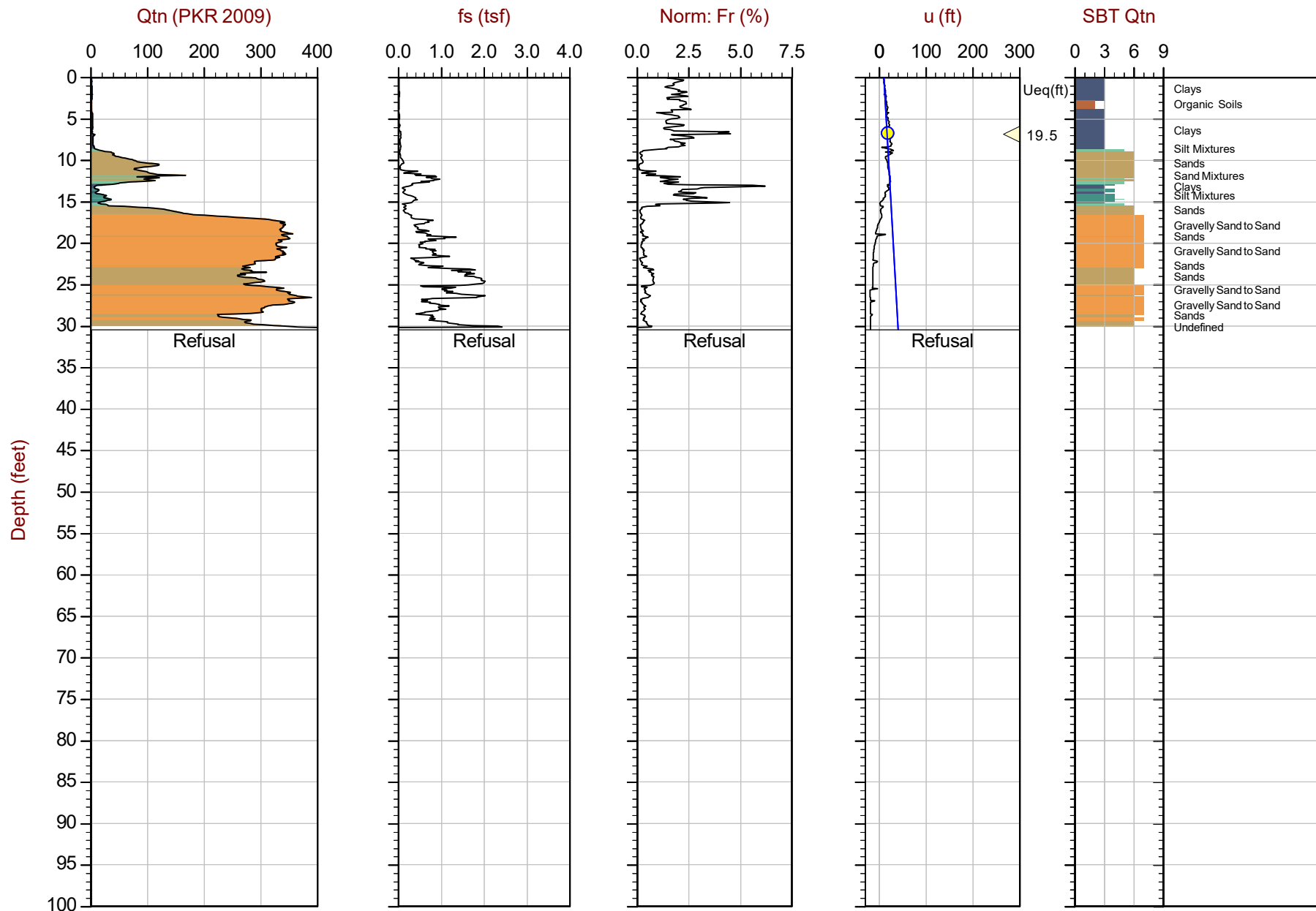
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-20 06:52
Site: Willamette Overwater

Sounding: WC-CP006
Cone: 730:T1500F15U35



Max Depth: 9.275 m / 30.43 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP06.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58098 Long: 122.74954

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

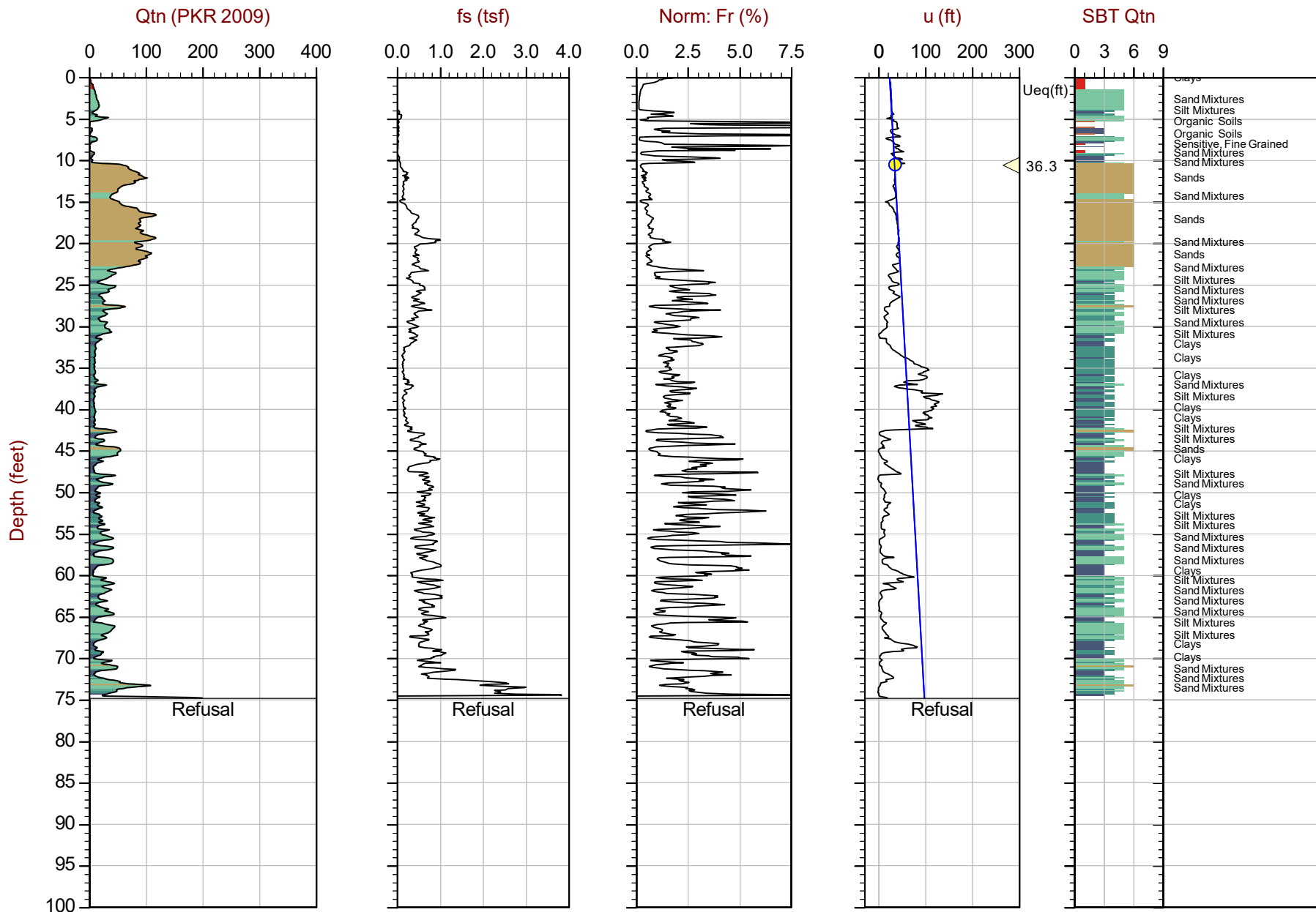
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-20 11:33
Site: Willamette Overwater

Sounding: WC-CP007
Cone: 730:T1500F15U35



Max Depth: 22.800 m / 74.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP07.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58075 Long: 122.74682

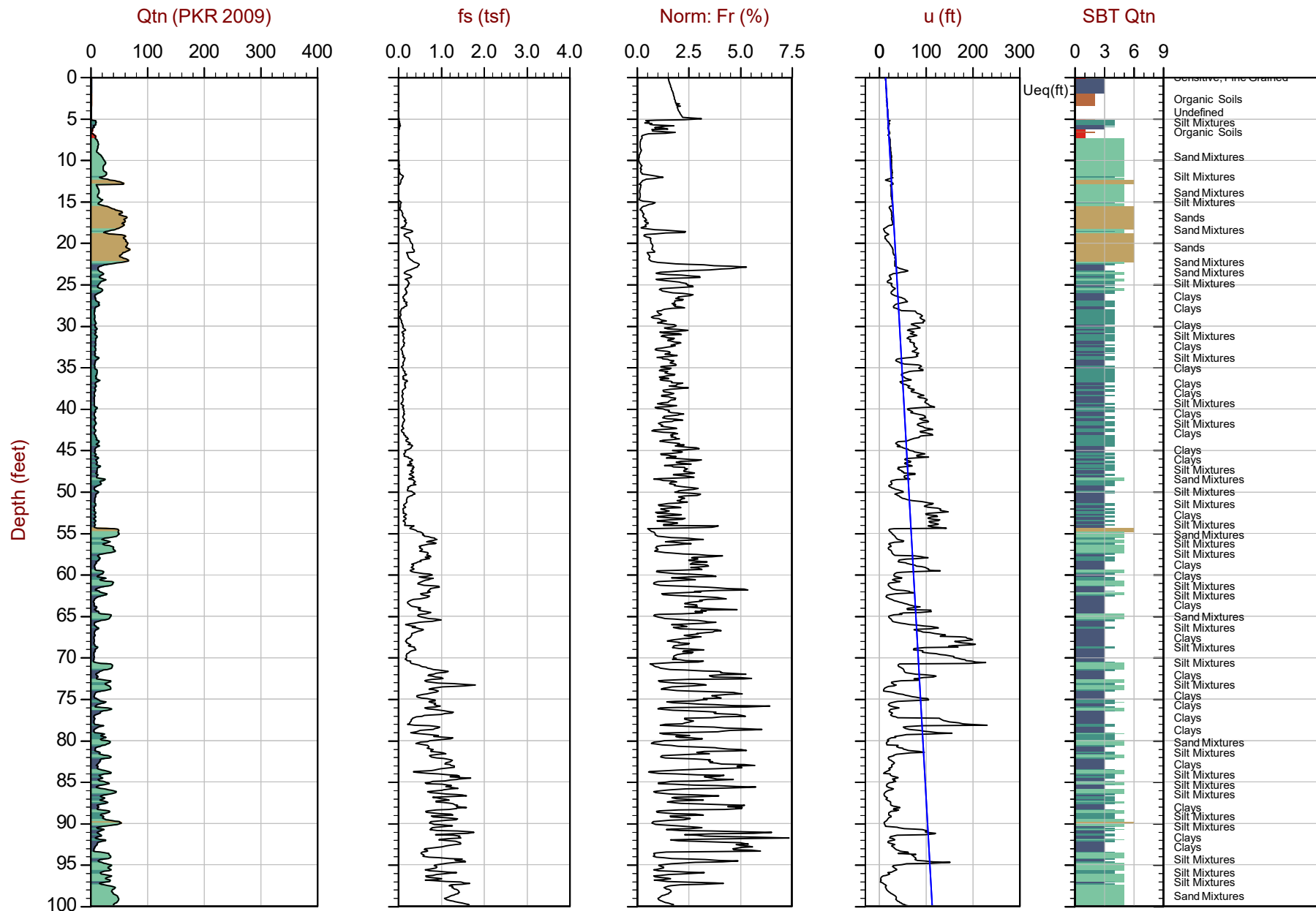
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ◀ Dissipation, Ueq achieved ◀ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-21 10:39
Site: Willamette Overwater

Sounding: WC-CP008
Cone: 730:T1500F15U35



Max Depth: 50.450 m / 165.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58053 Long: 122.74531

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

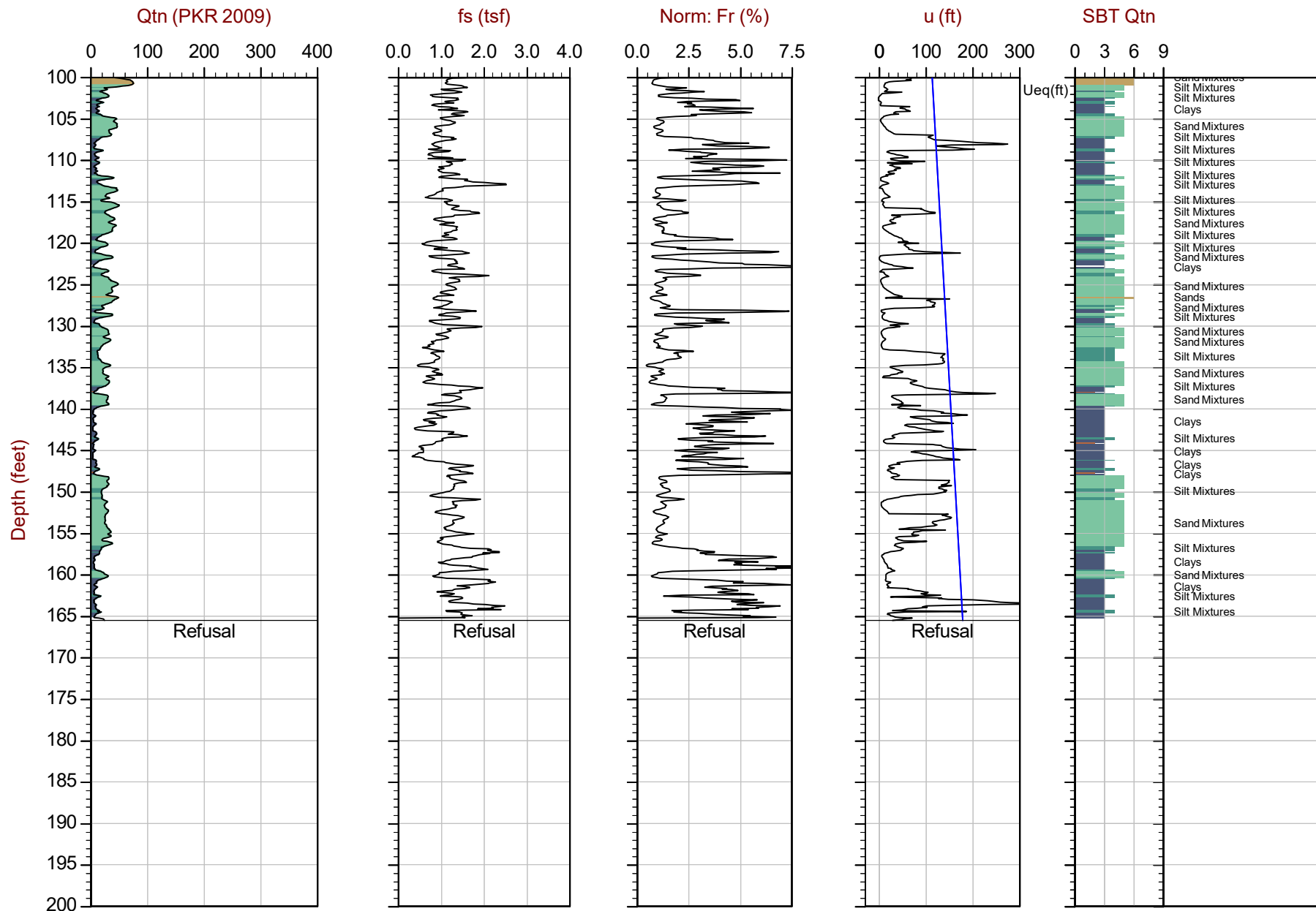
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-21 10:39
Site: Willamette Overwater

Sounding: WC-CP008
Cone: 730:T1500F15U35



Max Depth: 50.450 m / 165.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58053 Long: 122.74531

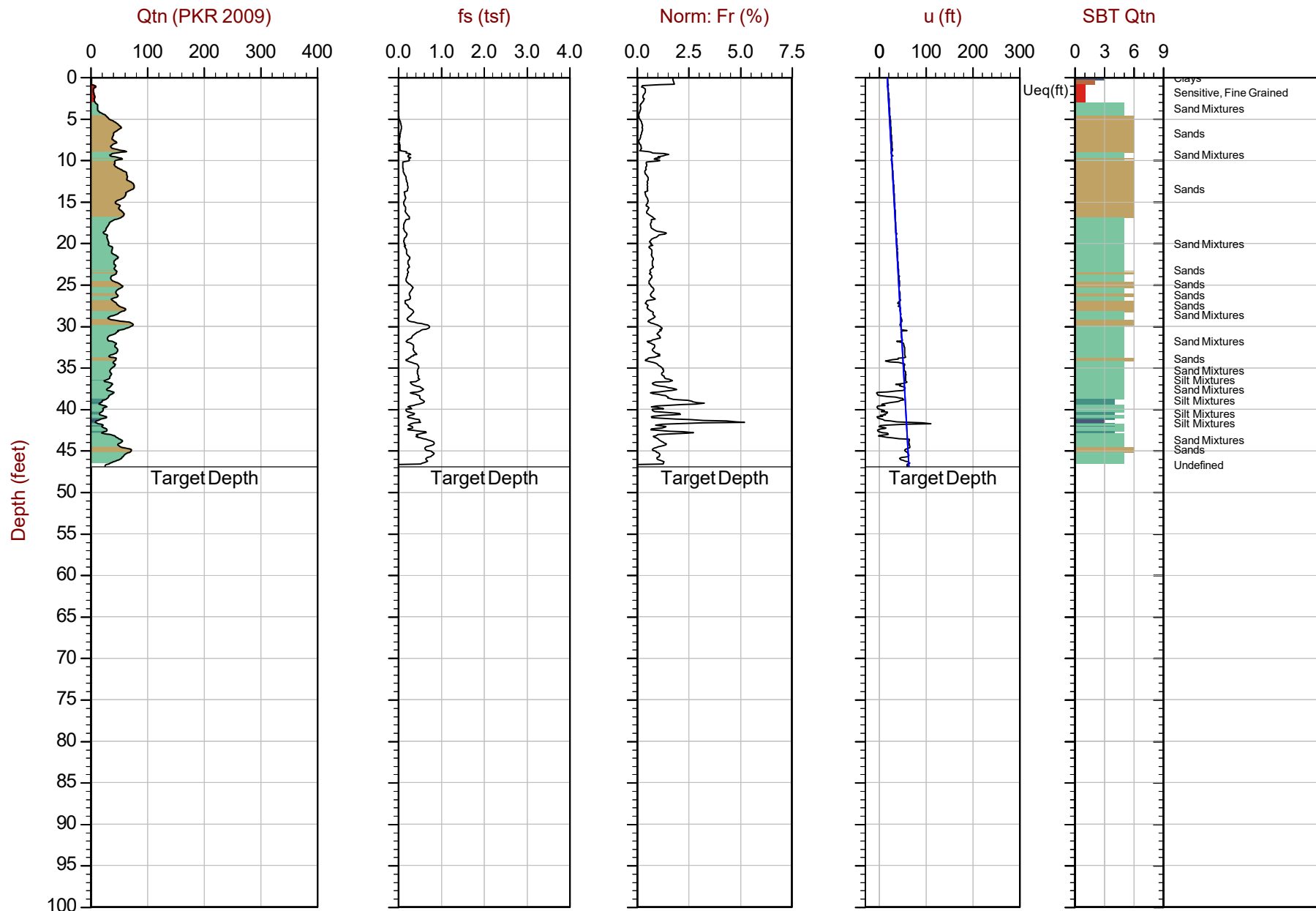
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-20 14:46
Site: Willamette Overwater

Sounding: WC-CP009
Cone: 730:T1500F15U35



Max Depth: 14.300 m / 46.92 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP09.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.57979 Long: 122.74570

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Job No: 22-59-24503
Date: 2022-07-21 07:19
Site: Willamette Overwater

Sounding: WC-CP010
Cone: 730:T1500F15U35



File: 22-59-24503_CP10.COR
Unit Wt: SBTQtn (PKR2009)

SBT: [Robertson, 2009 and 2010](#)
 Coords: [Lat: 45.57954](#) [Long: 122.74818](#)

● Equilibrium Pore Pressure (Ueq)
 ● Assumed Ueq
 ◀ Dissipation, Ueq achieved
 ◀ Dissipation, Ueq not achieved
 — Hydrostatic Line

The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Job No: 22-59-24503
Client: Greenfield Geotechnical
Project: Willamette Owater
Start Date: 18-Jul-2022
End Date: 22-Jul-2022

CPT_u PORE PRESSURE DISSIPATION SUMMARY

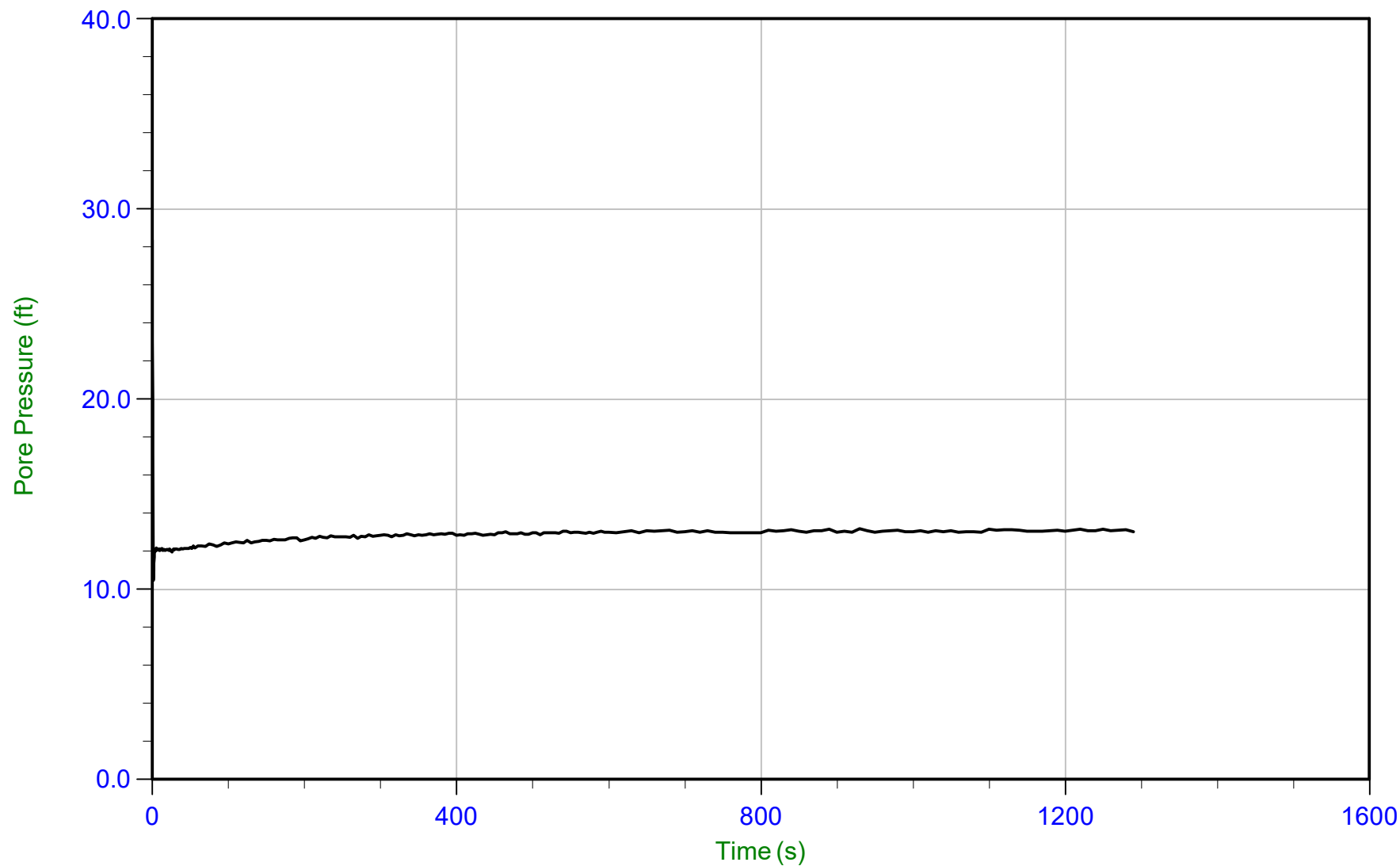
Sounding ID	File Name	Cone Area (cm ²)	Duration (s)	Test Depth (ft)	Estimated Equilibrium Pore Pressure U _{eq} (ft)	Calculated Phreatic Surface (ft)
WC-CP003	22-59-24503_CP03.ppd2	15.0	1290	4.0	13.1	-9.1
WC-CP006	22-59-24503_CP06.ppd2	15	4680	6.8	19.5	-12.7
WC-CP007	22-59-24503_CP07.ppd2	15	1200	10.6	36.3	-25.7
Total Duration			119.5 mins			



Greenfields

Job No: 22-59-24503
Date: 18-Jul-2022 12:40:00
Site: Willamette Overwater

Sounding: WC-CP003
Cone: EC730 Area=15 cm²



Trace Summary:

Filename: 22-59-24503_CP03.ppd2
Depth: 1.225 m / 4.019 ft
Duration: 1290.0 s

u Min: 10.5 ft
u Max: 28.4 ft
u Final: 13.0 ft

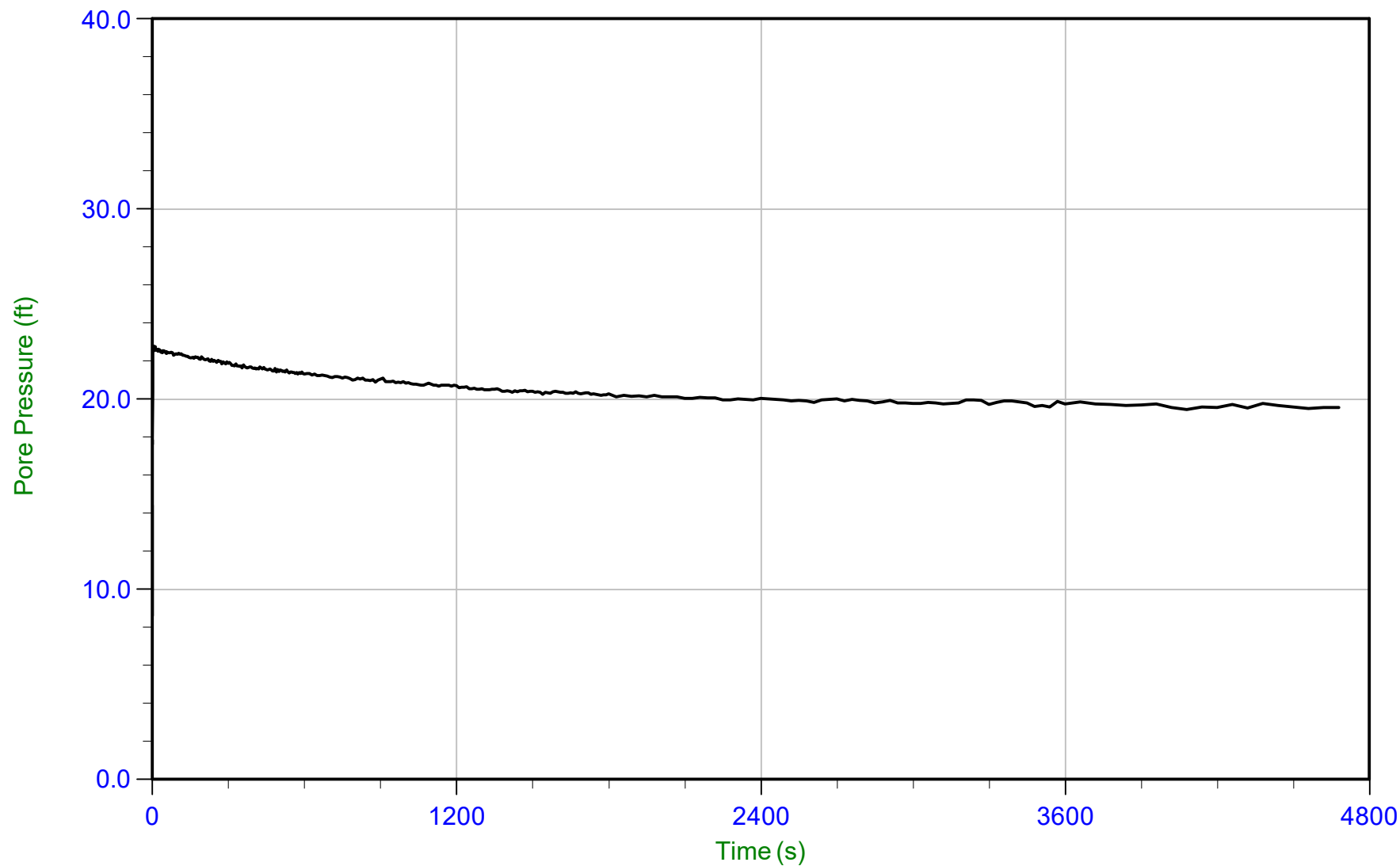
WT: -2.761 m / -9.059 ft
Ueq: 13.1 ft



Greenfields

Job No: 22-59-24503
Date: 20-Jul-2022 06:52:20
Site: Willamette Overwater

Sounding: WC-CP006
Cone: EC730 Area=15 cm²



Trace Summary:

Filename: 22-59-24503_CP06.ppd2
Depth: 2.075 m / 6.808 ft
Duration: 4680.0 s

u Min: 8.6 ft
u Max: 22.8 ft
u Final: 19.6 ft

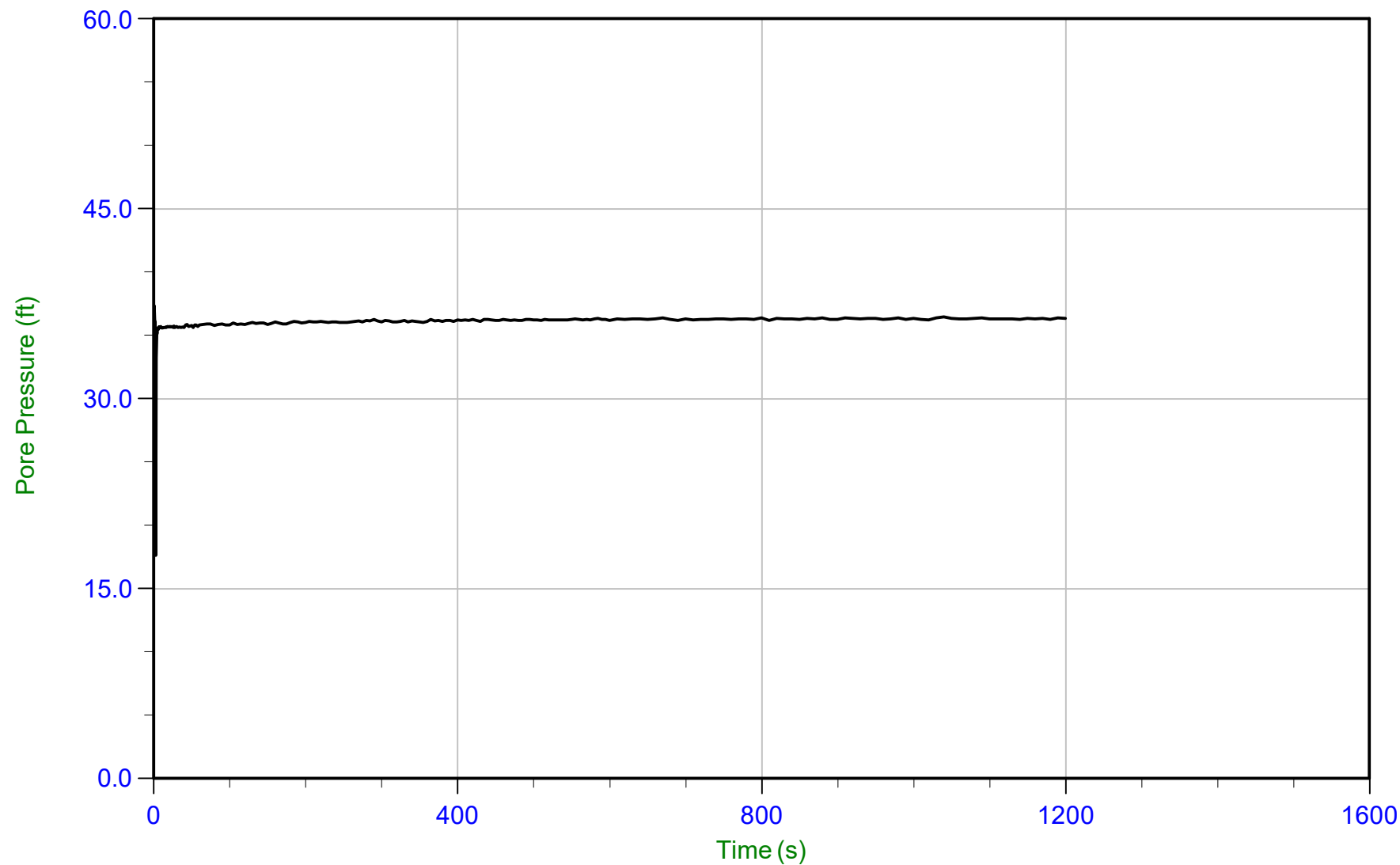
WT: -3.879 m / -12.725 ft
Ueq: 19.5 ft



Greenfields

Job No: 22-59-24503
Date: 20-Jul-2022 11:33:05
Site: Willamette Overwater

Sounding: WC-CP007
Cone: EC730 Area=15 cm²



Trace Summary:

Filename: 22-59-24503_CP07.ppd2
Depth: 3.225 m / 10.581 ft
Duration: 1200.0 s

u Min: 17.6 ft
u Max: 37.3 ft
u Final: 36.3 ft

WT: -7.841 m / -25.725 ft
Ueq: 36.3 ft



Greenfield Geotechnical

EXPLORATION WC-T013

PAGE 1 OF 2

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

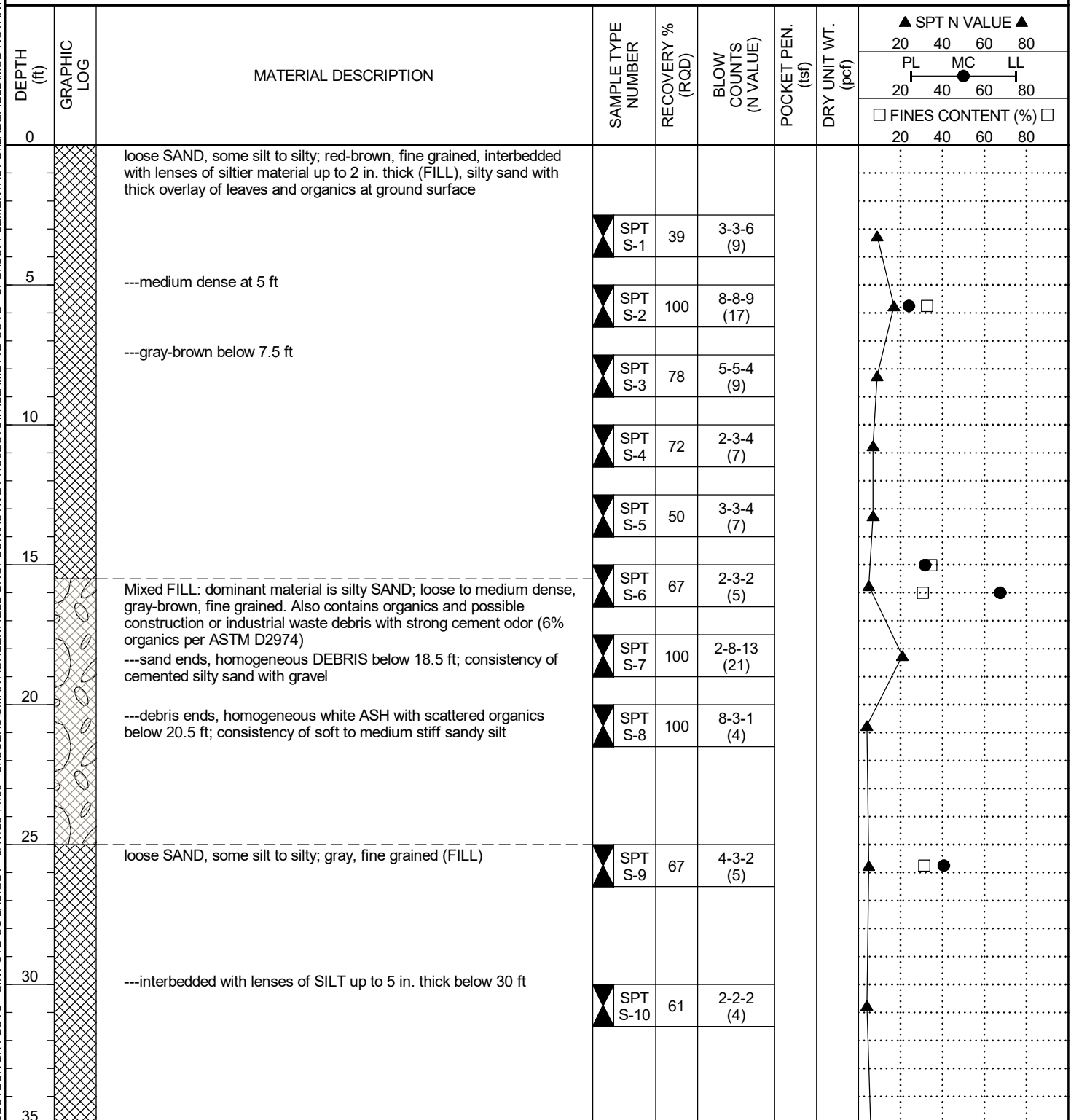
PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland ORDATE STARTED 11/16/22 COMPLETED 11/16/22GROUND ELEVATION 43.5 ft HOLE SIZE 4.2 inchesDRILLING CONTRACTOR Holt Services, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Mud RotaryAT TIME OF DRILLING ---LOGGED BY M. Banks CHECKED BY _____AT END OF DRILLING ---NOTES Mobile B-57 track-mounted drill rigAFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMARTGREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE_MUD_2022.GPJ



(Continued Next Page)



CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲	
								20 40 60 80	20 40 60 80
								PL MC LL	□ FINES CONTENT (%) □
35								20 40 60 80	20 40 60 80
		loose SAND, some silt to silty; gray, fine grained, interbedded with lenses of SILT up to 5 in. thick (FILL)	SPT S-11	83	1-3-3 (6)				
40									
		soft SILT, some fine-grained sand; gray-brown, low to medium plasticity, scattered organic debris, strong hydrocarbon odor (Recent Fine Alluvium)	SPT S-12	100	0-1-2 (3)				
45									
		---plentiful wood debris below 45 ft (14% organics per ASTM D2974)	SPT S-13	100	2-1-3 (4)				
50									
		medium dense, silty SAND; gray, fine grained (Recent Sandy Alluvium)	SPT S-14	83	5-5-6 (11)				

Bottom of exploration at 51.5 feet.



Greenfield Geotechnical

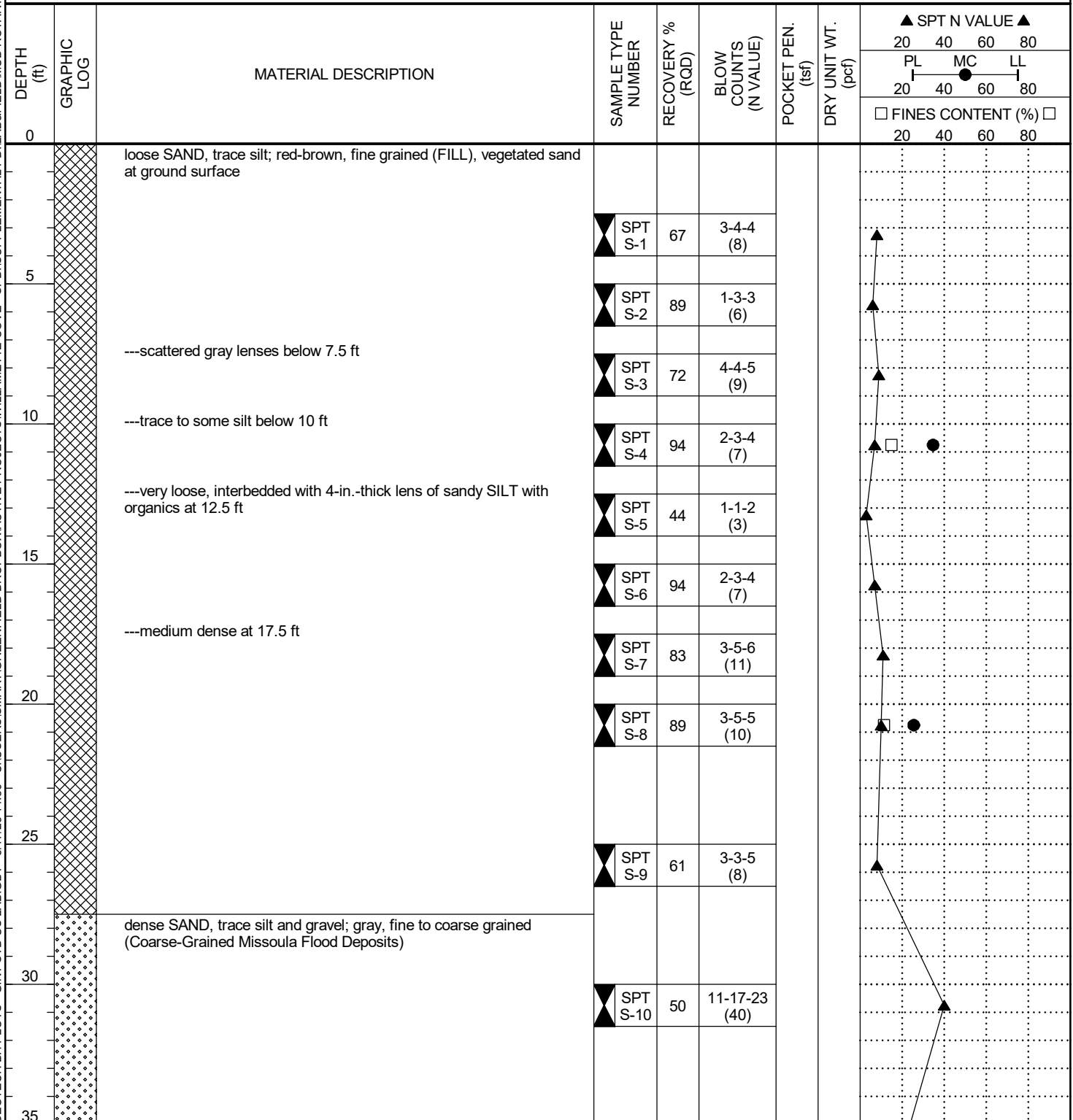
EXPLORATION WC-T014

PAGE 1 OF 2

CLIENT GSI Water Solutions, Inc.
PROJECT NUMBER _____
DATE STARTED 11/15/22 COMPLETED 11/15/22
DRILLING CONTRACTOR Holt Services, Inc.
DRILLING METHOD Mud Rotary
LOGGED BY M. Banks CHECKED BY _____
NOTES Mobile B-57 track-mounted drill rig

PROJECT NAME Willamette Cove Supplemental PDI
PROJECT LOCATION Willamette Cove, Portland OR
GROUND ELEVATION 36.5 ft HOLE SIZE 4.2 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE MUD 2022.GPJ



(Continued Next Page)



CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲	
								20 40 60 80	
								PL MC LL	□ FINES CONTENT (%) □
35		medium dense SAND, trace silt and gravel; gray, fine to coarse grained (Coarse-Grained Missoula Flood Deposits)	SPT S-11	78	10-10-11 (21)				
40		---medium dense to dense below 40 ft	SPT S-12	89	11-14-16 (30)				
45			SPT S-13	83	13-16-17 (33)				
50			SPT S-14	78	15-14-15 (29)				

Bottom of exploration at 51.5 feet.



Greenfield Geotechnical

EXPLORATION WC-T015

PAGE 1 OF 3

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

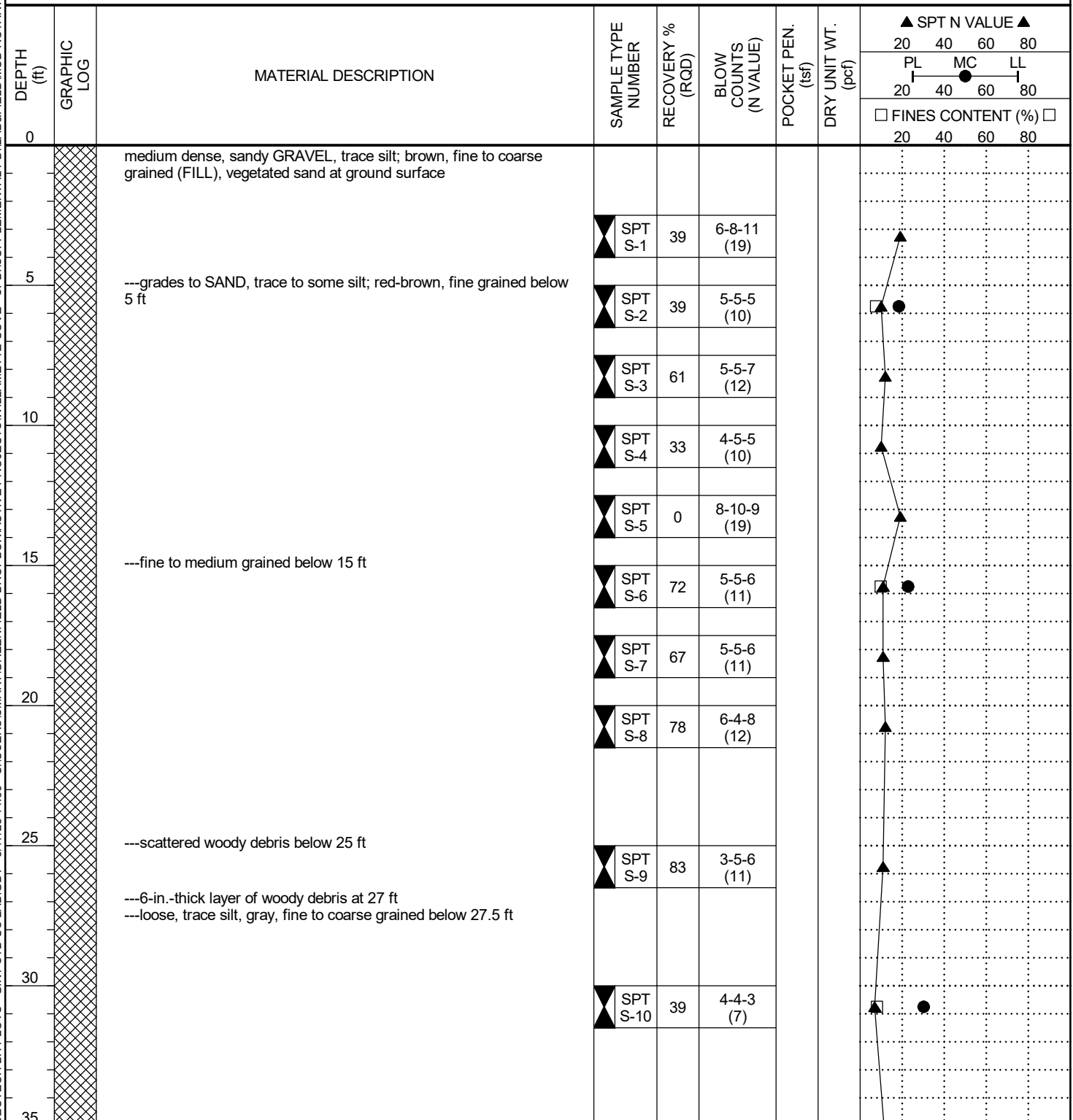
PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland ORDATE STARTED 11/14/22 COMPLETED 11/14/22GROUND ELEVATION 34 ft HOLE SIZE 4.2 inchesDRILLING CONTRACTOR Holt Services, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Mud RotaryAT TIME OF DRILLING ---LOGGED BY M. Banks CHECKED BY _____AT END OF DRILLING ---NOTES Mobile B-57 track-mounted drill rigAFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE MUD 2022.GPJ



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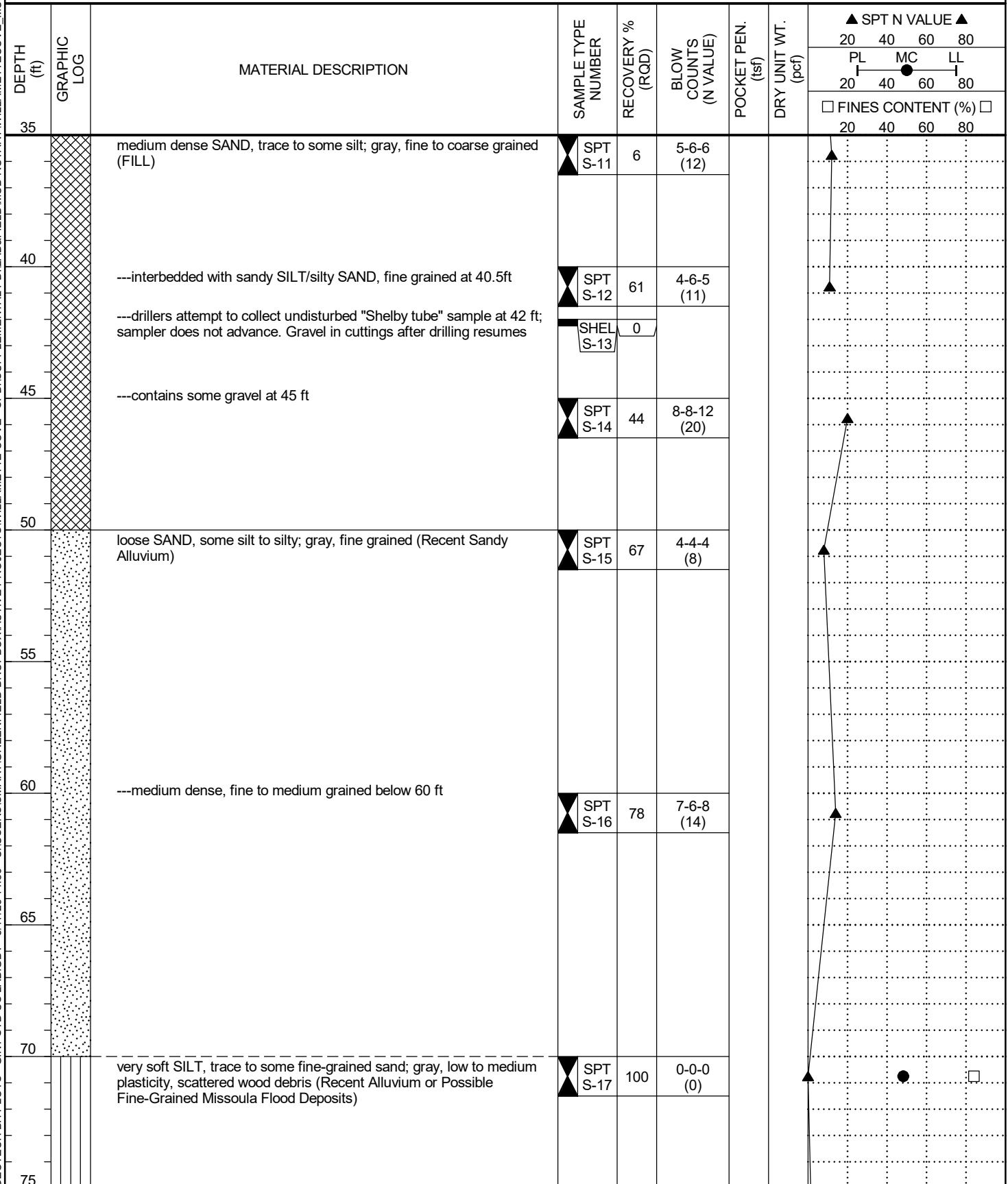
CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTE COVE MUD 2022.GPJ



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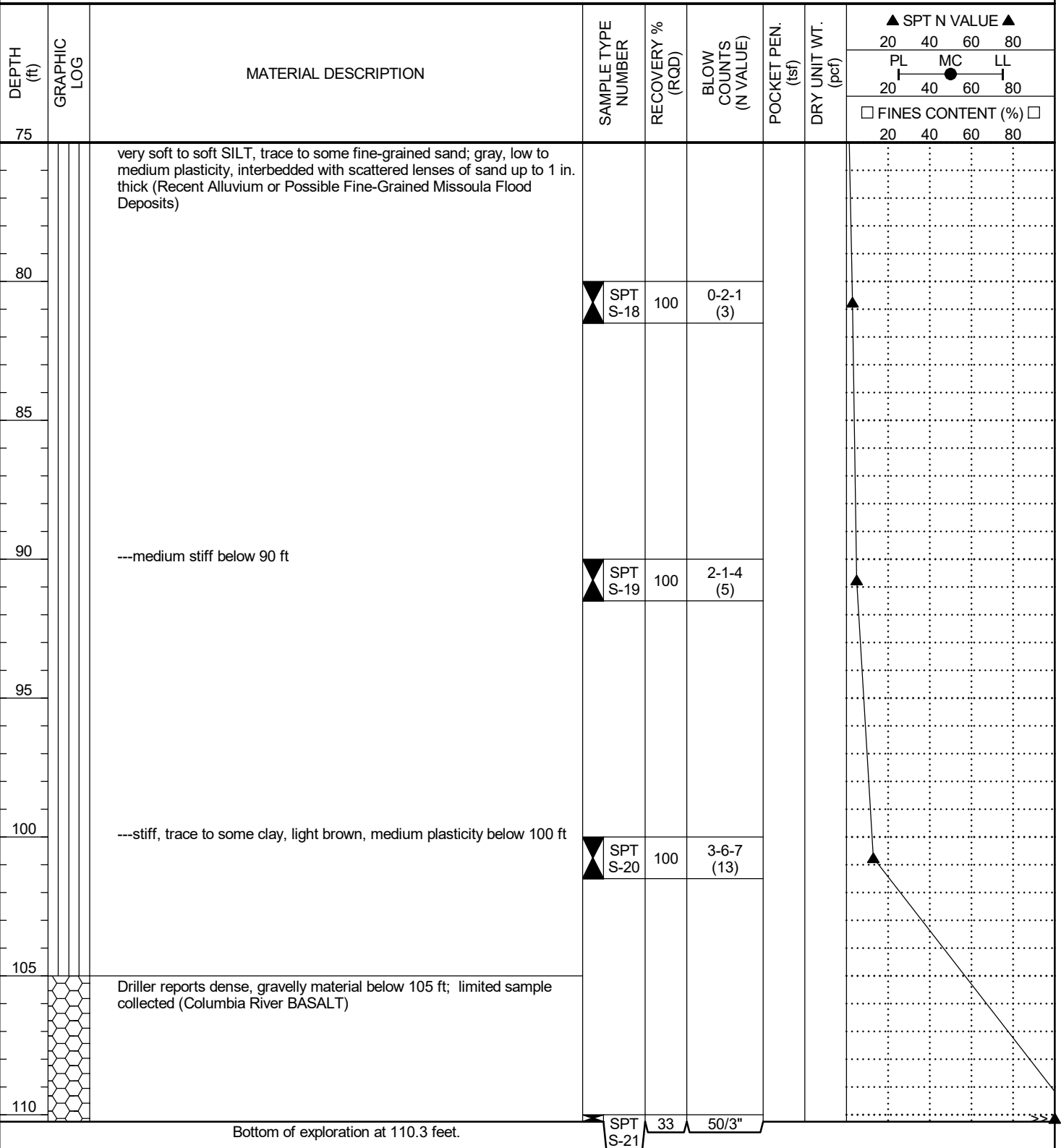


CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR



CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland ORDATE STARTED 11/16/22COMPLETED 11/17/22GROUND ELEVATION 31.5 ftHOLE SIZE 4.2 inchesDRILLING CONTRACTOR Holt Services, Inc.

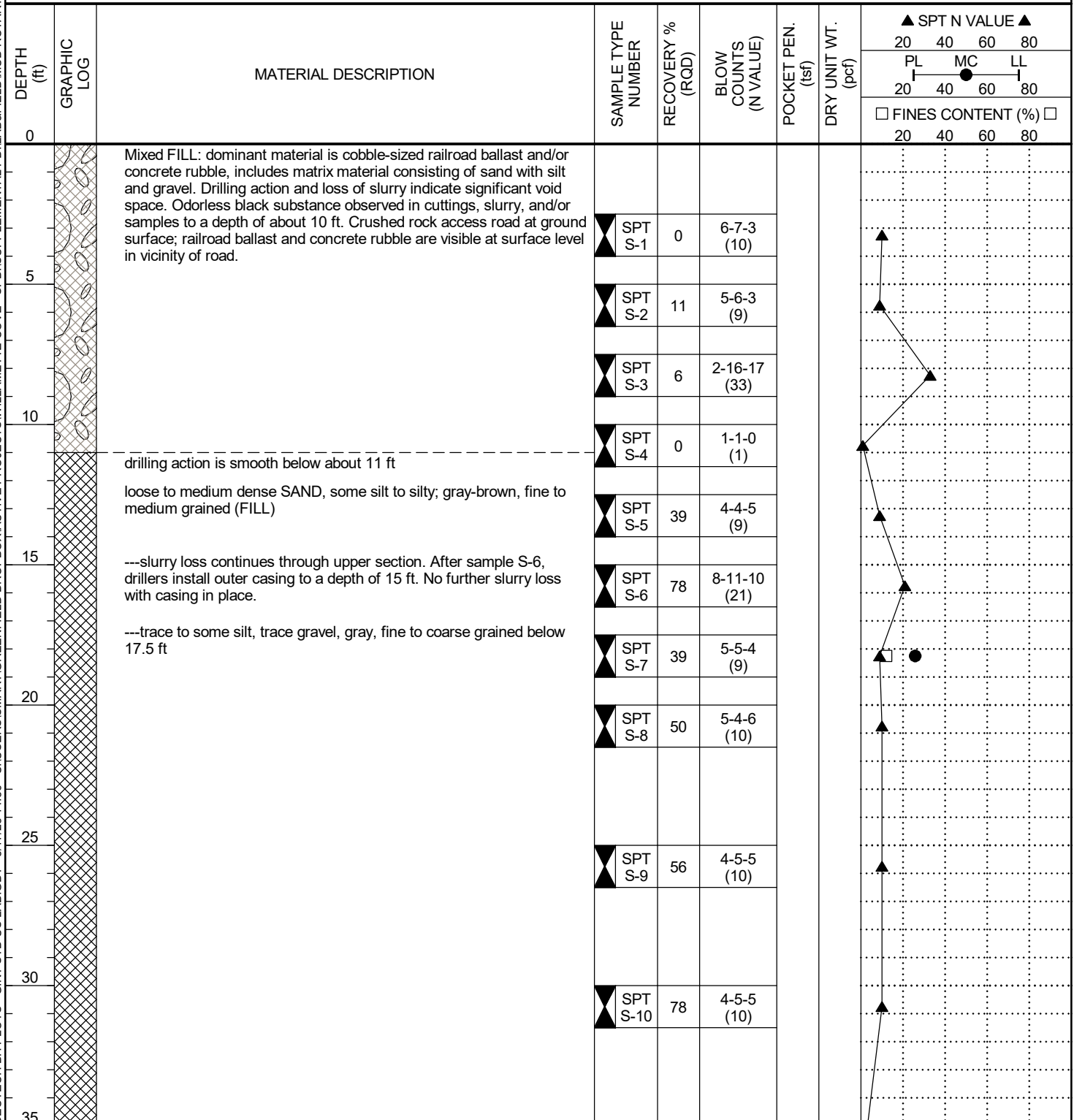
GROUND WATER LEVELS:

DRILLING METHOD Mud RotaryAT TIME OF DRILLING ---LOGGED BY M. Banks

CHECKED BY _____

AT END OF DRILLING ---NOTES Mobile B-57 track-mounted drill rigAFTER DRILLING ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/17/23 14:56 - C:\USERS\SMART\GREENFIELD DROPBOX\ACTIVE PROJECTS\WILLAMETTE COVE - SPDISUPPLEMENTAL PDI\LAB&FIELD\MUD ROTARY\WILLAMETTECOVE_MUD_2022.GPJ



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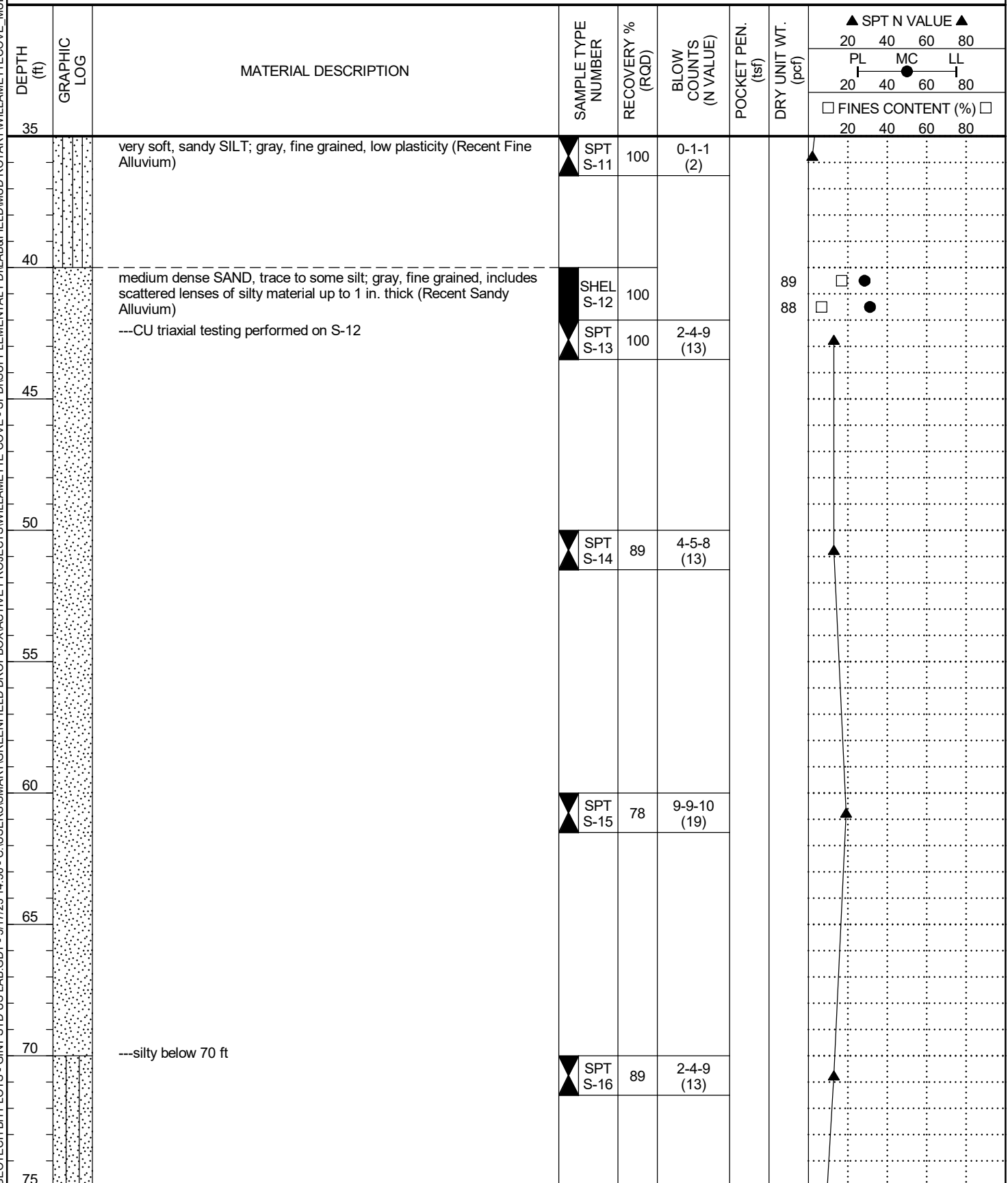
CLIENT GSI Water Solutions, Inc.

PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER

PROJECT LOCATION Willamette Cove, Portland OR

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(Continued Next Page)

CLIENT GSI Water Solutions, Inc.PROJECT NAME Willamette Cove Supplemental PDI

PROJECT NUMBER _____

PROJECT LOCATION Willamette Cove, Portland OR

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20 40 60 80			
								PL MC LL			
								20 40 60 80			
75								□ FINES CONTENT (%) □			
								20 40 60 80			
		medium dense silty SAND; gray, fine grained (Recent Sandy Alluvium)									
80		medium stiff, sandy SILT; gray, low to medium plasticity, fine-grained sand (Recent Sandy Alluvium)	▲ SPT S-17	100	3-1-4 (5)						
85											
90		--stiff, interbedded with 7-in.-thick lens of SAND with some silt at 90 ft	▲ SPT S-18	89	6-12-6 (18)						
95											
100			▲ SPT S-19	100	1-2-3 (5)						

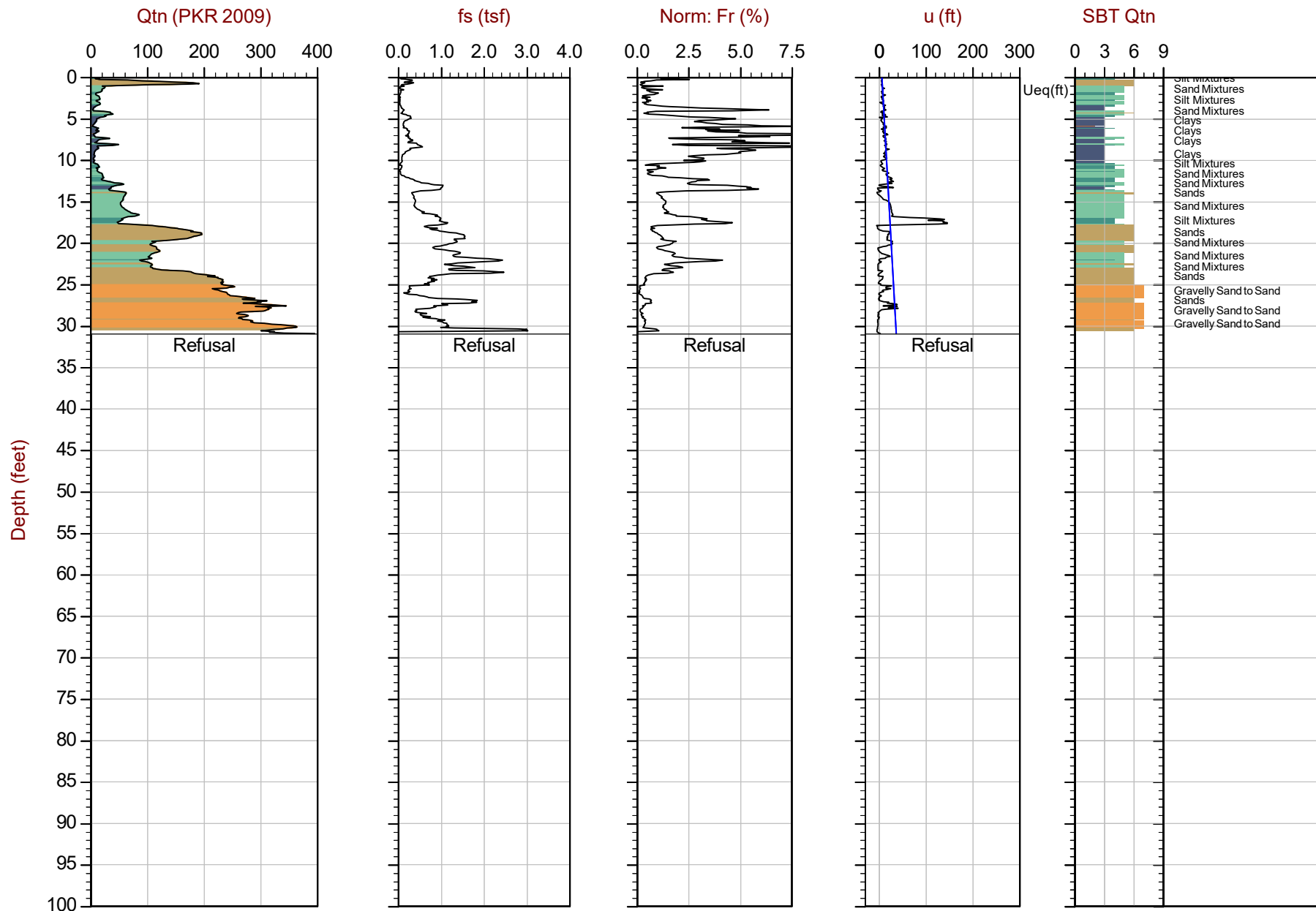
Bottom of exploration at 101.5 feet.



Greenfields

Job No: 22-59-24503
Date: 2022-07-18 09:49
Site: Willamette Overwater

Sounding: WC-CP001
Cone: 730:T1500F15U35



Max Depth: 9.425 m / 30.92 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP01.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58291 Long: 122.75596

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

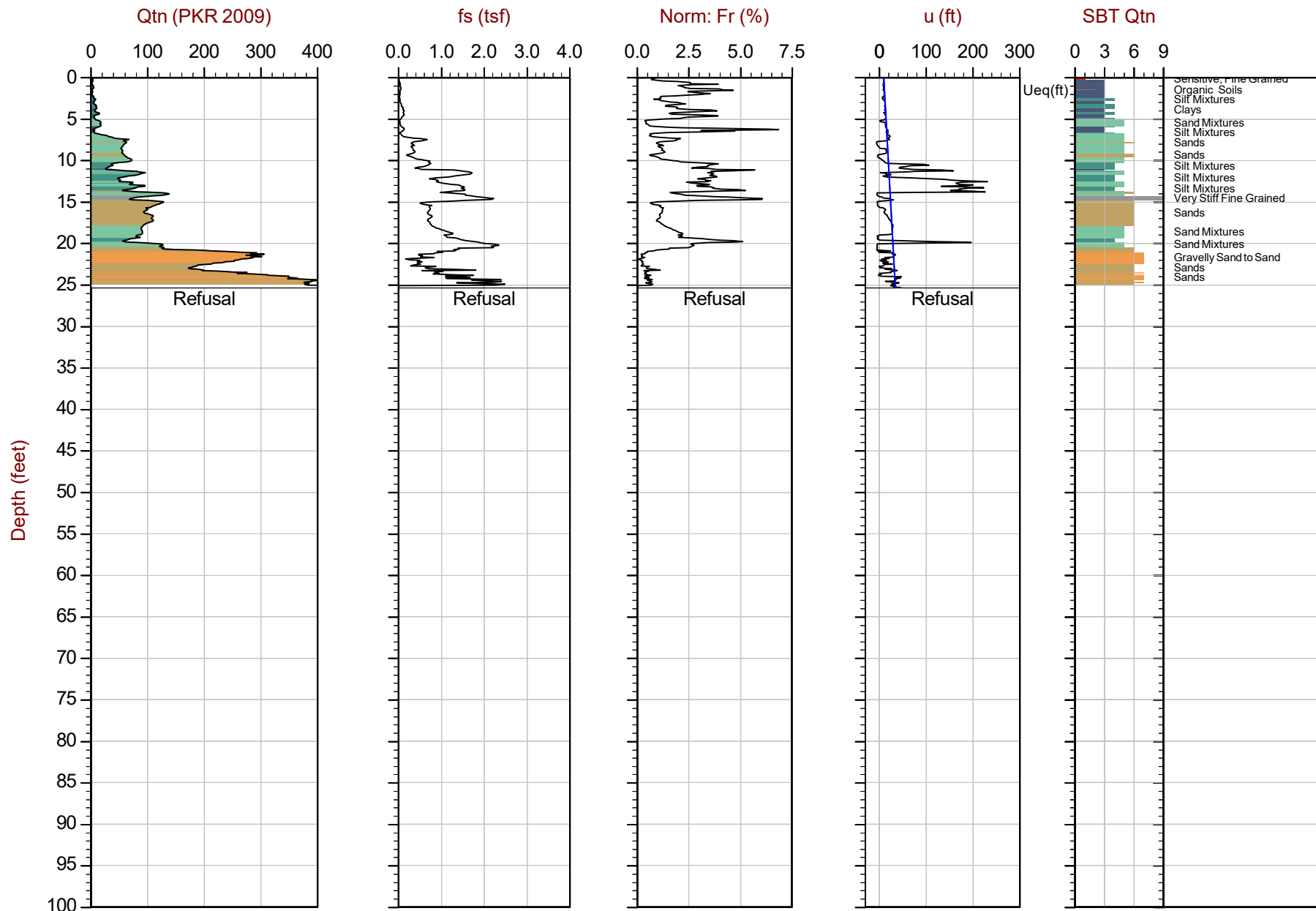
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-19 05:44
Site: Willamette Overwater

Sounding: WC-CP002
Cone: 730:T1500F15U35



Max Depth: 7.725 m / 25.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP02.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58218 Long: 122.75436

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

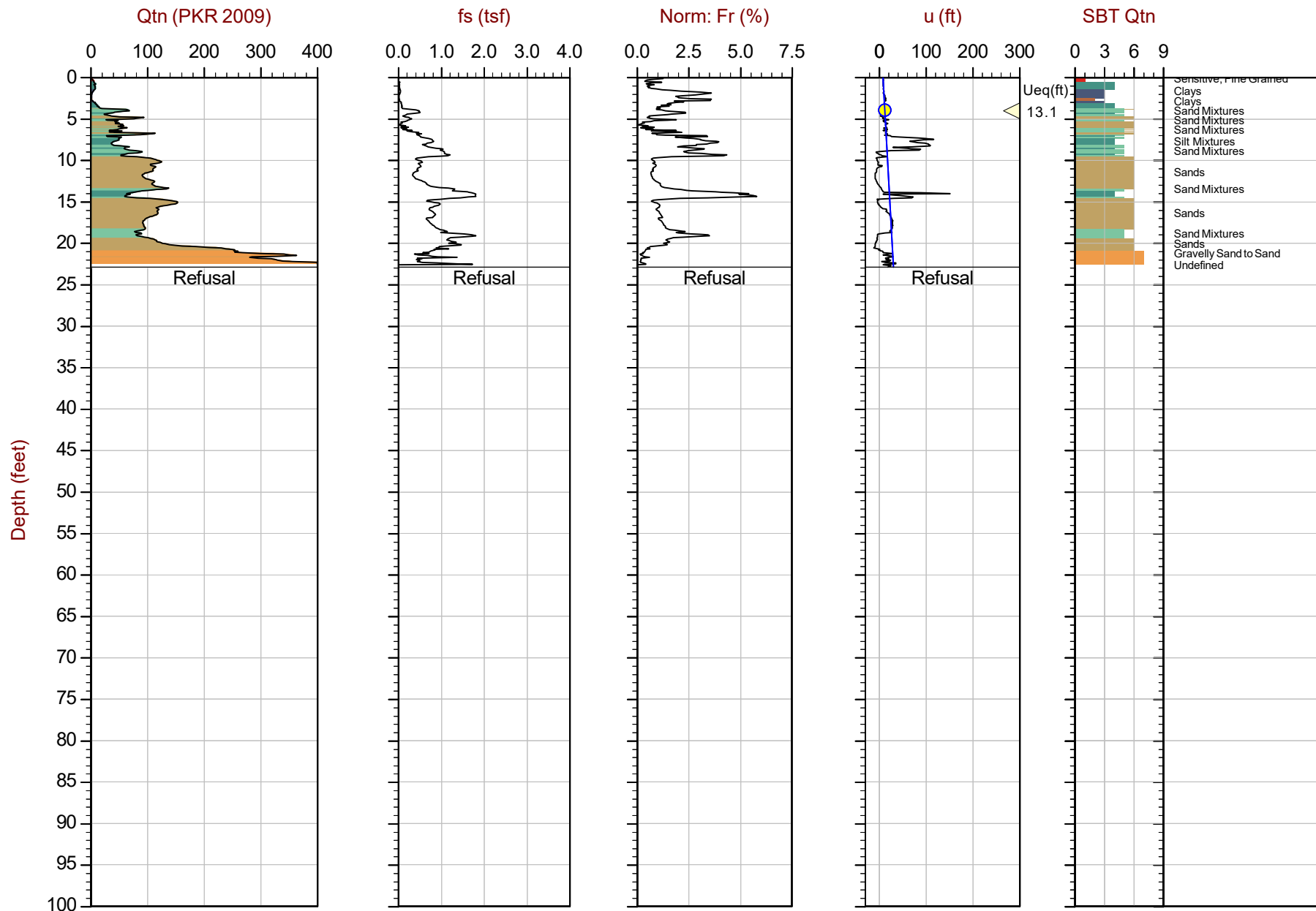
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-18 12:40
Site: Willamette Overwater

Sounding: WC-CP003
Cone: 730:T1500F15U35



Max Depth: 6.975 m / 22.88 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP03.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58253 Long: 122.75516

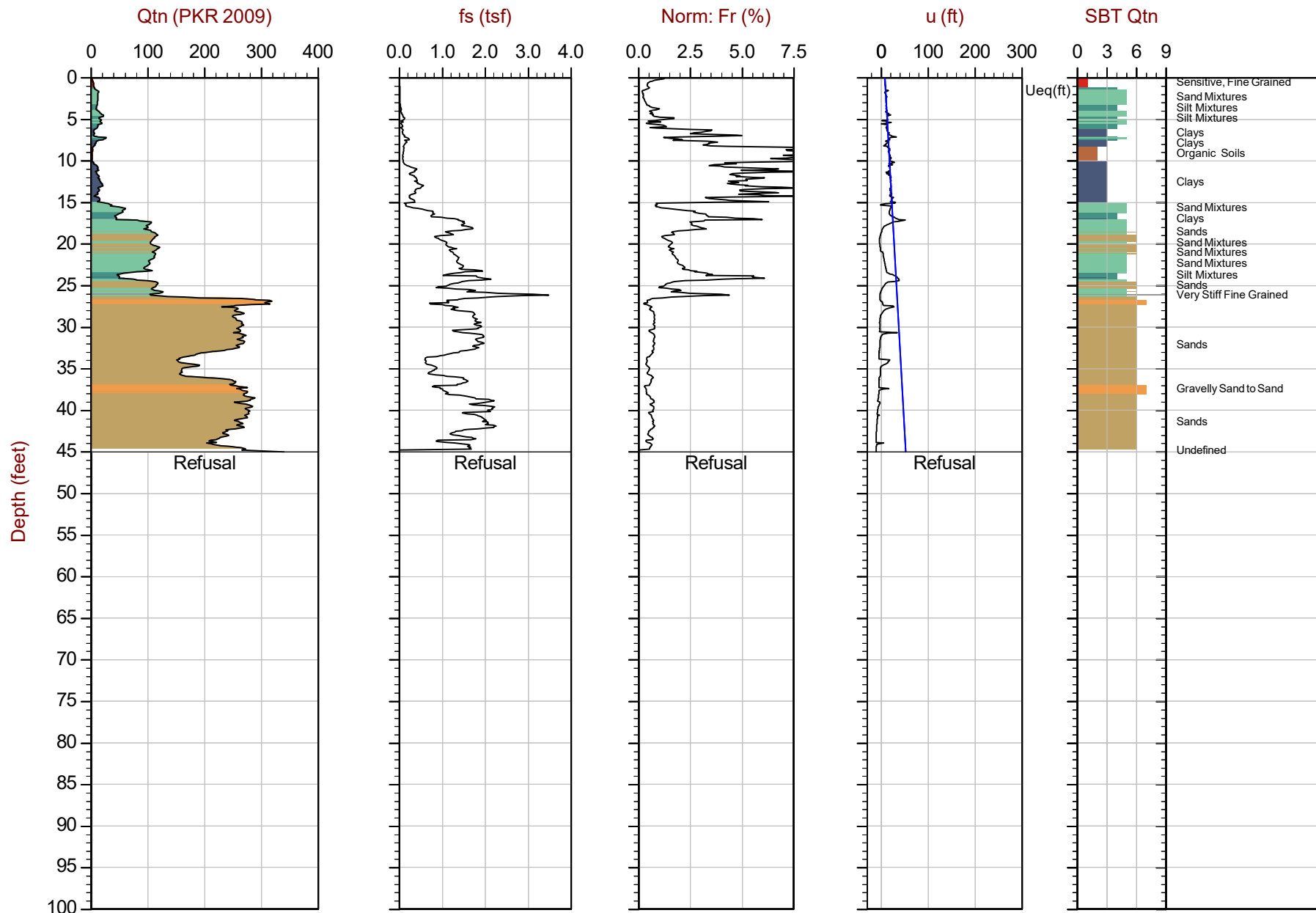
Yellow circle: Equilibrium Pore Pressure (Ueq)
Blue circle: Assumed Ueq
Yellow triangle: Dissipation, Ueq achieved
Purple triangle: Dissipation, Ueq not achieved
Blue line: Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-19 07:59
Site: Willamette Overwater

Sounding: WC-CP004
Cone: 730:T1500F15U35



Max Depth: 13.725 m / 45.03 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP04.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58185 Long: 122.75346

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

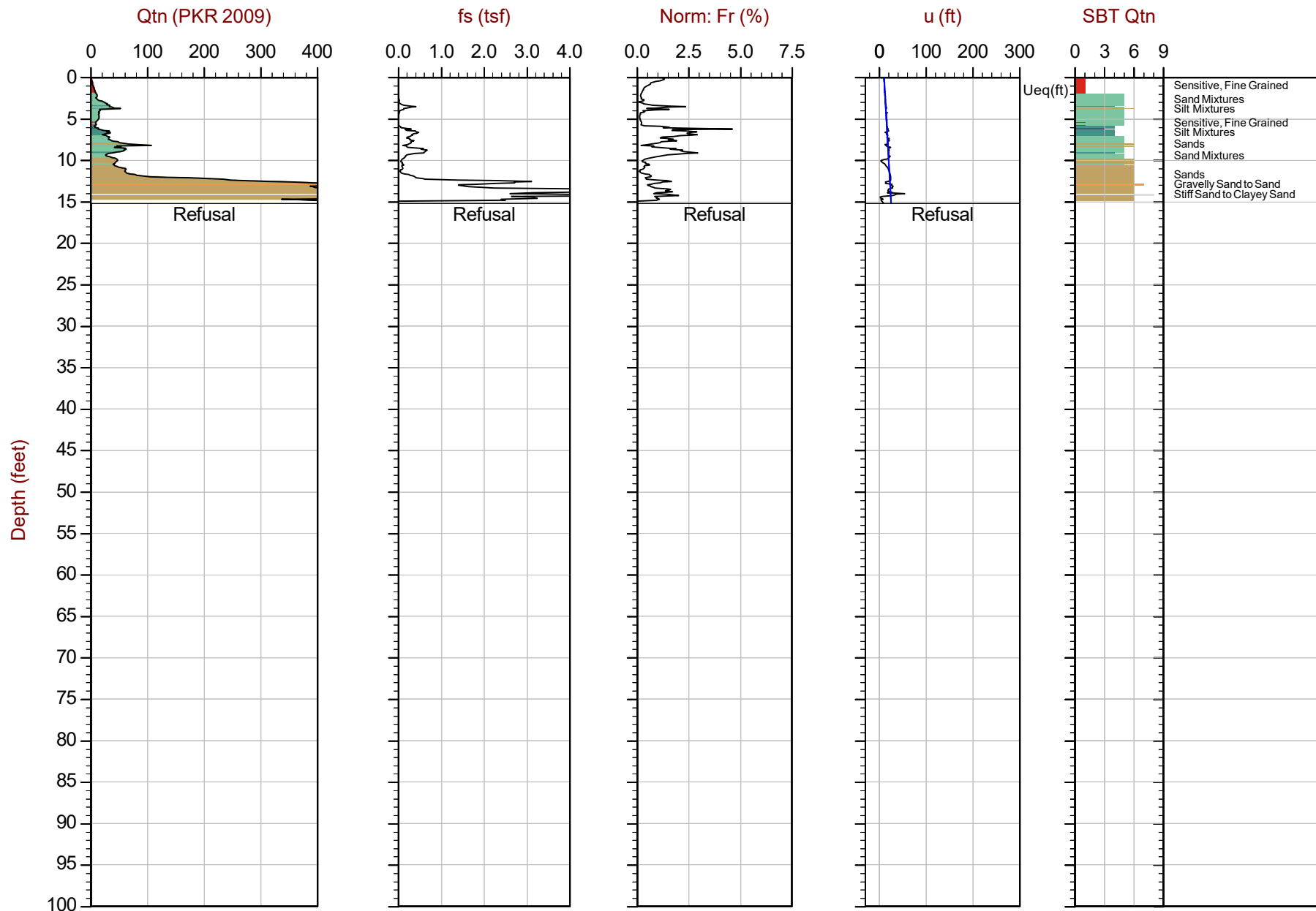
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-19 10:19
Site: Willamette Overwater

Sounding: WC-CP005
Cone: 730:T1500F15U35



Max Depth: 4.625 m / 15.17 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP05.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58127 Long: 122.75149

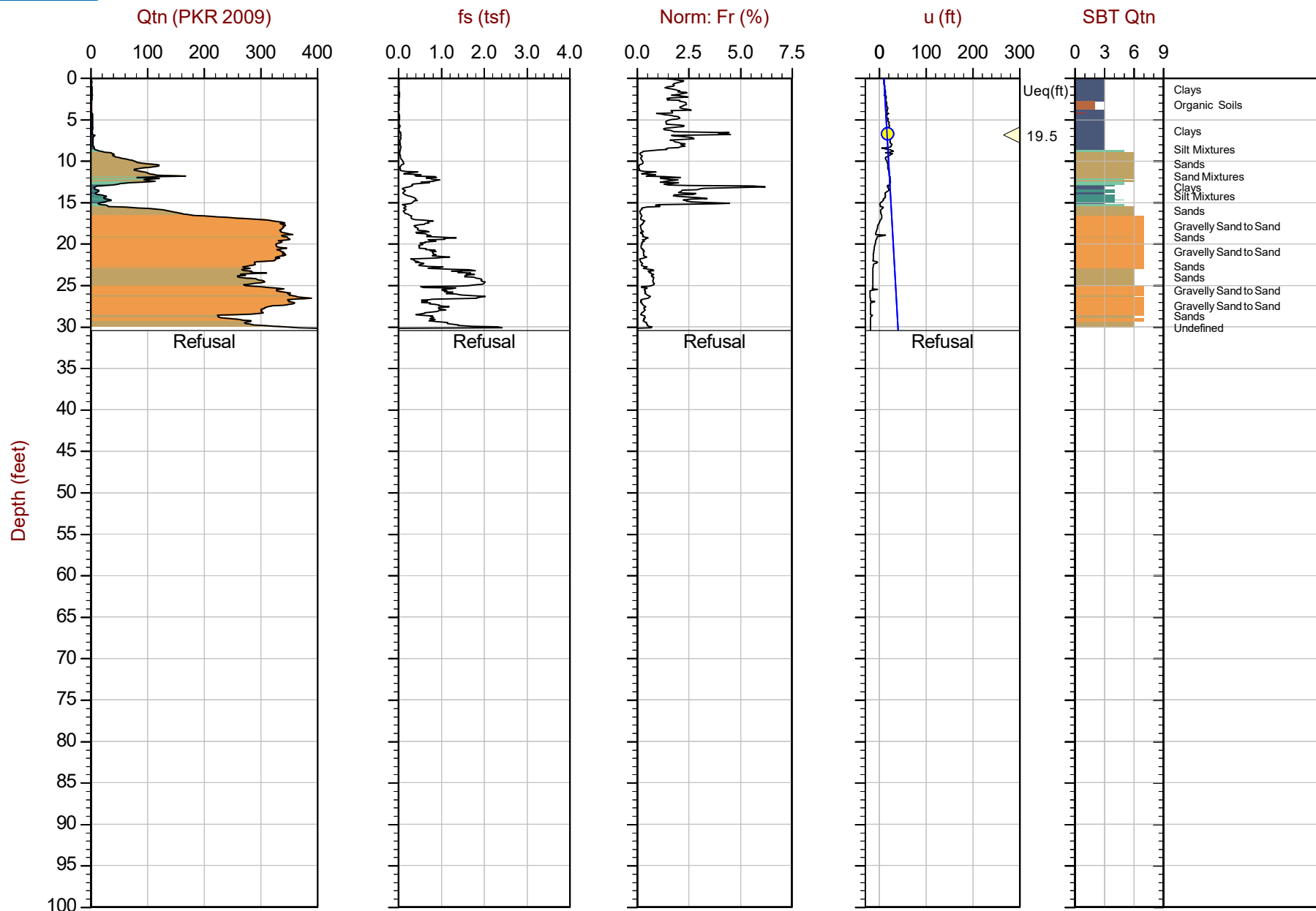
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-20 06:52
Site: Willamette Overwater

Sounding: WC-CP006
Cone: 730:T1500F15U35



Max Depth: 9.275 m / 30.43 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP06.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58098 Long: 122.74954

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line

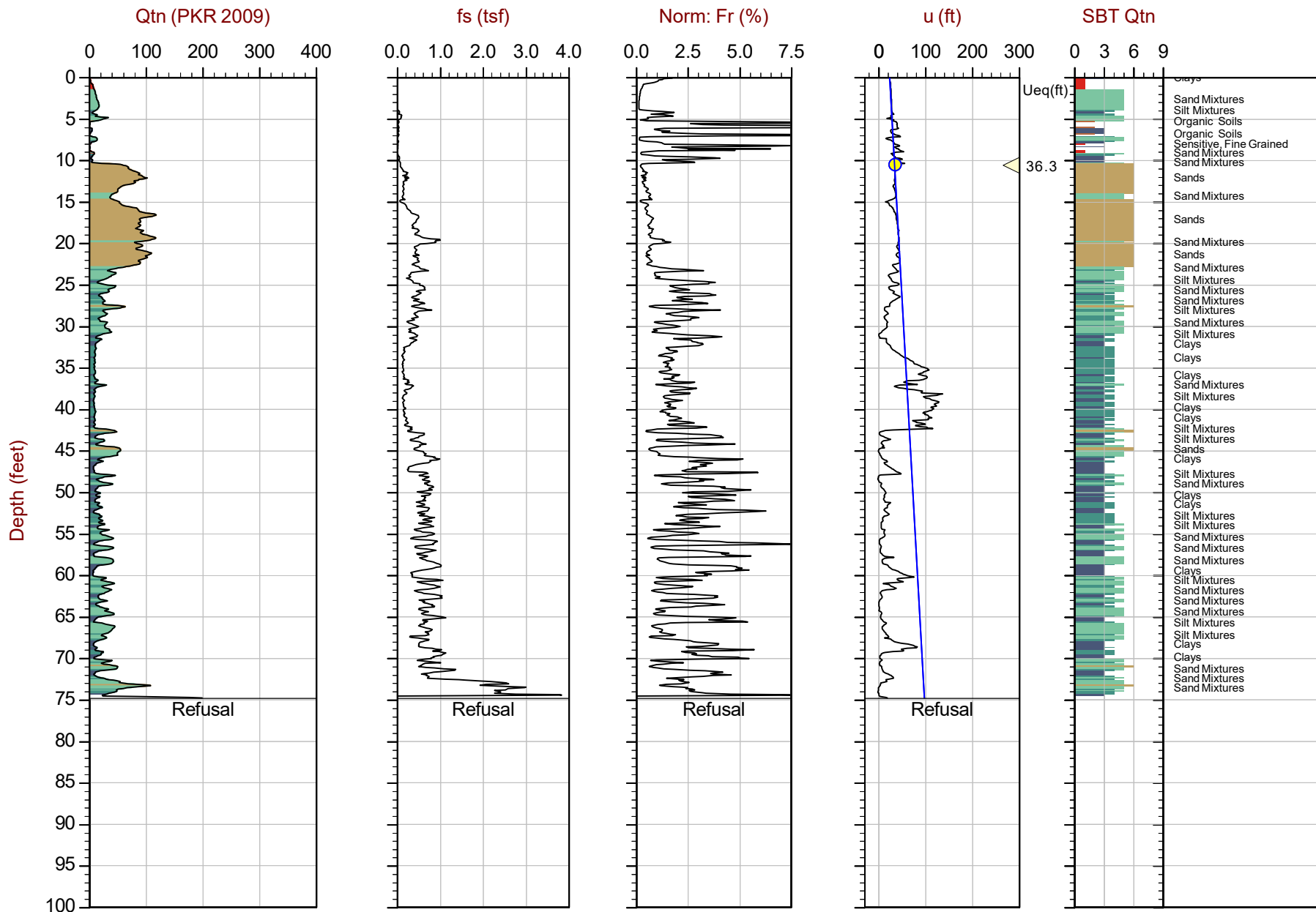
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-20 11:33
Site: Willamette Overwater

Sounding: WC-CP007
Cone: 730:T1500F15U35



Max Depth: 22.800 m / 74.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP07.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58075 Long: 122.74682

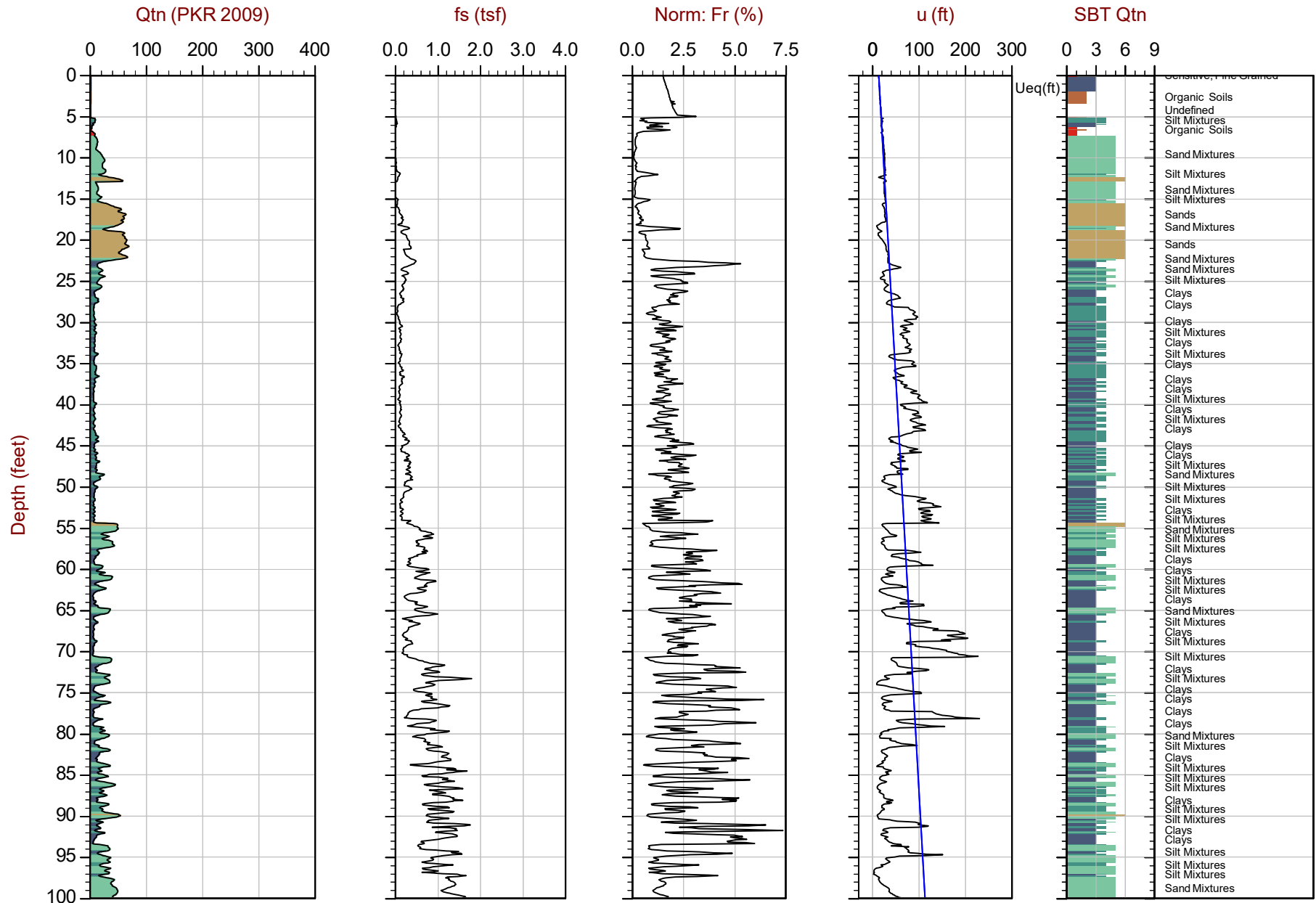
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ◀ Dissipation, Ueq achieved ▶ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-21 10:39
Site: Willamette Overwater

Sounding: WC-CP008
Cone: 730:T1500F15U35



Max Depth: 50.450 m / 165.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58053 Long: 122.74531

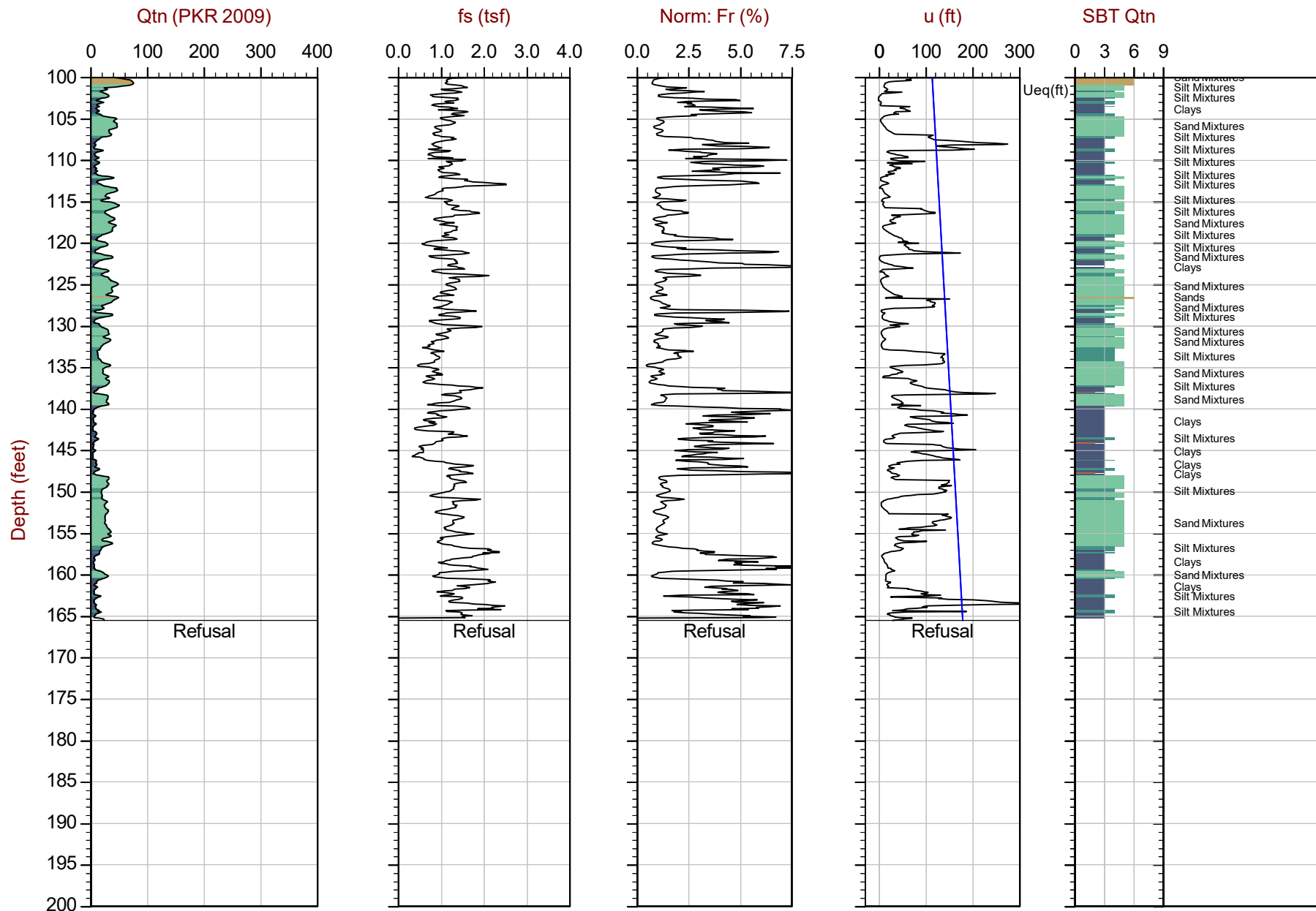
● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-21 10:39
Site: Willamette Overwater

Sounding: WC-CP008
Cone: 730:T1500F15U35



Max Depth: 50.450 m / 165.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP08.COR
Unit Wt: SBTQtn(PKR2009)

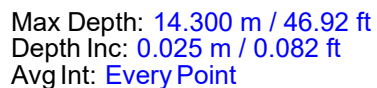
SBT: Robertson, 2009 and 2010
Coords: Lat: 45.58053 Long: 122.74531

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Job No: 22-59-24503
Date: 2022-07-20 14:46
Site: Willamette Overwater

Sounding: WC-CP009
Cone: 730:T1500F15U35



File: 22-59-24503_CP09.COR
Unit Wt: SBTQtn (PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.57979 Long: 122.74570

● Equilibrium Pore Pressure (Ueq)
 ● Assumed Ueq
 ◀ Dissipation, Ueq achieved
 ◀ Dissipation, Ueq not achieved
 — Hydrostatic Line

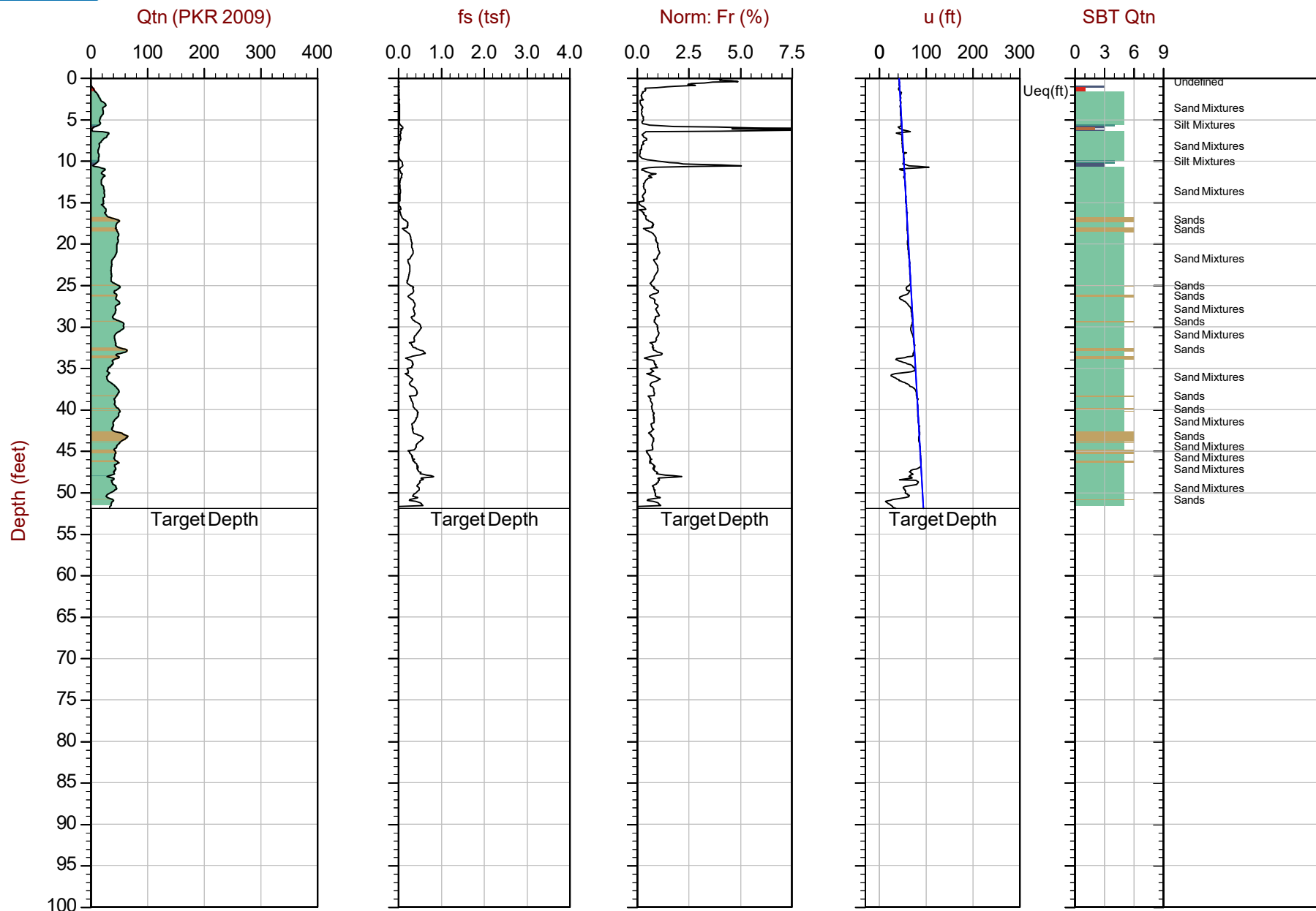
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Greenfields

Job No: 22-59-24503
Date: 2022-07-21 07:19
Site: Willamette Overwater

Sounding: WC-CP010
Cone: 730:T1500F15U35



Max Depth: 15.825 m / 51.92 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 22-59-24503_CP10.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 45.57954 Long: 122.74818

● Equilibrium Pore Pressure (Ueq) ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Hydrostatic Line
The reported coordinates were acquired from hand-held GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Job No: 22-59-24503
Client: Greenfield Geotechnical
Project: Willamette Oewater
Start Date: 18-Jul-2022
End Date: 22-Jul-2022

CPT_u PORE PRESSURE DISSIPATION SUMMARY

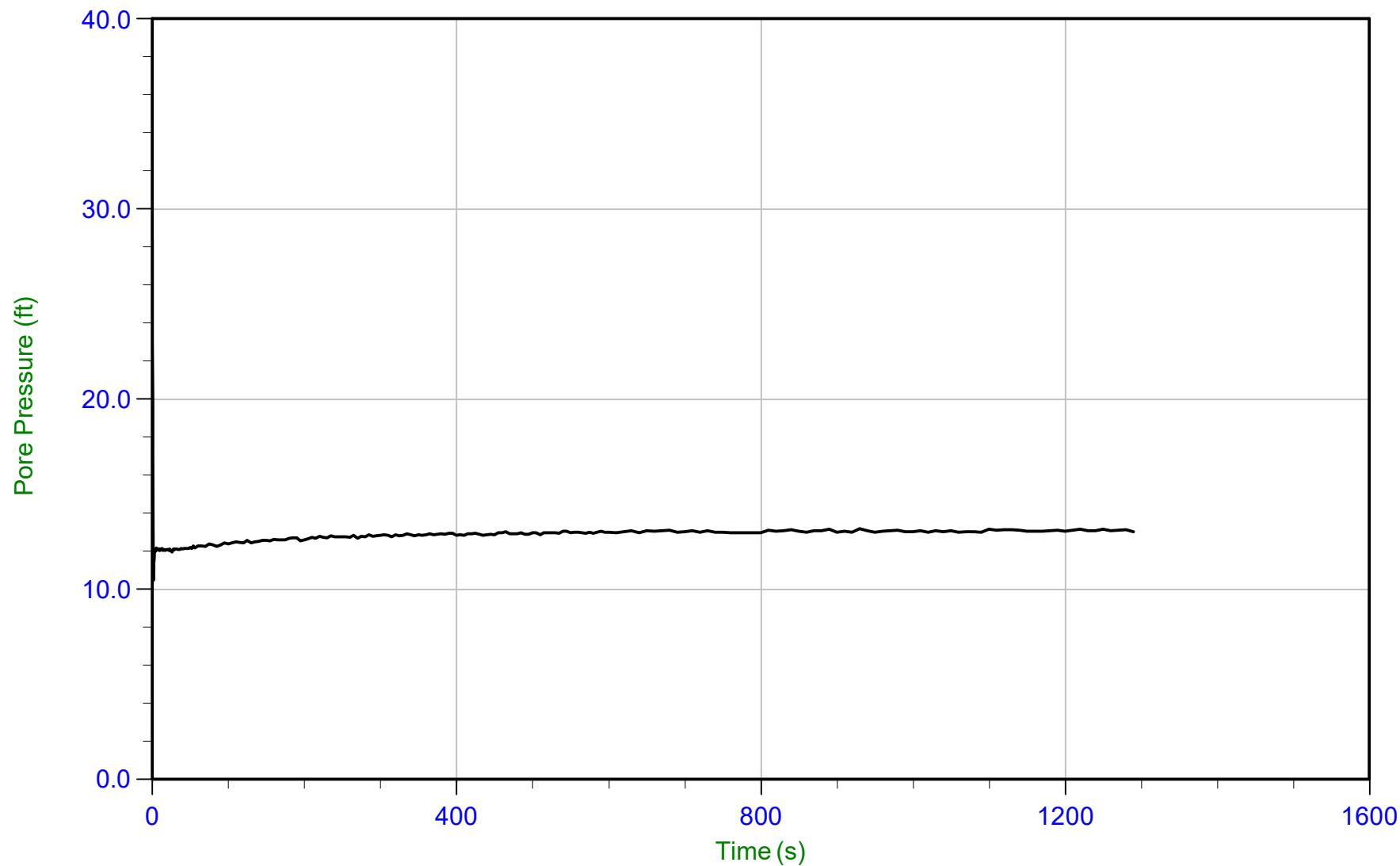
Sounding ID	File Name	Cone Area (cm ²)	Duration (s)	Test Depth (ft)	Estimated Equilibrium Pore Pressure U _{eq} (ft)	Calculated Phreatic Surface (ft)
WC-CP003	22-59-24503_CP03.ppd2	15.0	1290	4.0	13.1	-9.1
WC-CP006	22-59-24503_CP06.ppd2	15	4680	6.8	19.5	-12.7
WC-CP007	22-59-24503_CP07.ppd2	15	1200	10.6	36.3	-25.7
Total Duration			119.5 mins			



Greenfields

Job No: 22-59-24503
Date: 18-Jul-2022 12:40:00
Site: Willamette Overwater

Sounding: WC-CP003
Cone: EC730 Area=15 cm²



Trace Summary:

Filename: 22-59-24503_CP03.ppd2
Depth: 1.225 m / 4.019 ft
Duration: 1290.0 s

u Min: 10.5 ft
u Max: 28.4 ft
u Final: 13.0 ft

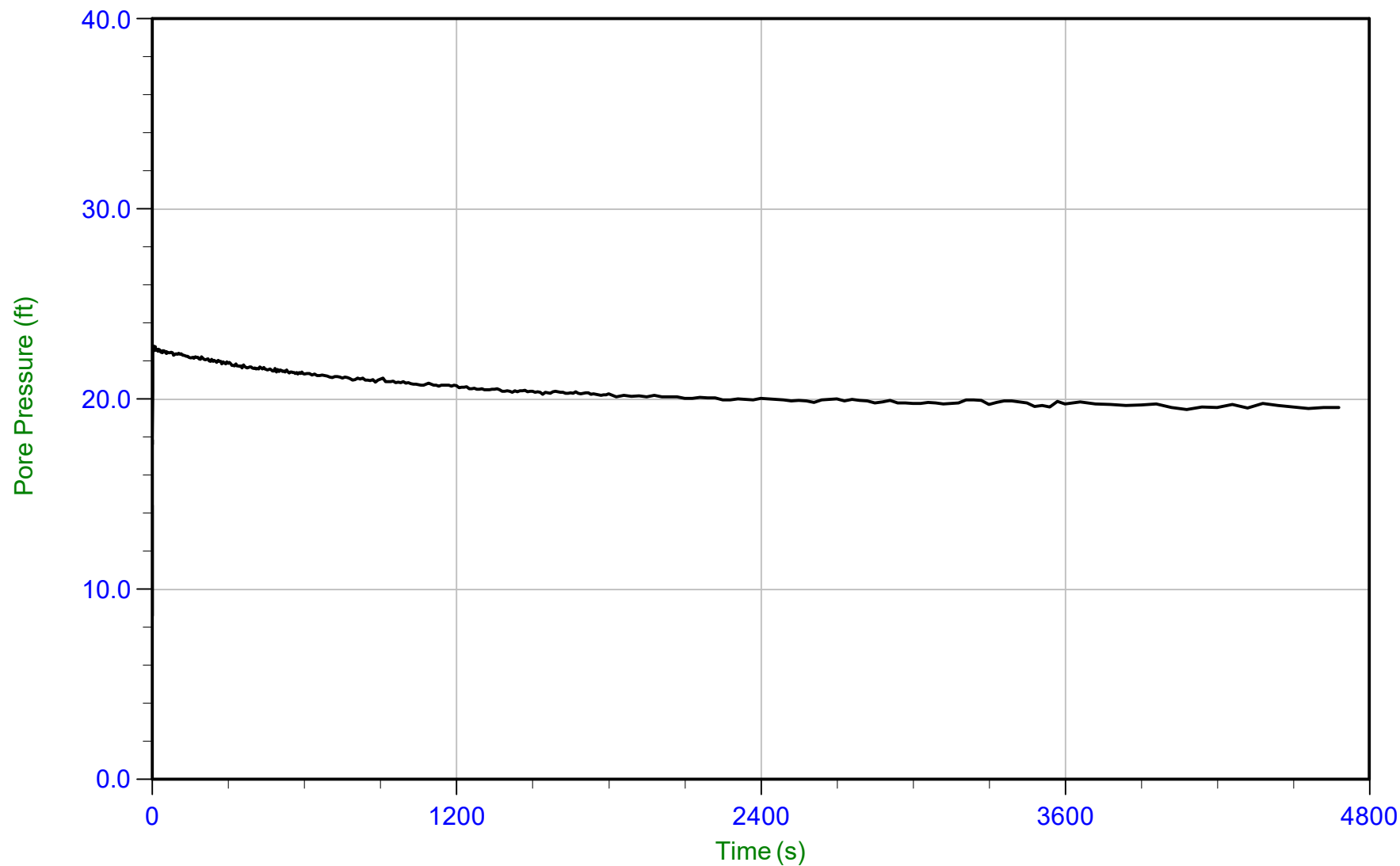
WT: -2.761 m / -9.059 ft
Ueq: 13.1 ft



Greenfields

Job No: 22-59-24503
Date: 20-Jul-2022 06:52:20
Site: Willamette Overwater

Sounding: WC-CP006
Cone: EC730 Area=15 cm²



Trace Summary:

Filename: 22-59-24503_CP06.ppd2
Depth: 2.075 m / 6.808 ft
Duration: 4680.0 s

u Min: 8.6 ft
u Max: 22.8 ft
u Final: 19.6 ft

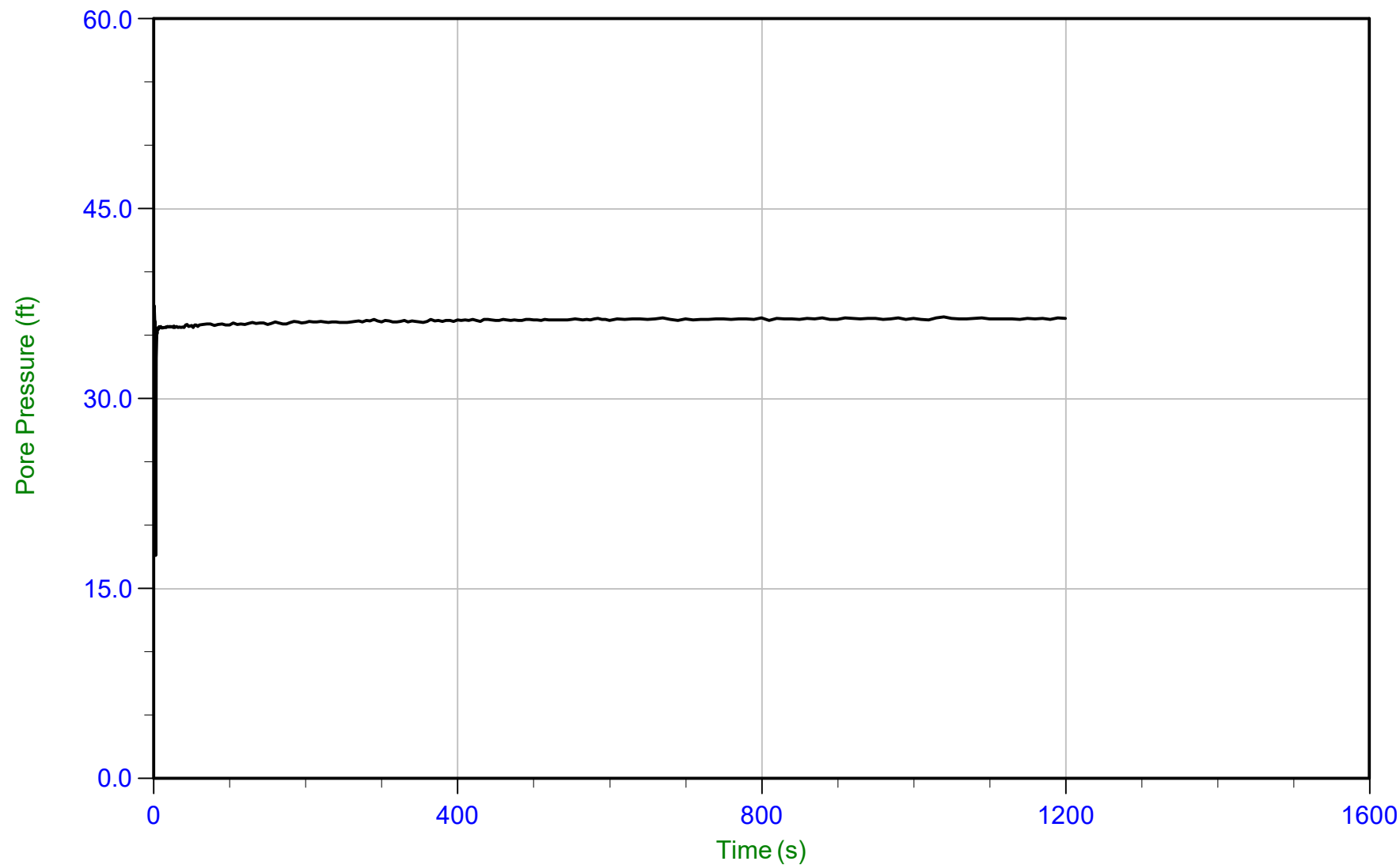
WT: -3.879 m / -12.725 ft
Ueq: 19.5 ft



Greenfields

Job No: 22-59-24503
Date: 20-Jul-2022 11:33:05
Site: Willamette Overwater

Sounding: WC-CP007
Cone: EC730 Area=15 cm²



Trace Summary:

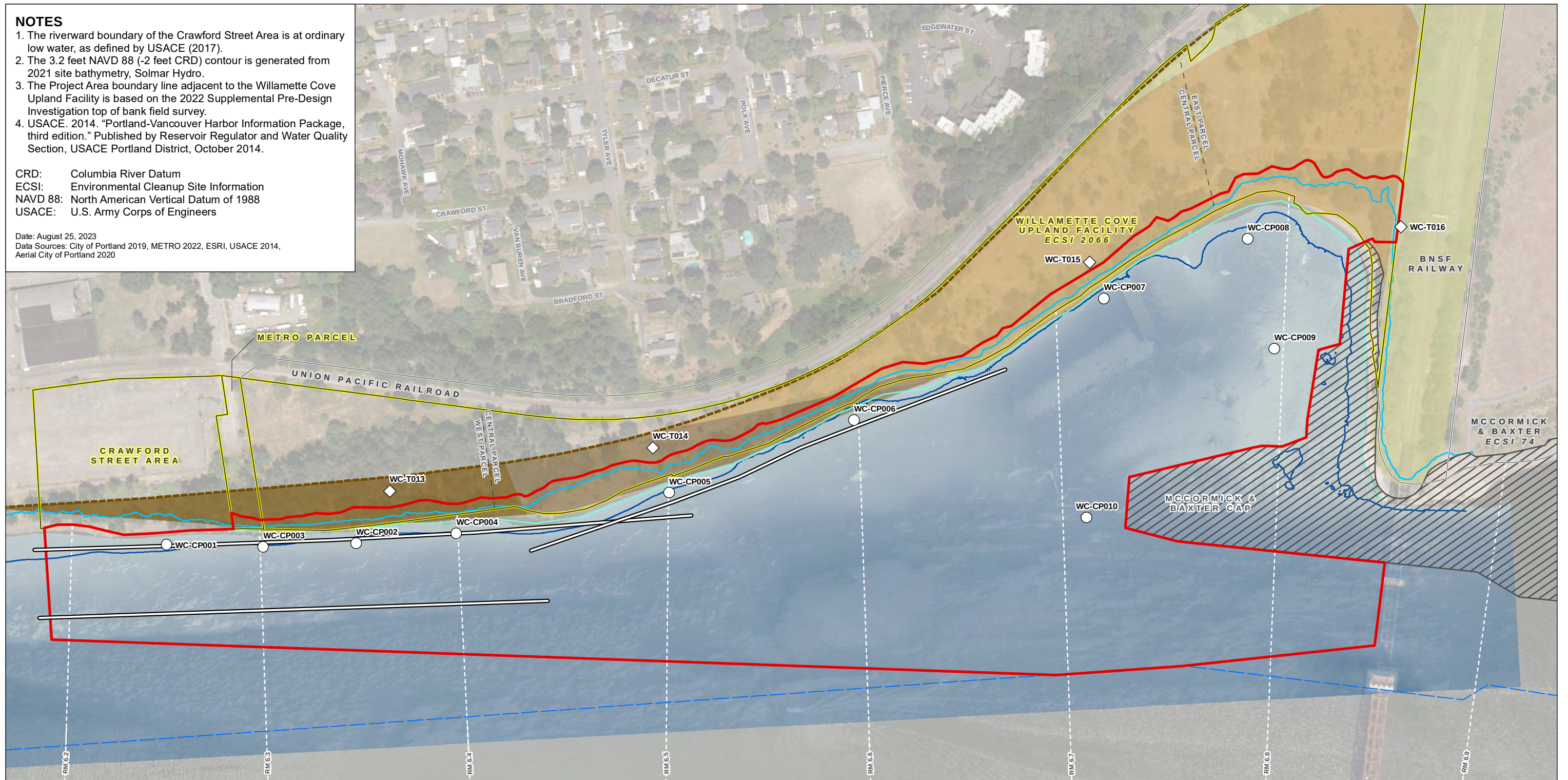
Filename: 22-59-24503_CP07.ppd2
Depth: 3.225 m / 10.581 ft
Duration: 1200.0 s

u Min: 17.6 ft
u Max: 37.3 ft
u Final: 36.3 ft

WT: -7.841 m / -25.725 ft
Ueq: 36.3 ft

1. The riverward boundary of the Crawford Street Area is at ordinary low water, as defined by USACE (2017).
2. The 3.2 feet NAVD 88 (-2 feet CRD) contour is generated from 2021 site bathymetry, Solmar Hydro.
3. The Project Area boundary line adjacent to the Willamette Cove Upland Facility is based on the 2022 Supplemental Pre-Design Investigation top of bank field survey.
4. USACE. 2014. "Portland-Vancouver Harbor Information Package, third edition." Published by Reservoir Regulator and Water Quality Section, USACE Portland District, October 2014.

Date: August 25, 2023
Data Sources: City of Portland 2019, METRO 2022, ESRI, USACE 2014,
Aerial City of Portland 2020



Geotechnical Explorations

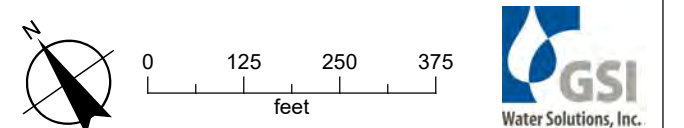
- Bathymetry**
- 
- 10 feet
- 66 feet

- 1905 - 1911
- 1911 - 1924
- 1924 - 1939
- 1972 - 1976

 Project Area Boundary
 Adjacent Upland Parcel

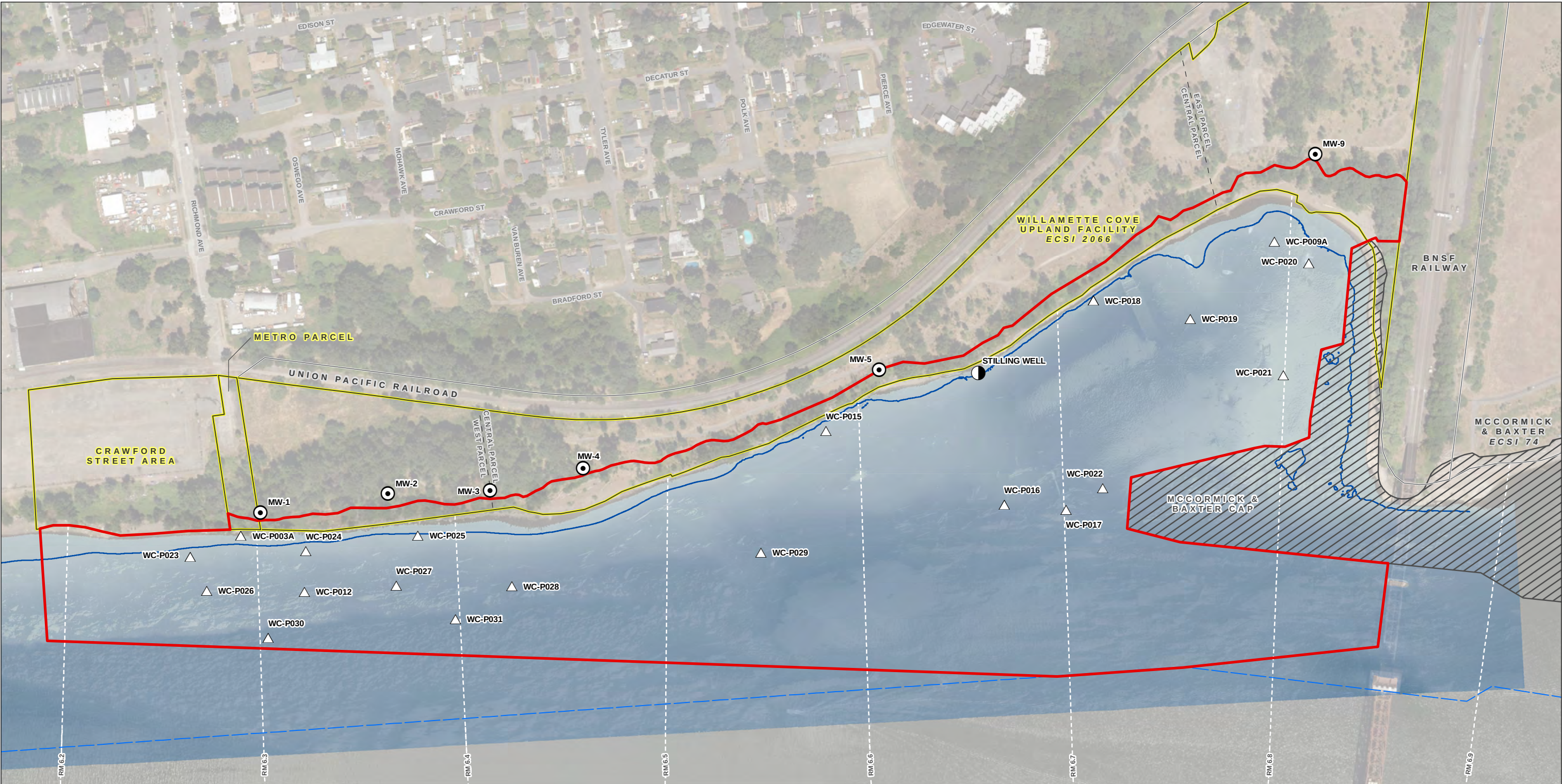
-  Adjacent Upland Subparcel
 Upland Parcel
 Capped Area
 Navigation Channel
 Ordinary High Water is set at 20.08 feet NAVD 88⁴
 Field Verified Ordinary Low Water
 3.2 feet NAVD 88 (-2 feet CRD)
 River Mile (RM)

Geotechnical Sampling Locations



Appendix F

Continuous Water Level Monitoring Data **(From GSI Water Solutions, 2023)**



LEGEND

Upland Monitoring Well

Stilling Well

Sample Method

Porewater

Bathymetry

10 feet

-66 feet

All Other Features

Project Area Boundary

Adjacent Upland Parcel

Adjacent Upland Subparcel

Upland Parcel

Capped Area

Navigation Channel

3.2 feet NAVD 88 (-2 feet CRD)

River Mile (RM)

NOTES

1. The riverward boundary of the Crawford Street Area is at ordinary low water, as defined by USACE (2017).

2. The 3.2 feet NAVD 88 (-2 feet CRD) contour is generated from 2021 site bathymetry, Solmar Hydro.

3. The Project Area boundary line adjacent to the Willamette Cove Upland Facility is based on the 2022 Supplemental Pre-Design Investigation top of bank field survey.

CRD: Columbia River Datum

ECSI: Environmental Cleanup Site Information

NAVD 88: North American Vertical Datum of 1988

USACE: U.S. Army Corps of Engineers

Date: October 17, 2023

Data Sources: City of Portland 2019, METRO 2022, ESRI, USACE 2014, Aerial City of Portland 2020

FIGURE 2-9

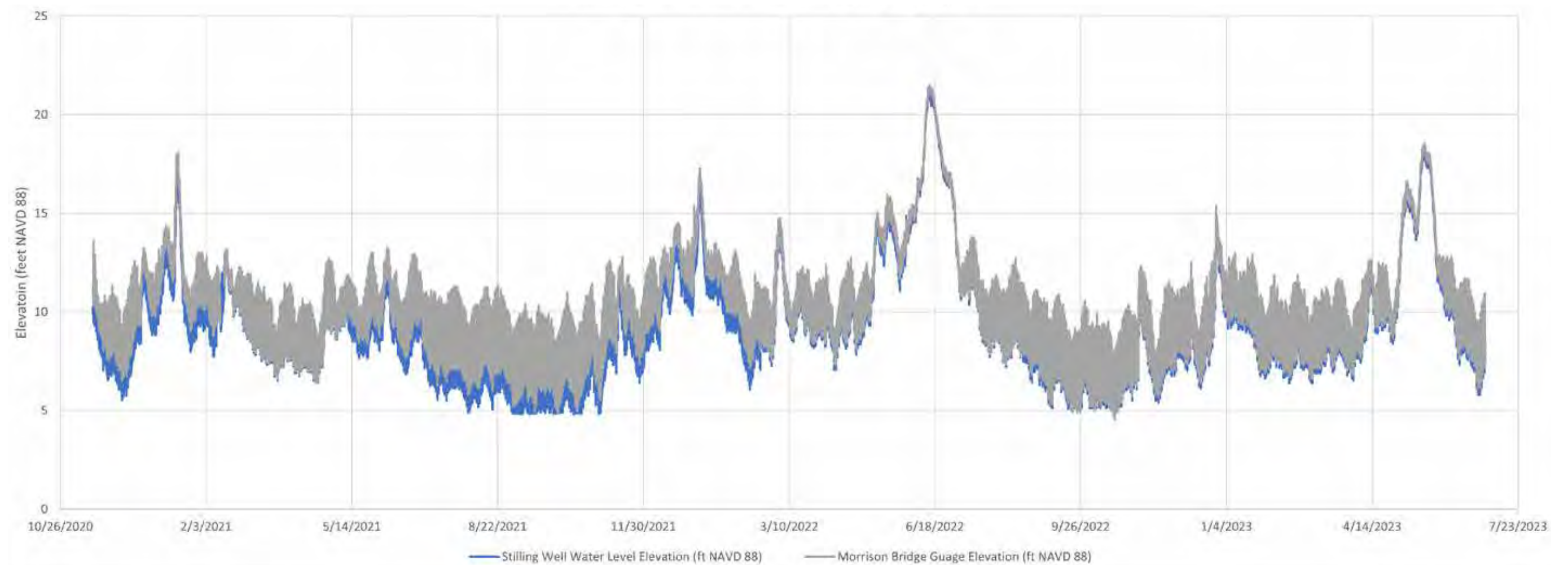
Porewater Sampling Locations

Supplemental Pre-Design Investigation
Evaluation Report

0125250375

feet

Document Path: Y:\0115_POP_WillametteCove\Source_Figures\2023\SPDI_Data_Eval_Report\Figure2-9_Porewater_Locs.mxd, npalmer



LEGEND

- Stilling Well Water Level Elevation (ft NAVD 88)
- Morrison Bridge Gauge Elevation (ft NAVD 88)

NOTES

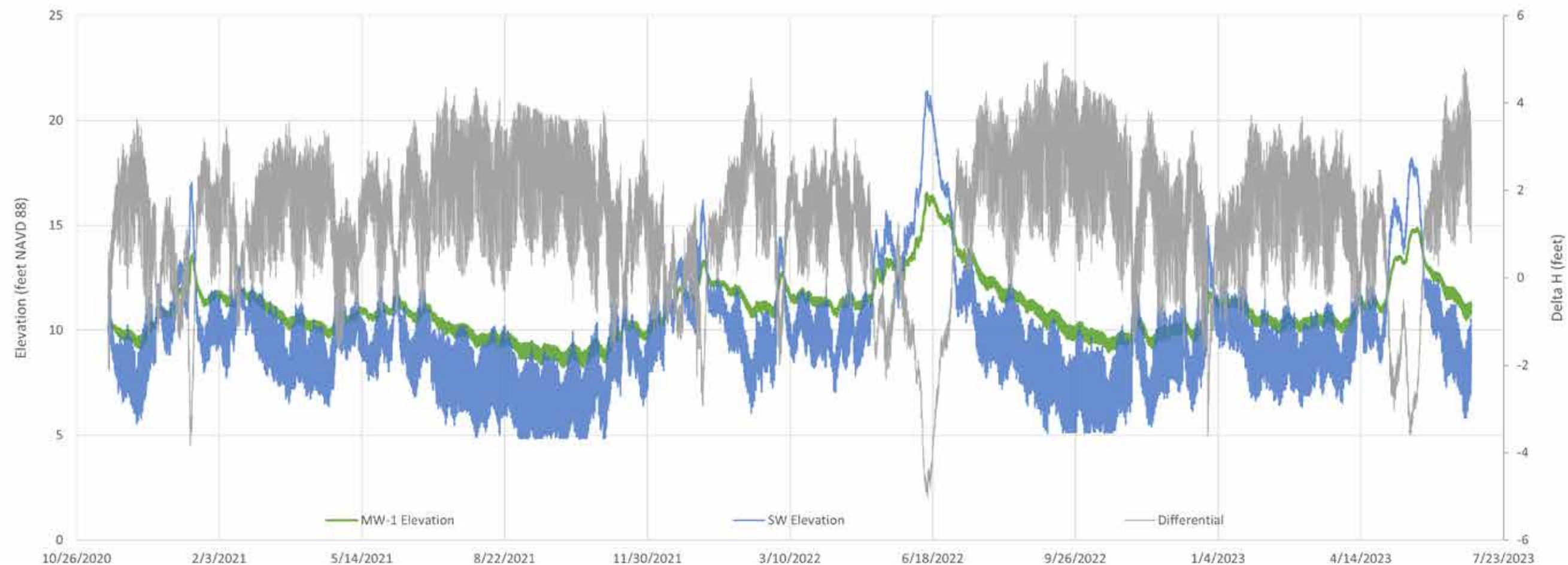
NAVD88: North American Vertical Datum of 1988

FIGURE 4-18

Stilling Well and Morrison Gage Hydrographs

Supplemental Pre-Design Investigation
Evaluation Report





LEGEND

- MW-1 Water Level Elevation (feet NAVD88)
- Willamette River Elevation (feet NAVD88)
- Differential (Delta H)

NOTES

The differential (delta H) represents the difference in elevation between the groundwater and the Willamette River. Positive differentials indicate the direction of flow is toward the river and the negative differential indicate that flow is from the river toward the uplands.

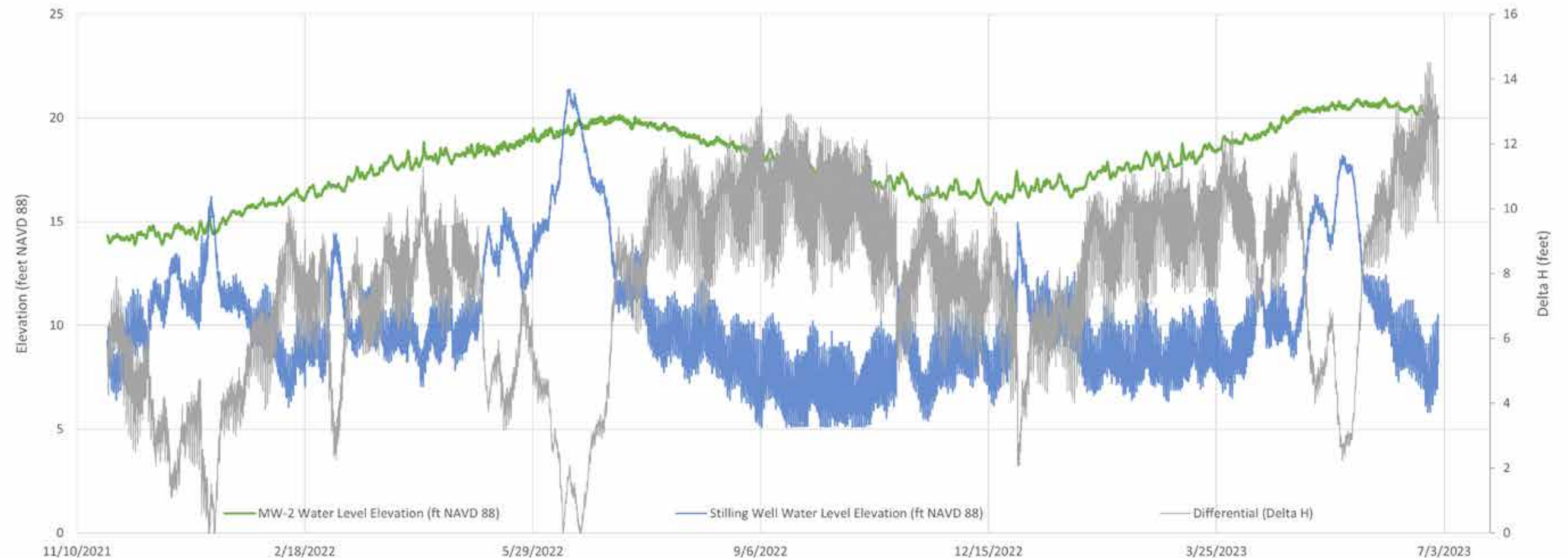
NAVD88: North American Vertical Datum of 1988

FIGURE 4-19

MW-1 Hydrograph

Supplemental Pre-Design Investigation
Evaluation Report





LEGEND

- MW-2 Water Level Elevation (feet NAVD88)
- Willamette River Elevation (feet NAVD88)
- Differential (Delta H)

NOTES

The differential (delta H) represents the difference in elevation between the groundwater and the Willamette River. Positive differentials indicate the direction of flow is toward the river and the negative differential indicate that flow is from the river toward the uplands.

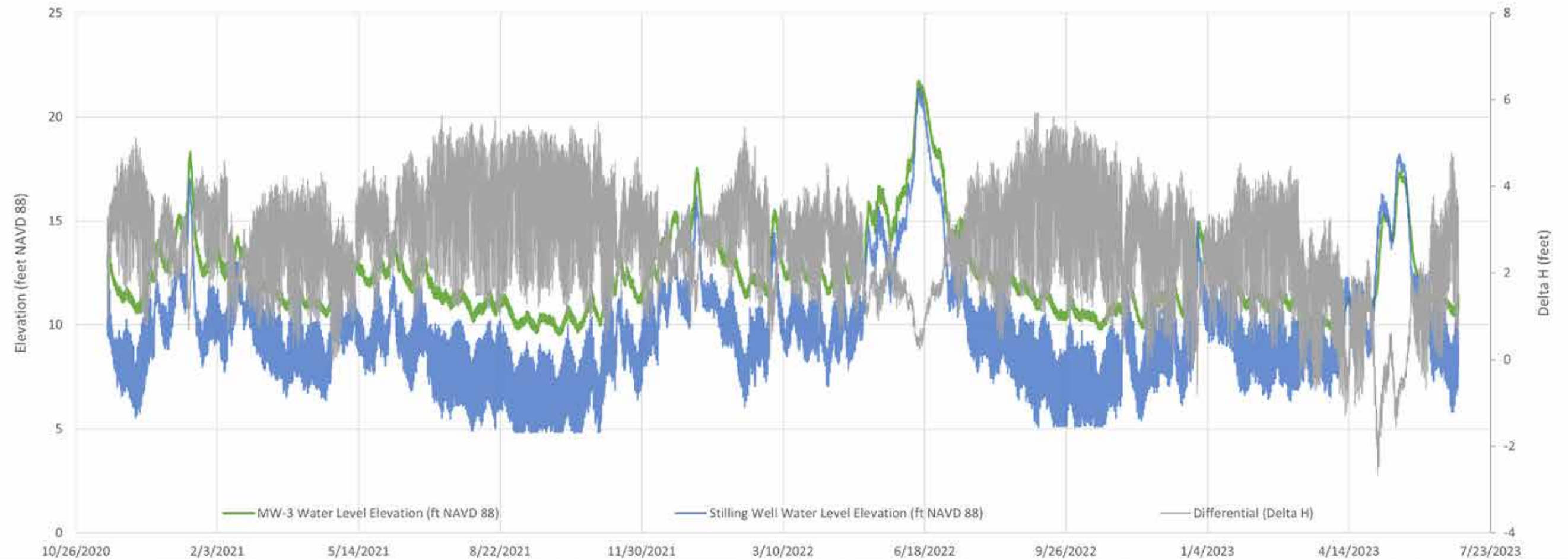
NAVD88: North American Vertical Datum of 1988

FIGURE 4-20

MW-2 Hydrograph

Supplemental Pre-Design Investigation
Evaluation Report





LEGEND

- MW-3 Water Level Elevation (feet NAVD88)
- Willamette River Elevation (feet NAVD88)
- Differential (Delta H)

NOTES

The differential (delta H) represents the difference in elevation between the groundwater and the Willamette River. Positive differentials indicate the direction of flow is toward the river and the negative differential indicate that flow is from the river toward the uplands.

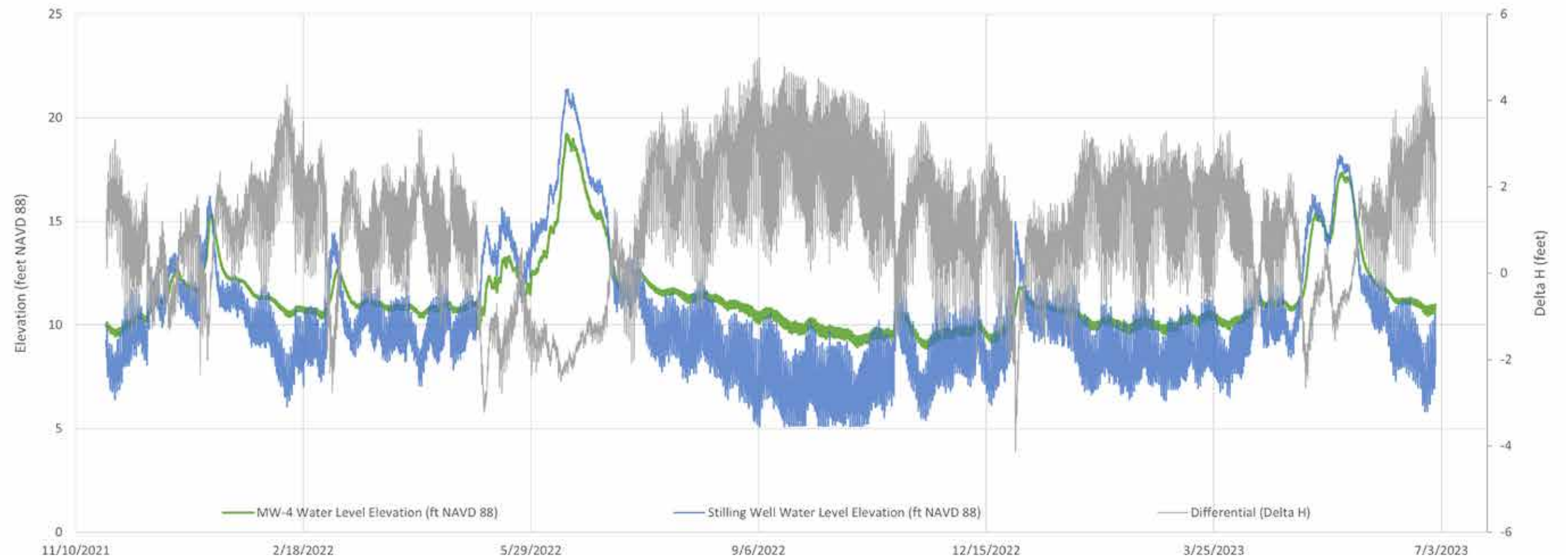
NAVD88: North American Vertical Datum of 1988

FIGURE 4-21

MW-3 Hydrograph

Supplemental Pre-Design Investigation
Evaluation Report





LEGEND

- MW-4 Water Level Elevation (feet NAVD88)
- Willamette River Elevation (feet NAVD88)
- Differential (Delta H)

NOTES

The differential (delta H) represents the difference in elevation between the groundwater and the Willamette River. Positive differentials indicate the direction of flow is toward the river and the negative differential indicate that flow is from the river toward the uplands.

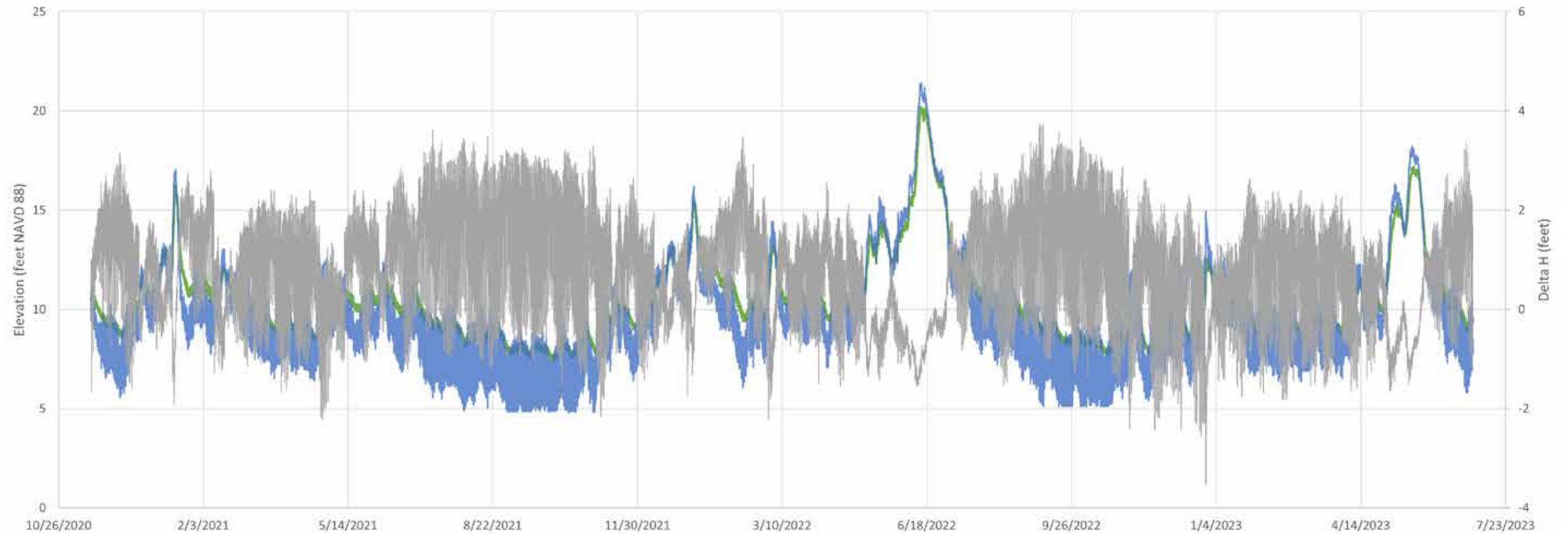
NAVD88: North American Vertical Datum of 1988

FIGURE 4-22

MW-4 Hydrograph

Supplemental Pre-Design Investigation
Evaluation Report





LEGEND

- MW-5 Water Level Elevation (feet NAVD88)
- Willamette River Elevation (feet NAVD88)
- Differential (Delta H)

NOTES

The differential (delta H) represents the difference in elevation between the groundwater and the Willamette River. Positive differentials indicate the direction of flow is toward the river and the negative differential indicate that flow is from the river toward the uplands.

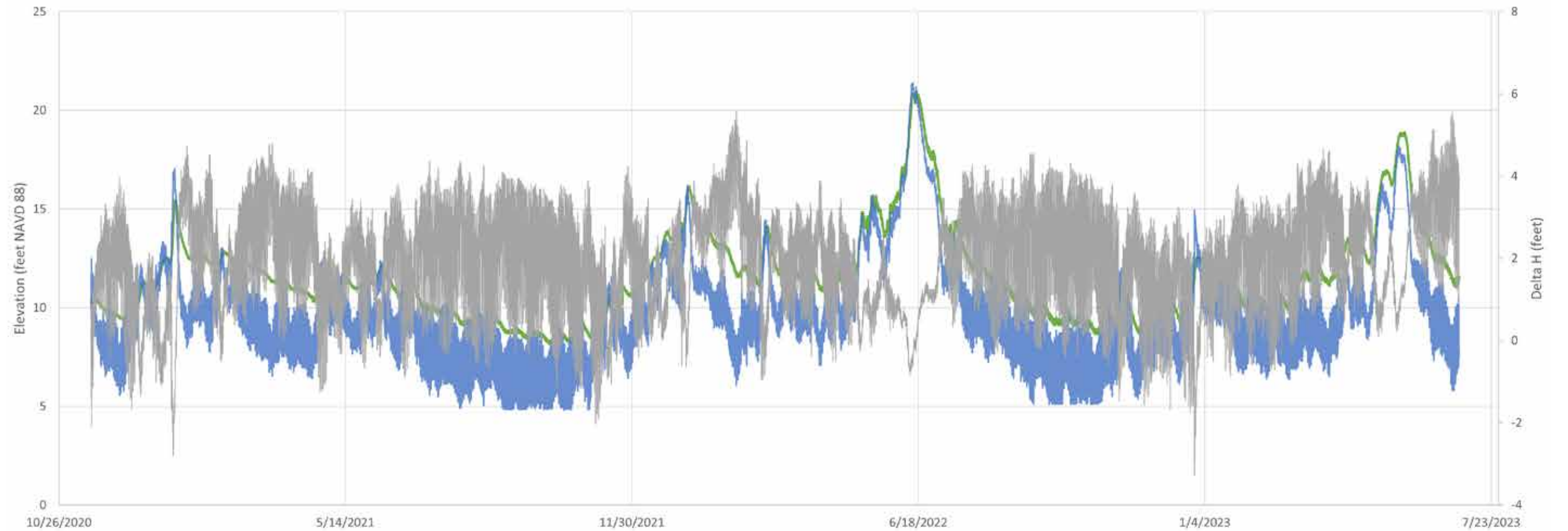
NAVD88: North American Vertical Datum of 1988

FIGURE 4-23

MW-5 Hydrograph

Supplemental Pre-Design Investigation
Evaluation Report





LEGEND

- MW-9 Water Level Elevation (feet NAVD88)
- Willamette River Elevation (feet NAVD88)
- Differential (Delta H)

NOTES

The differential (delta H) represents the difference in elevation between the groundwater and the Willamette River. Positive differentials indicate the direction of flow is toward the river and the negative differential indicate that flow is from the river toward the uplands.

NAVD88: North American Vertical Datum of 1988

FIGURE 4-24

MW-9 Hydrograph

Supplemental Pre-Design Investigation
Evaluation Report



Appendix G

Groundwater Gradient Plots

Figure G-1
Water Elevation, Feb 2016

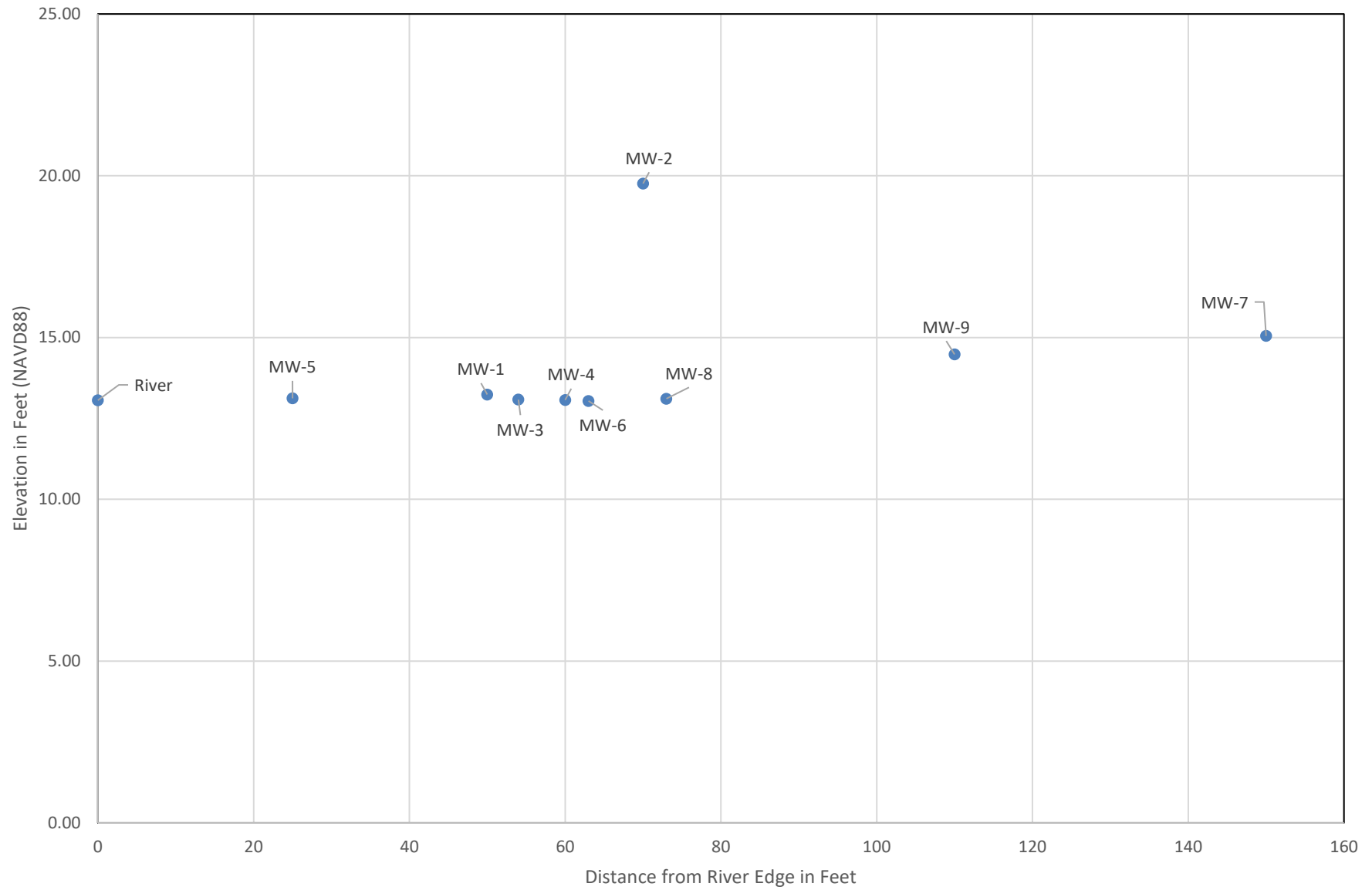


Figure G-2
Water Elevation, June 2016

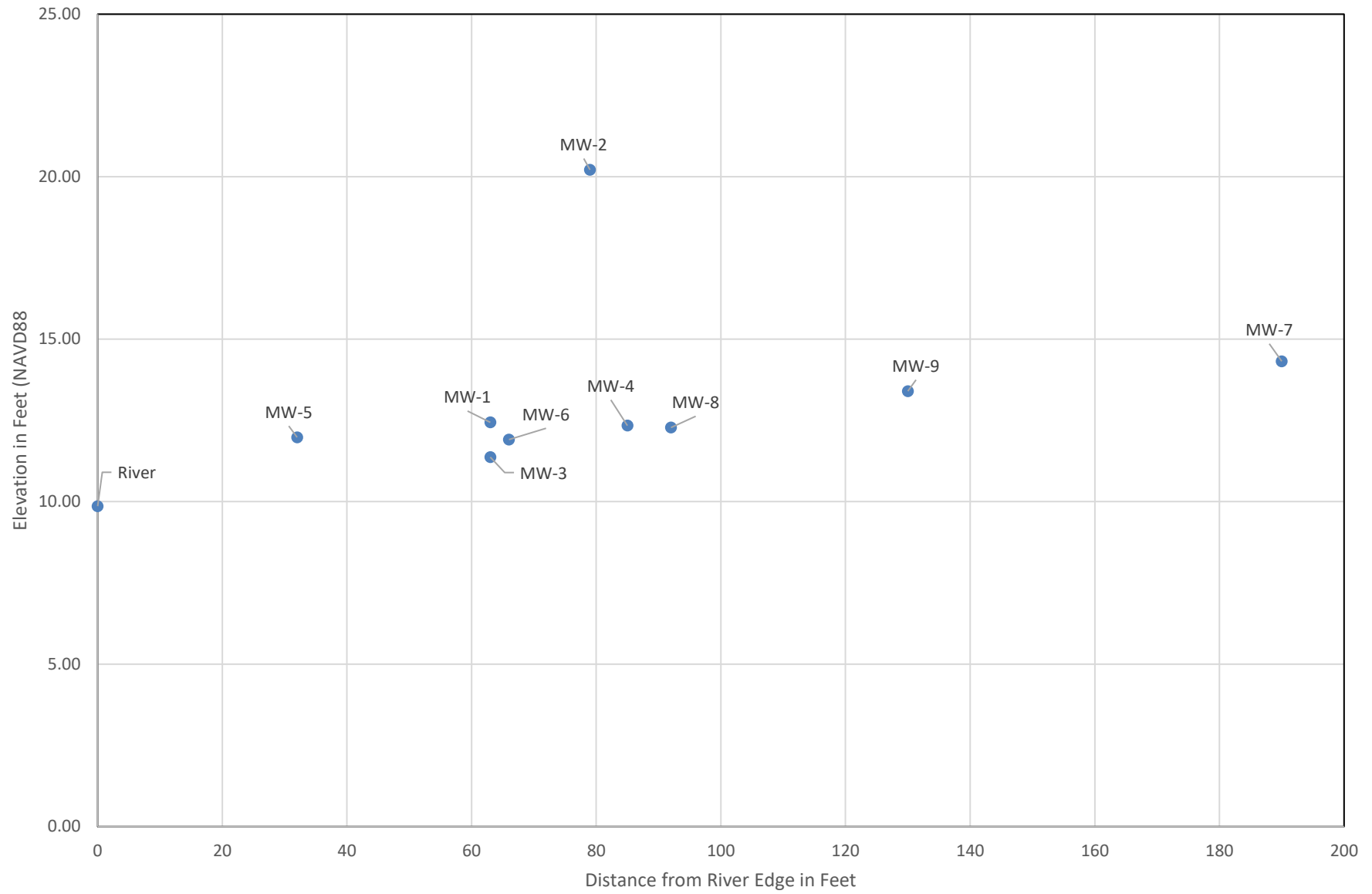


Figure G-3
Water Elevation, September 2016

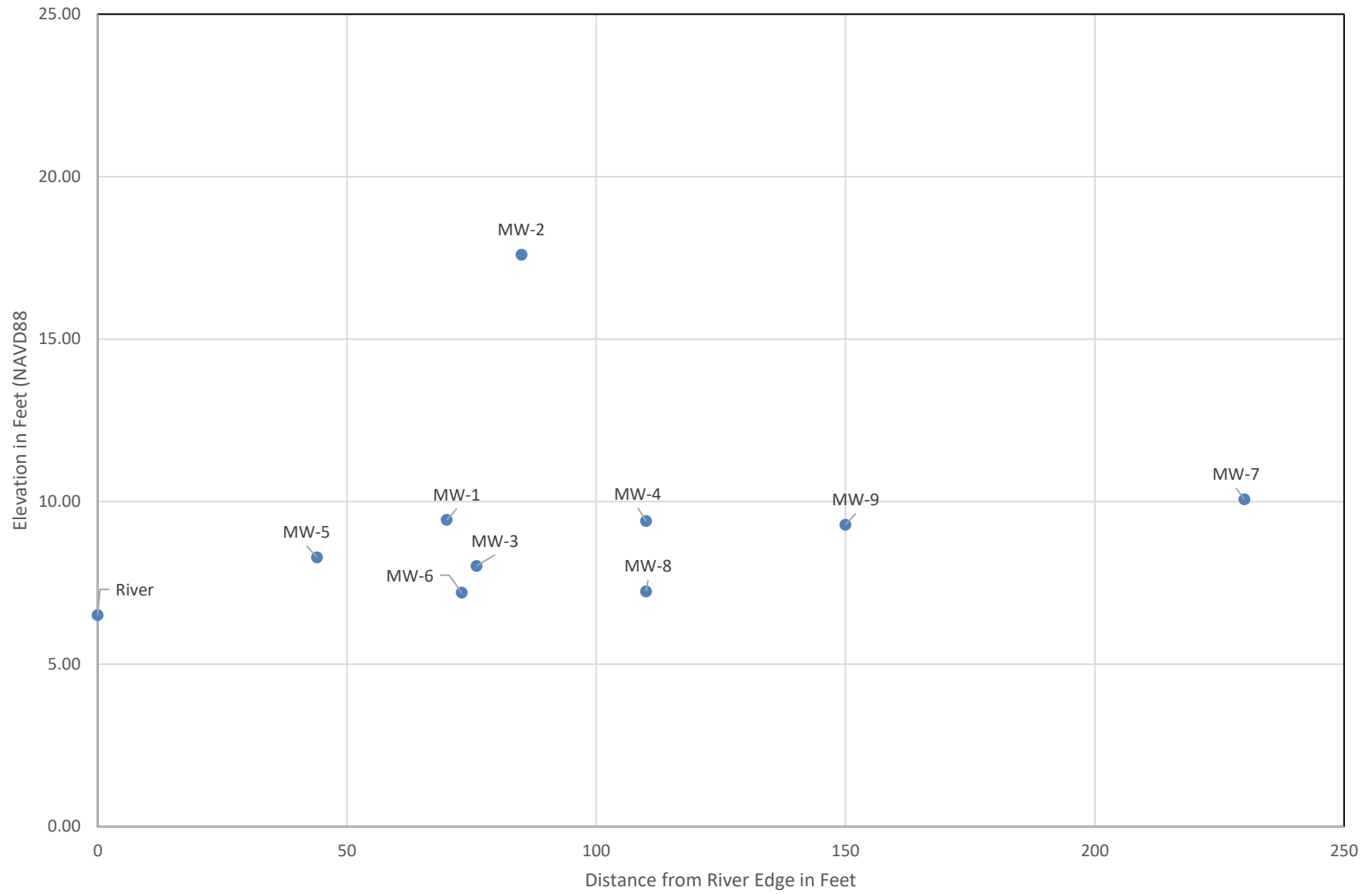


Figure G-4
Water Elevation, December 2016

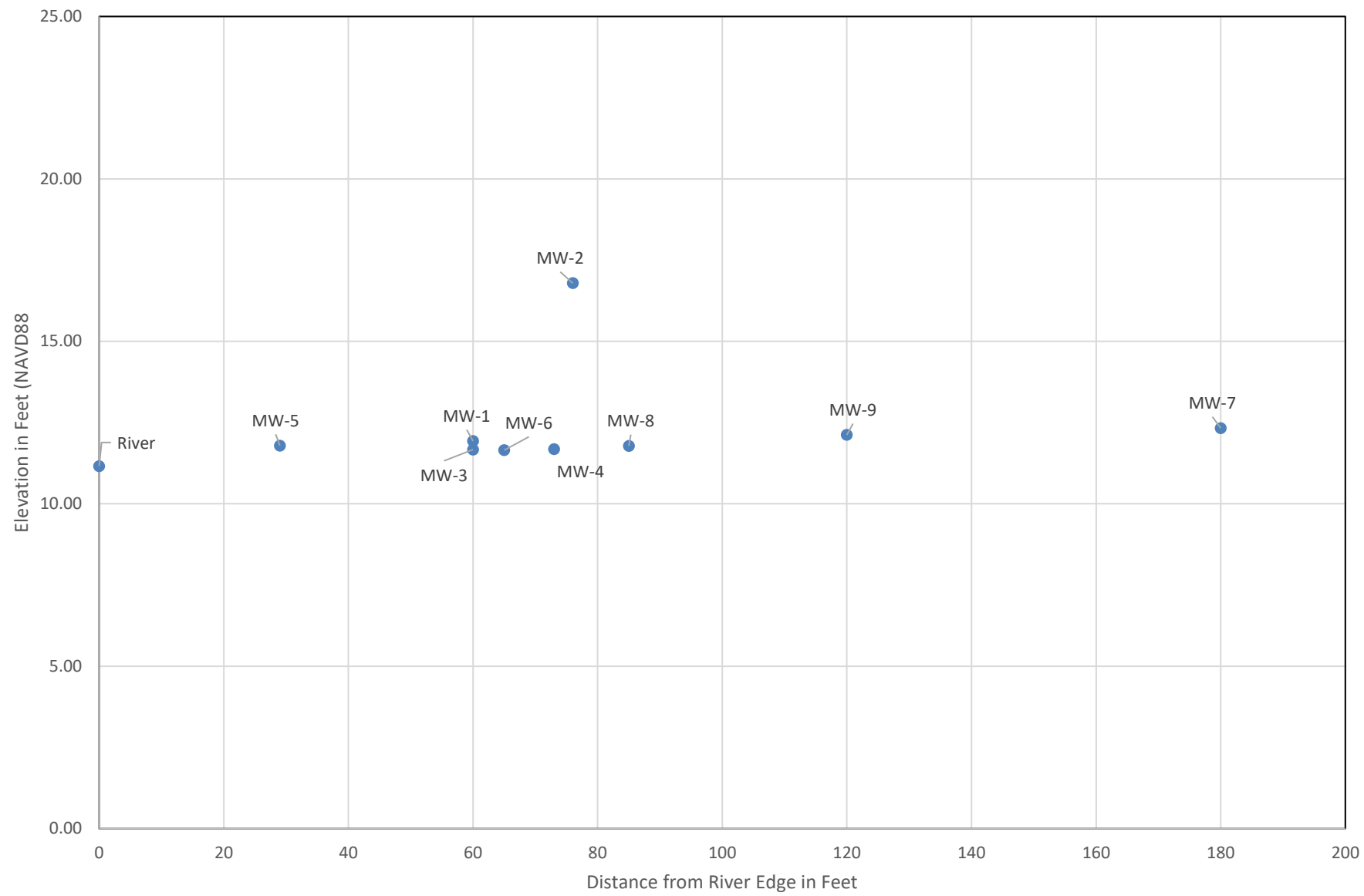


Figure G-5
Water Elevation, February 2016
(Excludes MW-2)

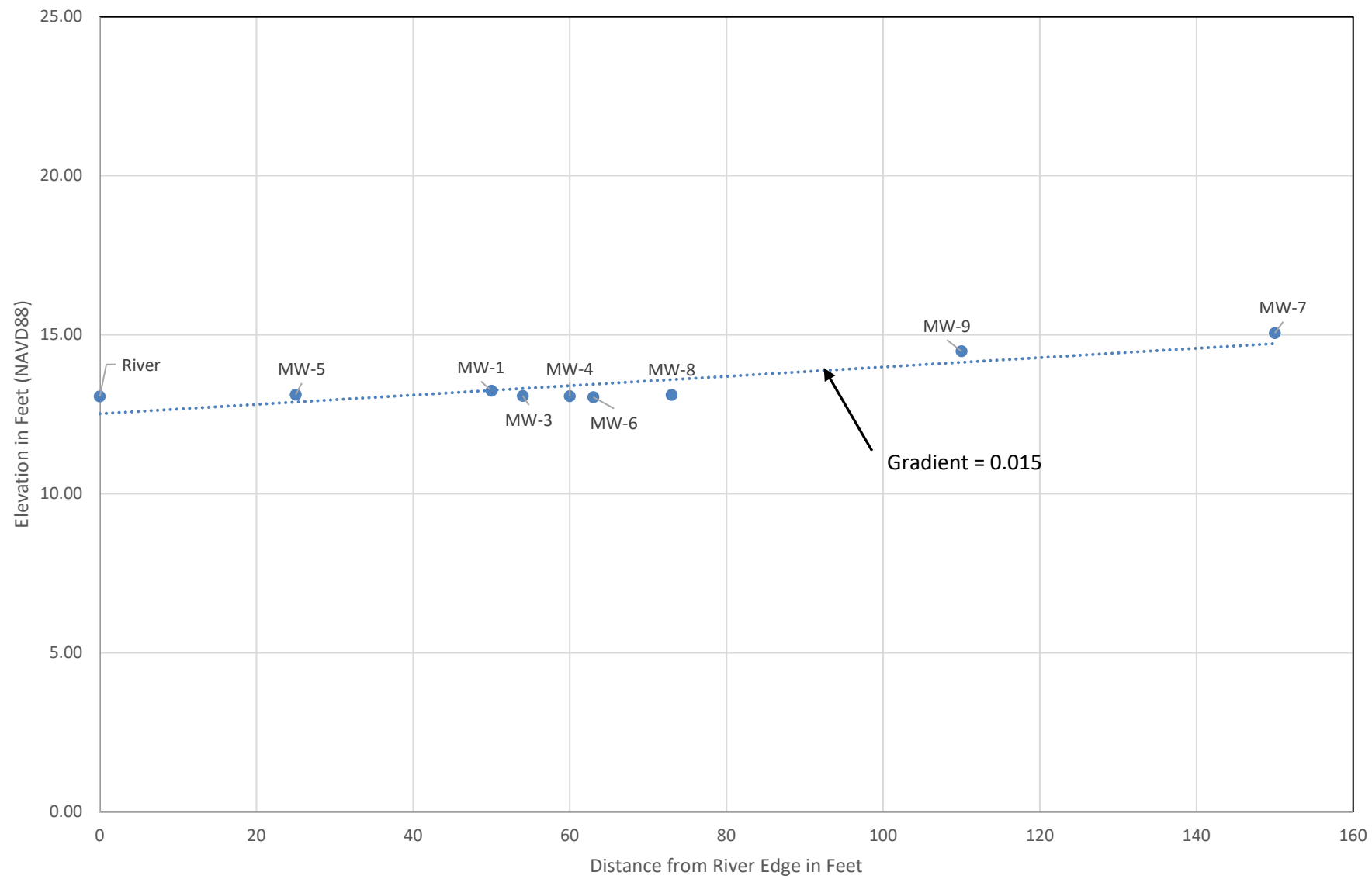


Figure G-6
Water Elevation, June 2016
(Excludes MW-2)

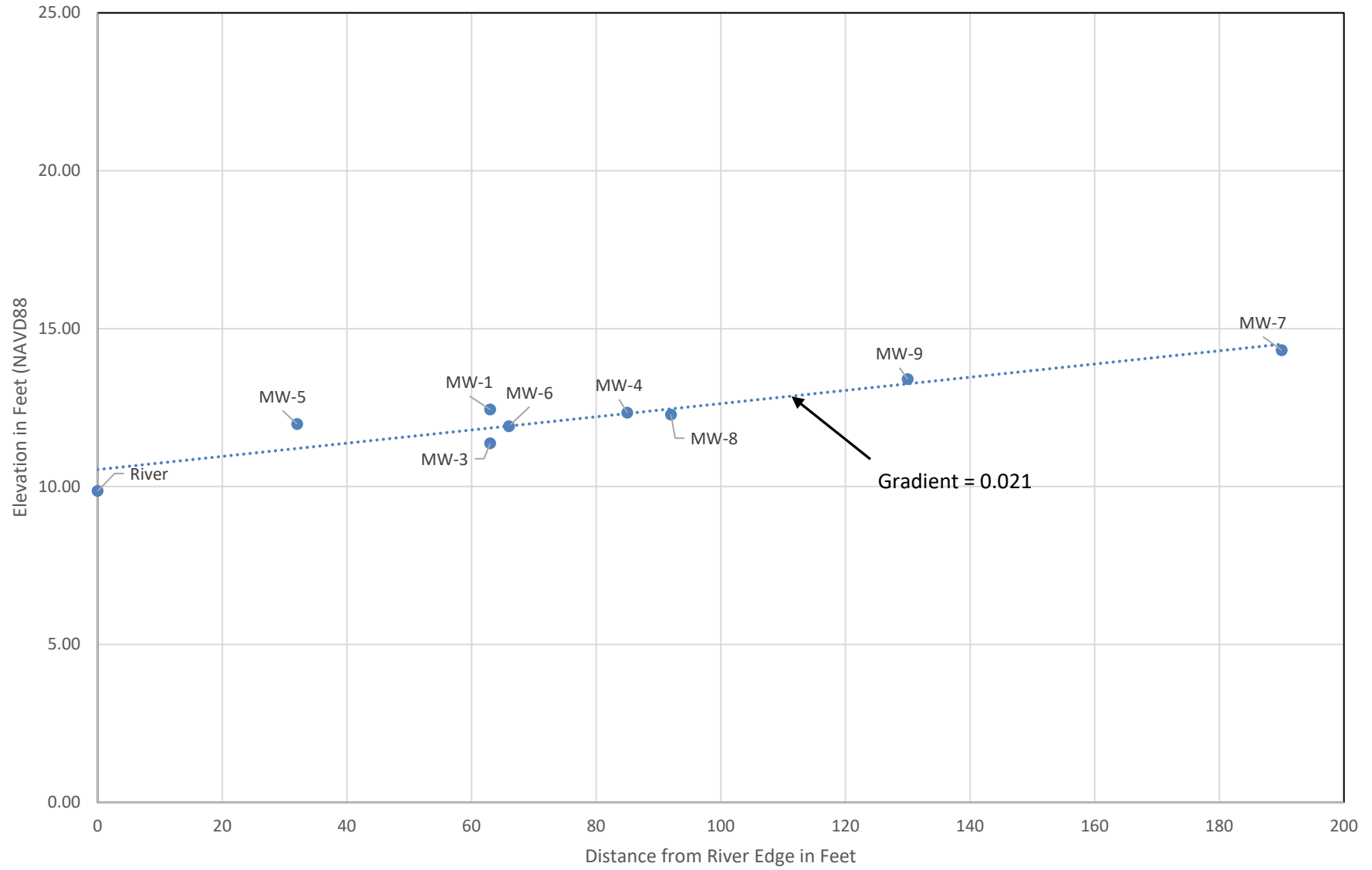


Figure G-7
Water Elevation, September 2016
(Excludes MW-2)

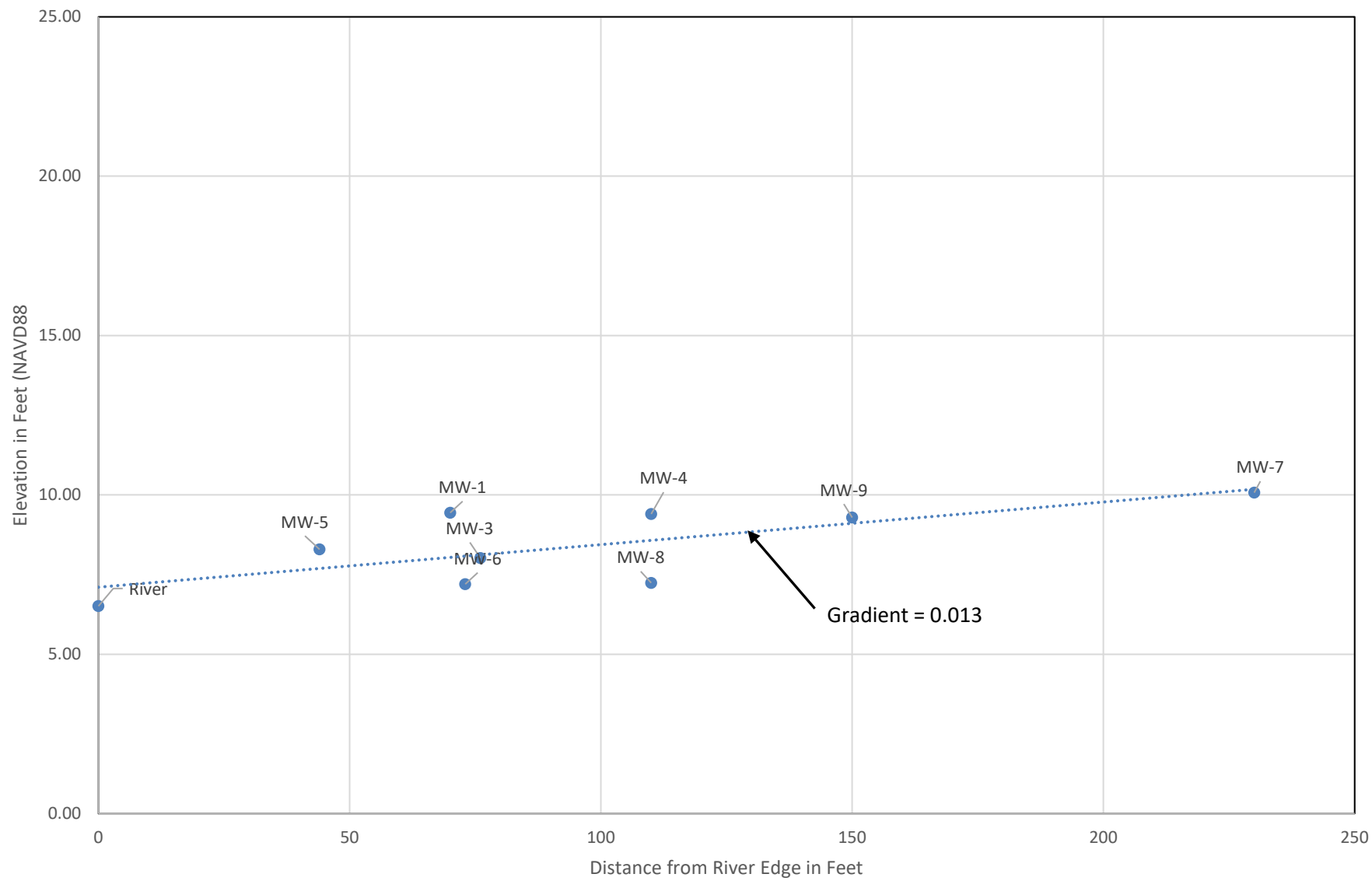
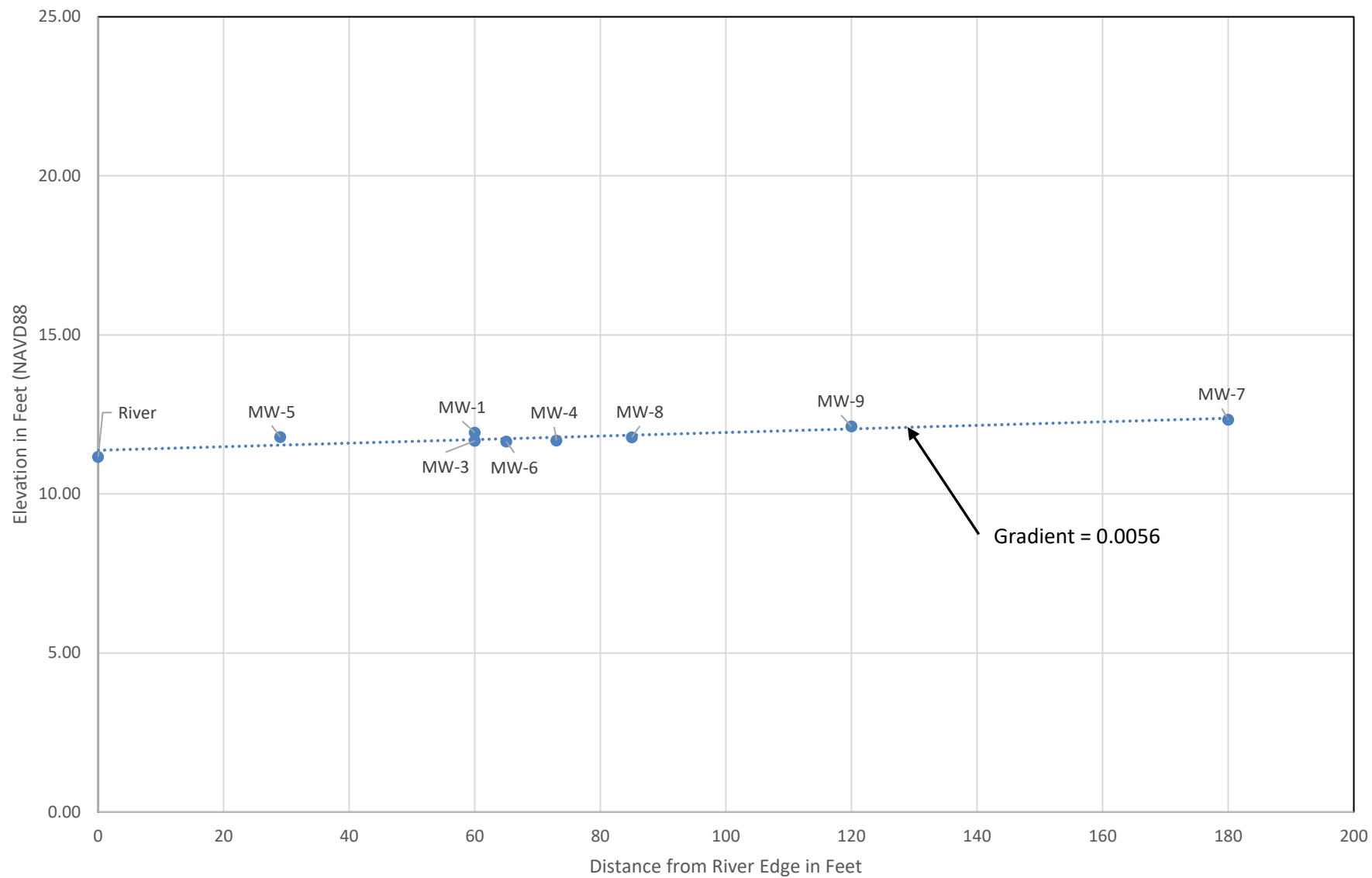


Figure G-8
Water Elevation, December 2016
(Excludes MW-2)



Appendix H

Trident Probe and Ultraseep Seepage Data (From GSI Water Solutions, 2023)

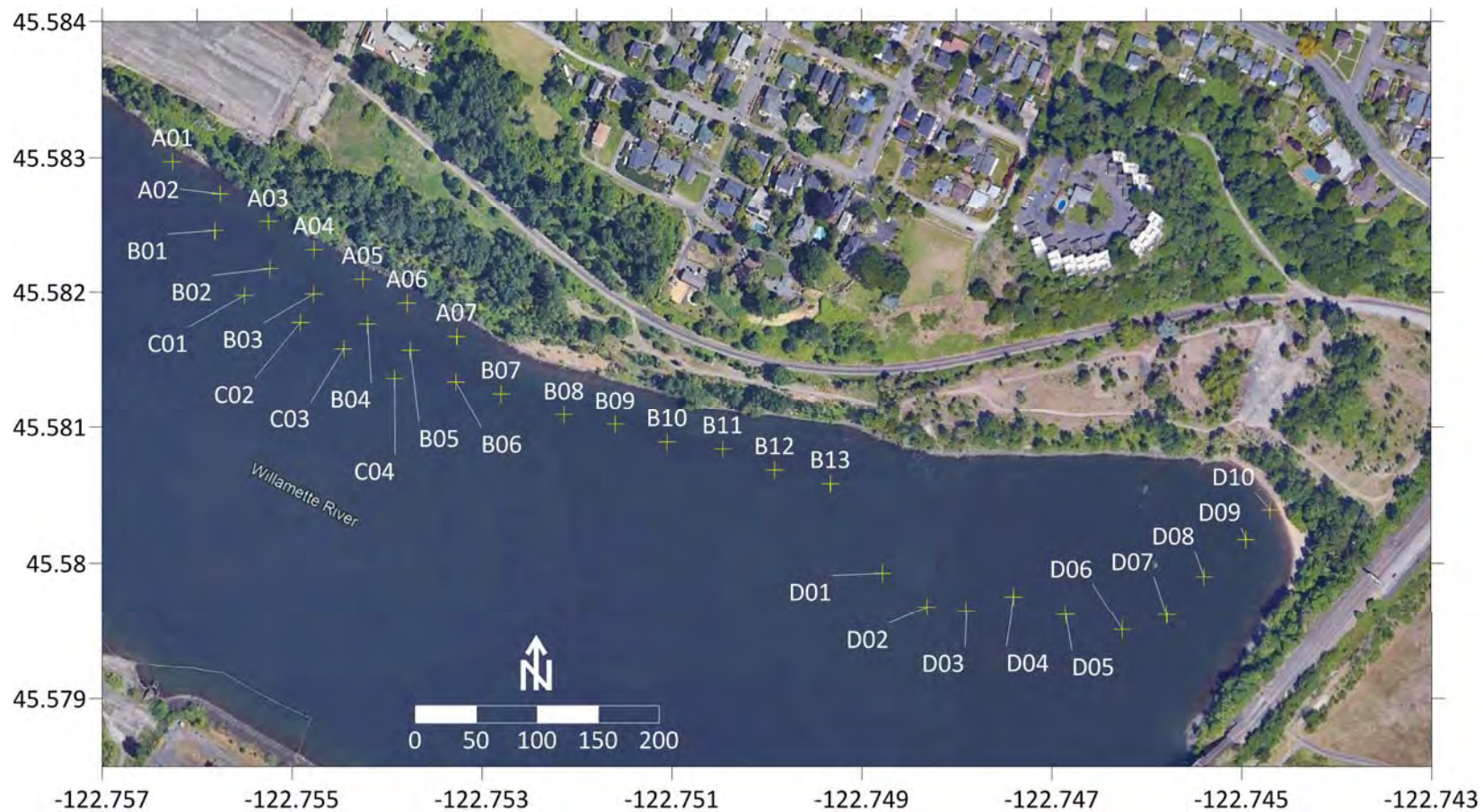


Figure 2-2. Actual screening station locations for the Trident survey. Scale is in meters (Image: Google Earth).

Table 3-1. Mapping station parameters for the Trident survey.

Station	Sample Date-Time	Longitude (degrees W NAD83 (2011))	Latitude (degrees N NAD83 (2011))	Water Depth (ft)	Bottom Type
WC-TPTA-01	8/13/2022 10:04	-122.7562586	45.5829712	7.4	rocky sand
WC-TPTA-02	8/13/2022 11:03	-122.7557566	45.5827339	9.2	silty sand
WC-TPTA-03	8/13/2022 12:55	-122.755248	45.5825254	8.1	silty sand
WC-TPTA-04	8/13/2022 14:38	-122.7547666	45.5823146	9.8	silty sand
WC-TPTA-05	8/13/2022 15:49	-122.754253	45.5820964	9.6	silty sand
WC-TPTA-06	8/14/2022 10:16	-122.7537862	45.5819198	14.1	silty sand
WC-TPTA-07	8/14/2022 11:27	-122.7532619	45.5816749	15.6	silty sand
WC-TPTB-01	8/13/2022 11:55	-122.7558115	45.5824566	25.4	silty sand
WC-TPTB-02	8/13/2022 14:03	-122.7552311	45.5821738	25.6	silty sand
WC-TPTB-03	8/13/2022 15:12	-122.7547707	45.5819856	29.6	silty sand
WC-TPTB-04	8/14/2022 9:27	-122.7542032	45.5817683	33.3	silty sand over clay
WC-TPTB-05	8/14/2022 11:06	-122.7537534	45.5815743	36.2	silty sand
WC-TPTB-06	8/14/2022 13:18	-122.7532719	45.5813389	41.0	silty sand
WC-TPTB-07	8/14/2022 12:55	-122.7527965	45.5812501	36.5	silty sand over clay
WC-TPTB-08	8/14/2022 14:14	-122.7521338	45.5810947	31.0	silty sand over clay
WC-TPTB-09	8/14/2022 14:46	-122.7515943	45.5810227	23.5	silty sand over clay
WC-TPTB-10	8/14/2022 15:43	-122.751047	45.5808906	26.2	silty sand
WC-TPTB-11	8/14/2022 16:09	-122.7504609	45.5808378	20.8	silty sand
WC-TPTB-12	8/15/2022 9:36	-122.7499137	45.5806828	21.9	silty sand
WC-TPTB-13	8/15/2022 9:19	-122.7493255	45.5805822	20.2	silty sand
WC-TPTC-01	8/16/2022 10:48	-122.7554991	45.5819766	44.2	silty sand
WC-TPTC-02	8/16/2022 11:41	-122.7549104	45.5817798	45.9	cobble
WC-TPTC-03	8/16/2022 12:59	-122.7544536	45.5815837	43.5	silty sand with rock
WC-TPTC-04	8/16/2022 13:23	-122.7539187	45.581365	46.2	silty sand
WC-TPTD-01	8/16/2022 10:01	-122.7487784	45.5799248	40.6	silt
WC-TPTD-02	8/16/2022 9:25	-122.7483086	45.5796743	42.7	silt
WC-TPTD-03	8/16/2022 9:05	-122.7478986	45.5796444	38.5	silt
WC-TPTD-04	8/15/2022 14:38	-122.7473975	45.5797497	31.6	silt
WC-TPTD-05	8/15/2022 14:18	-122.746853	45.5796194	28.0	silt
WC-TPTD-06	8/15/2022 12:58	-122.7462564	45.5795075	16.9	silty sand
WC-TPTD-07	8/15/2022 12:38	-122.7457888	45.5796186	12.5	silty sand
WC-TPTD-08	8/15/2022 11:17	-122.7453902	45.5798988	15.5	silty sand
WC-TPTD-09	8/15/2022 11:01	-122.7449492	45.5801738	9.2	silty sand
WC-TPTD-10	8/15/2022 10:32	-122.7446932	45.5803875	3.1	sand

Table 3-2. Mapping station sensor measurements for the Trident survey.

Station	SW Sampling Level (+ags/-bgs inches)	Trident SW Water Temp (°C)	Trident SW Spec. Cond. (μS/cm)	PW Sampling Level (+ags/-bgs inches)	Trident PW Water Temp (°C)	Trident PW Spec. Cond. (μS/cm)	Trident Temp. Contrast (°C)	Trident Spec. Cond. Contrast (μS/cm)
WC-TPTA-01	12	23.976	90	-18	22.785	433	-1.191	343
WC-TPTA-02	12	24.075	90	-18	15.576	304	-8.499	214
WC-TPTA-03	12	25.033	90	-18	23.294	353	-1.739	263
WC-TPTA-04	12	24.061	89	-18	22.718	369	-1.343	280
WC-TPTA-05	12	24.005	89	-18	21.212	301	-2.793	212
WC-TPTA-06	12	23.694	86	-18	21.968	1225	-1.726	1139
WC-TPTA-07	12	23.761	86	-18	21.590	395	-2.171	309
WC-TPTB-01	12	23.921	90	-18	22.172	729	-1.749	639
WC-TPTB-02	12	23.940	89	-18	20.151	358	-3.789	269
WC-TPTB-03	12	23.846	91	-18	19.480	231	-4.366	140
WC-TPTB-04	12	23.653	86	-18	18.877	282	-4.776	196
WC-TPTB-05	12	23.687	85	-18	20.896	395	-2.791	310
WC-TPTB-06	12	23.676	86	-18	20.750	500	-2.926	414
WC-TPTB-07	12	23.669	86	-18	21.019	218	-2.650	132
WC-TPTB-08	12	23.537	88	-18	19.520	335	-4.017	247
WC-TPTB-09	12	23.609	86	-18	21.709	240	-1.900	154
WC-TPTB-10	12	23.681	86	-18	16.907	191	-6.774	105
WC-TPTB-11	12	23.674	86	-18	21.293	650	-2.381	564
WC-TPTB-12	12	23.519	124	-18	21.554	301	-1.965	177
WC-TPTB-13	12	23.500	118	-18	21.356	304	-2.144	186
WC-TPTC-01	12	23.448	90	-18	20.482	322	-2.966	232
WC-TPTC-02	12	23.470	90	-18	21.963	289	-1.507	199
WC-TPTC-03	12	23.495	90	-18	19.507	338	-3.988	248
WC-TPTC-04	12	23.470	90	-18	17.690	354	-5.780	264
WC-TPTD-01	12	23.462	91	-18	21.055	716	-2.407	625
WC-TPTD-02	12	23.444	89	-18	20.703	684	-2.741	595
WC-TPTD-03	12	23.441	88	-18	20.674	1061	-2.767	973
WC-TPTD-04	12	23.498	111	-18	21.052	750	-2.446	639
WC-TPTD-05	12	23.516	111	-18	21.072	385	-2.444	274
WC-TPTD-06	12	23.582	110	-18	21.317	494	-2.265	384
WC-TPTD-07	12	23.647	110	-18	21.205	582	-2.442	472
WC-TPTD-08	12	23.570	122	-18	21.660	321	-1.910	199
WC-TPTD-09	12	23.694	119	-18	21.836	584	-1.858	465
WC-TPTD-10	12	23.733	128	-18	20.147	313	-3.586	185

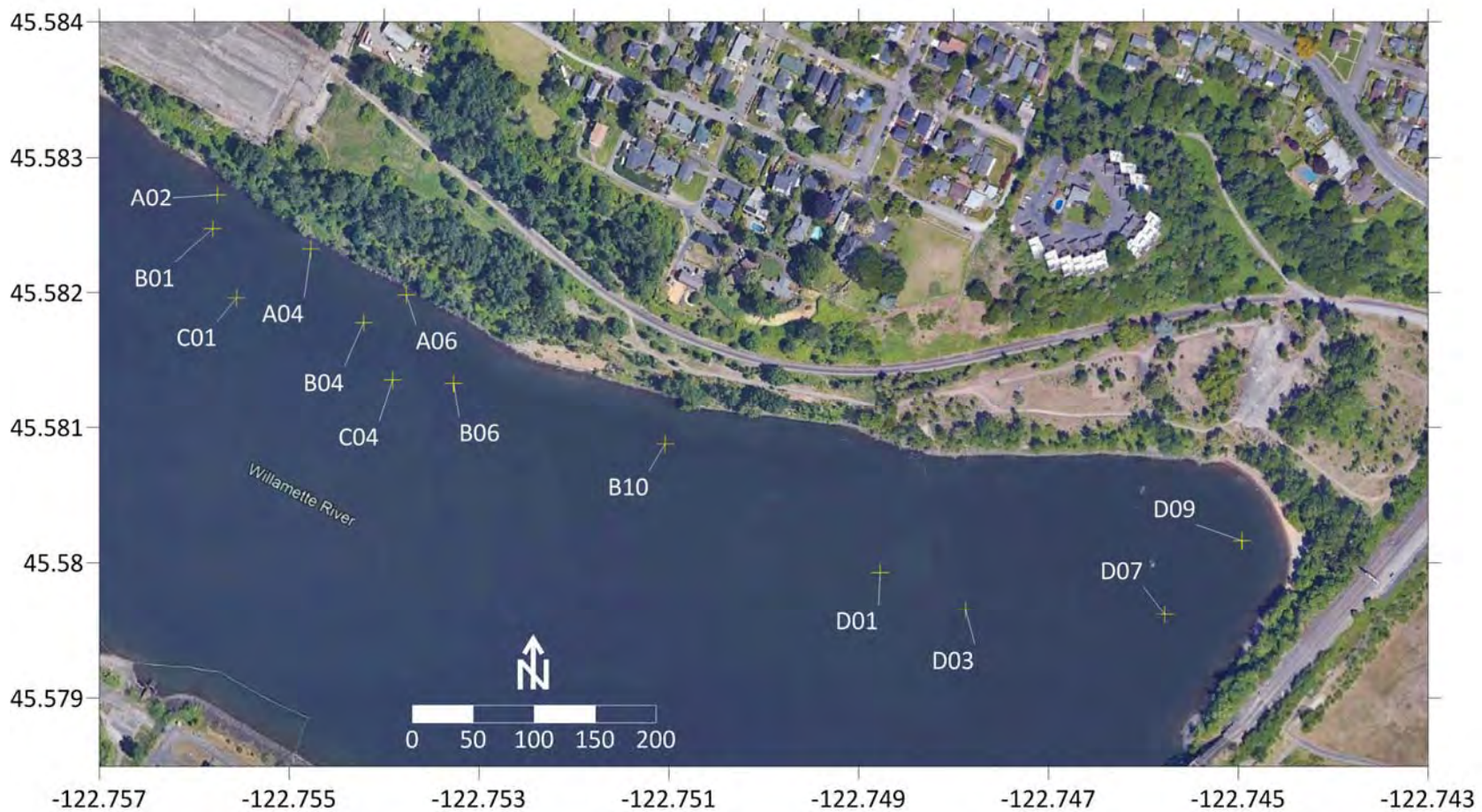


Figure 2-4. Deployment locations for the UltraSeep survey at the WC project area. Scale is in meters (Image: Google Earth).

Table 3-9. Station information and field notes for the UltraSeep deployments.

Station Information							Field Notes	
Sampling Location	Deployment Date-Time	Retrieval Date-Time	Water Depth (ft)	Latitude (degrees N NAD83 (2011))	Longitude (degrees W NAD83 (2011))	DGPS Accuracy (cm)	Sediment Type	General Notes
A02	8/20/2022 9:13	8/23/2022 12:25	7.0	45.5827254	-122.75575620	30	Silty sand with wood debris	Meter US7. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated on one side, half way on other side. Rods inserted 1 to 5 feet. Gas trap and muffler installed.
A04	8/20/2022 13:44	8/24/2022 10:29	8.0	45.5823198	-122.75477250	20	Silty sand	Meter US8. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated on one side, half way on other side. Rods inserted 3.5 to 4.5 feet. Gas trap and muffler installed.
A06	8/23/2022 13:25	8/26/2022 13:05	3.8	45.58198270	-122.75376690	21	Sand	Meter US7. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 1 to 3 feet. Gas trap and muffler installed.
B01	8/20/2022 9:50	8/23/2022 16:47	22.0	45.5824694	-122.75580400	19	Silty sand with wood debris	Meter US1. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 2 to 4 feet. Gas trap and muffler installed.
B04	8/21/2022 12:47	8/24/2022 12:38	32.0	45.5817774	-122.75421570	20	Silty sand with wood debris	Meter US2. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 0.2 to 2 feet. Gas trap and muffler installed.
B06	8/22/2022 7:25	8/25/2022 11:30	38.0	45.58133240	-122.75326780	25	Silty sand	Meter US3. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 0.5 to 3 feet. Gas trap and muffler installed.
B10	8/22/2022 12:40	8/25/2022 14:53	26.0	45.5808768	-122.75103820	19	Silty sand with wood debris	Meter US4. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 2 feet. Gas trap and muffler installed.

Table 3-9. (cont.)

Station Information							Field Notes	
Sampling Location	Deployment Date-Time	Retrieval Date-Time	Water Depth (ft)	Latitude (degrees N NAD83 (2011))	Longitude (degrees W NAD83 (2011))	DGPS Accuracy (cm)	Sediment Type	General Notes
C01	8/23/2022 7:21	8/26/2022 10:45	44.0	45.5819612	-122.75555300	18	Silt over cobble with larger boulders in area	Meter US5. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 0.5 to 1 feet. Gas trap and muffler installed.
C04	8/23/2022 16:53	8/26/2022 15:31	45.0	45.58135740	-122.75391050	18	Sand with pilings in area	Meter US1. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 0.3 to 2 feet. Gas trap and muffler installed.
D01	8/19/2022 9:32	8/22/2022 15:35	37.0	45.5799261	-122.74877430	21	Silt with wood debris	Meter US5. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 5 feet. Gas trap and muffler installed.
D03	8/19/2022 7:33	8/22/2022 12:33	34.7	45.579647	-122.74787370	17	Silty sand	Meter US4. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 5 feet. Gas trap and muffler installed.
D07	8/18/2022 8:25	8/21/2022 12:43	8.6	45.57961260	-122.74577540	15	Silt with wood debris	Meter US2. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel fully seated. Rods inserted 5 feet. Gas trap and muffler installed.
D09	8/18/2022 11:38	8/21/2022 18:00	8.4	45.58015980	-122.74496080	20	Silt with wood debris	Meter US3. 3 rods, buoyancy cells and 3 flanges for stabilization. Funnel half way seated. Rods inserted 3 to 5 feet. Gas trap and muffler installed.

Table 3-10. Summary of seepage statistics for the tidally-average mid-point data from each UltraSeep deployment.

Station	Period Average Specific Discharge (cm/d)	Minimum Specific Discharge (cm/d)	Maximum Specific Discharge (cm/d)	Range Specific Discharge (cm/d)	Standard Deviation Specific Discharge (cm/d)
A02	78.00	32.03	140.59	108.56	25.51
A04	0.41	-0.07	0.67	0.74	0.19
A06	0.23	-0.58	0.74	1.31	0.38
B01	1.78	-0.03	13.71	13.74	2.87
B04	1.98	1.11	2.60	1.50	0.37
B06	0.69	0.17	1.21	1.04	0.22
B10	20.82	11.39	31.75	20.37	5.64
C01	0.54	0.30	0.72	0.42	0.11
C04	0.81	0.44	1.04	0.60	0.15
D01	0.04	-0.62	0.43	1.05	0.25
D03	0.03	-0.54	0.50	1.04	0.24
D07	0.07	-0.50	0.32	0.83	0.22
D09	0.09	-0.16	0.88	1.04	0.23

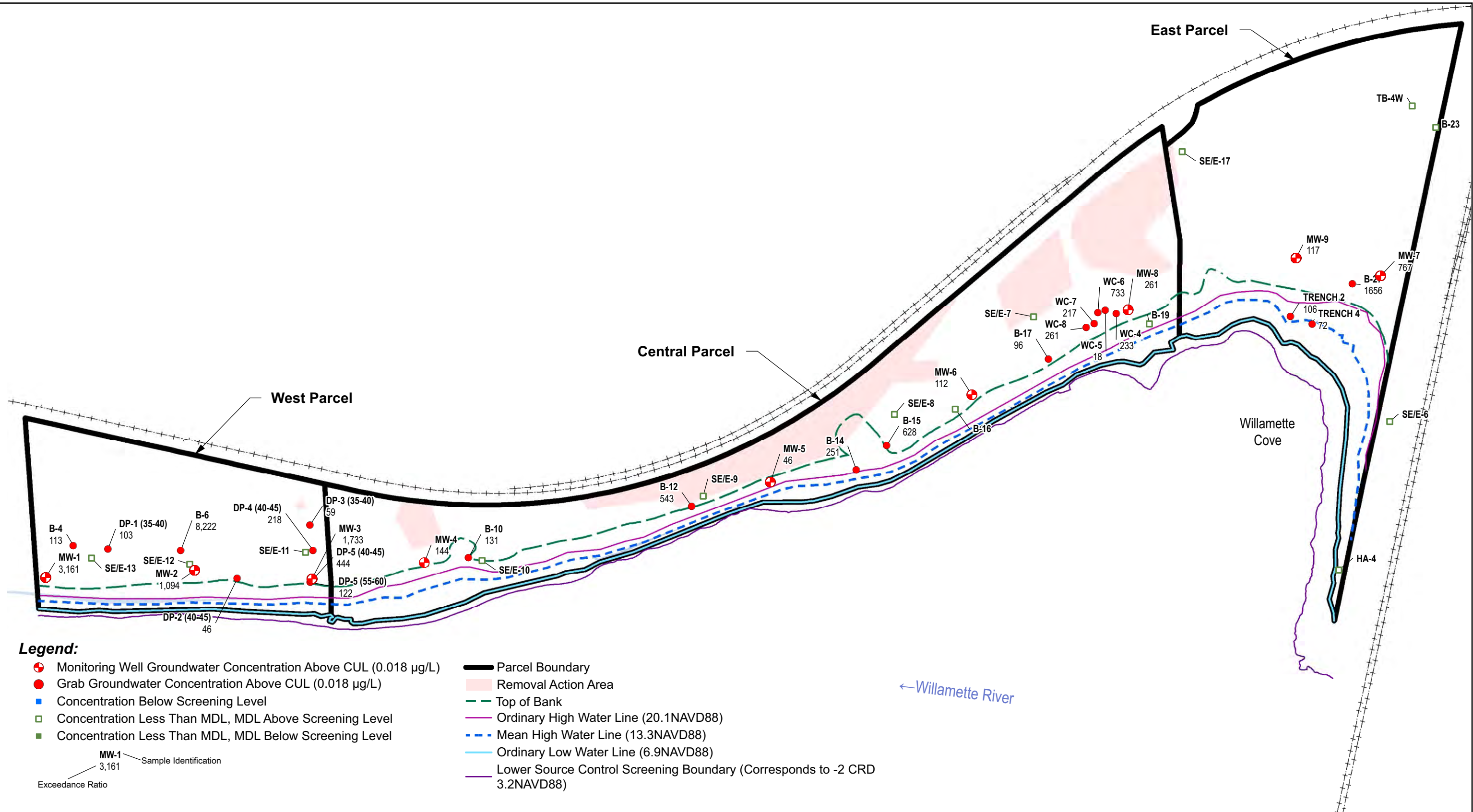
Notes:

Positive values are discharge and negative values are recharge

Appendix I

CUL Exceedance Figures for COPCs in Groundwater

I:\Client\Port of Portland\00-PP\90505 WC01 Repts and Wk Plans\19 GW SCE_SCAE\2023 Update\Map\1320001056-17-1-1 CL Exceedances - Diss Arsenic in GW.dwg



**CUL Exceedances -
Dissolved Arsenic in Groundwater**
Updated Groundwater Source Control Evaluation
Willamette Cove Upland Facility
Portland, Oregon

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:
320001056-17

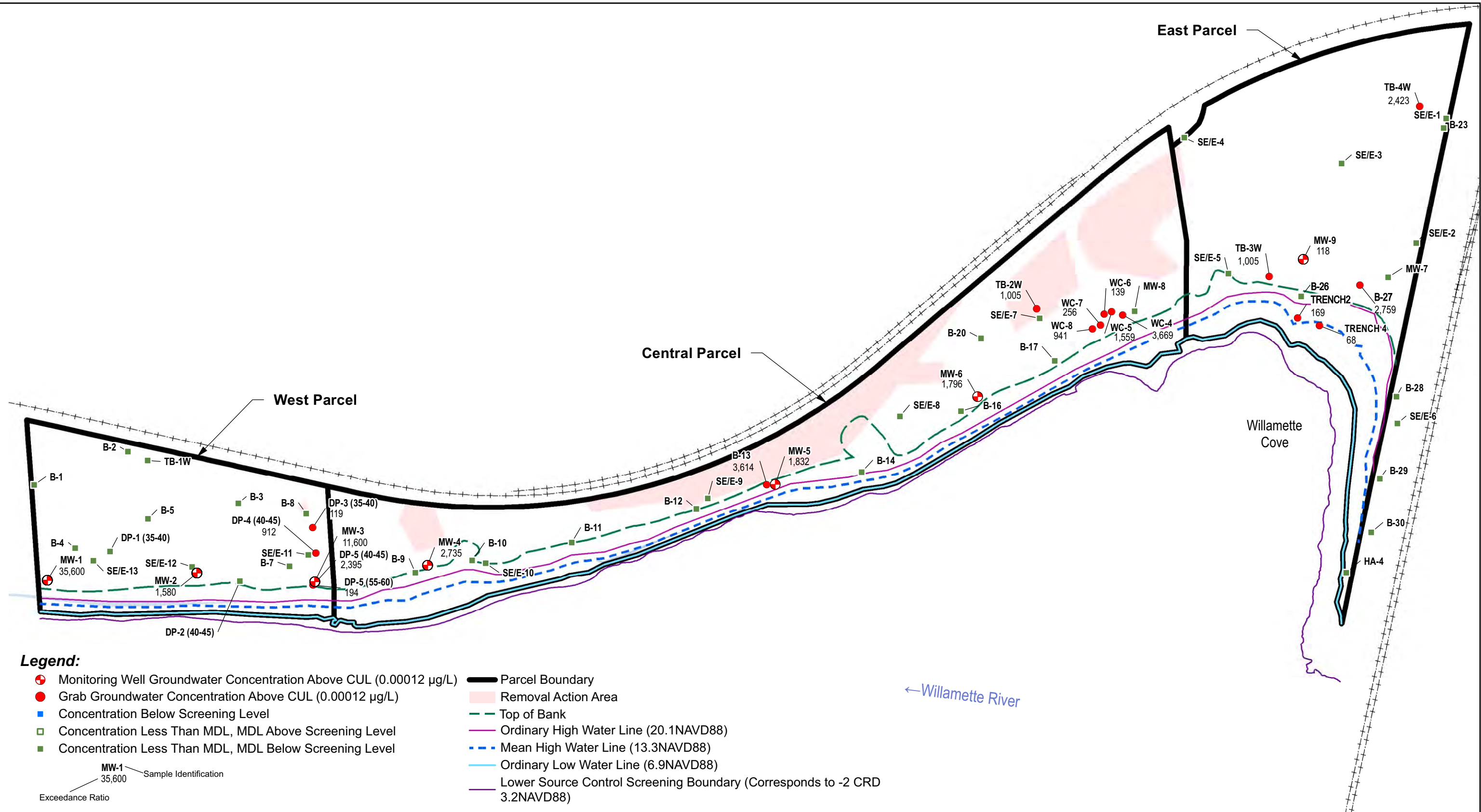
Drawn:
JP

Approved:
SM

Figure
I-1

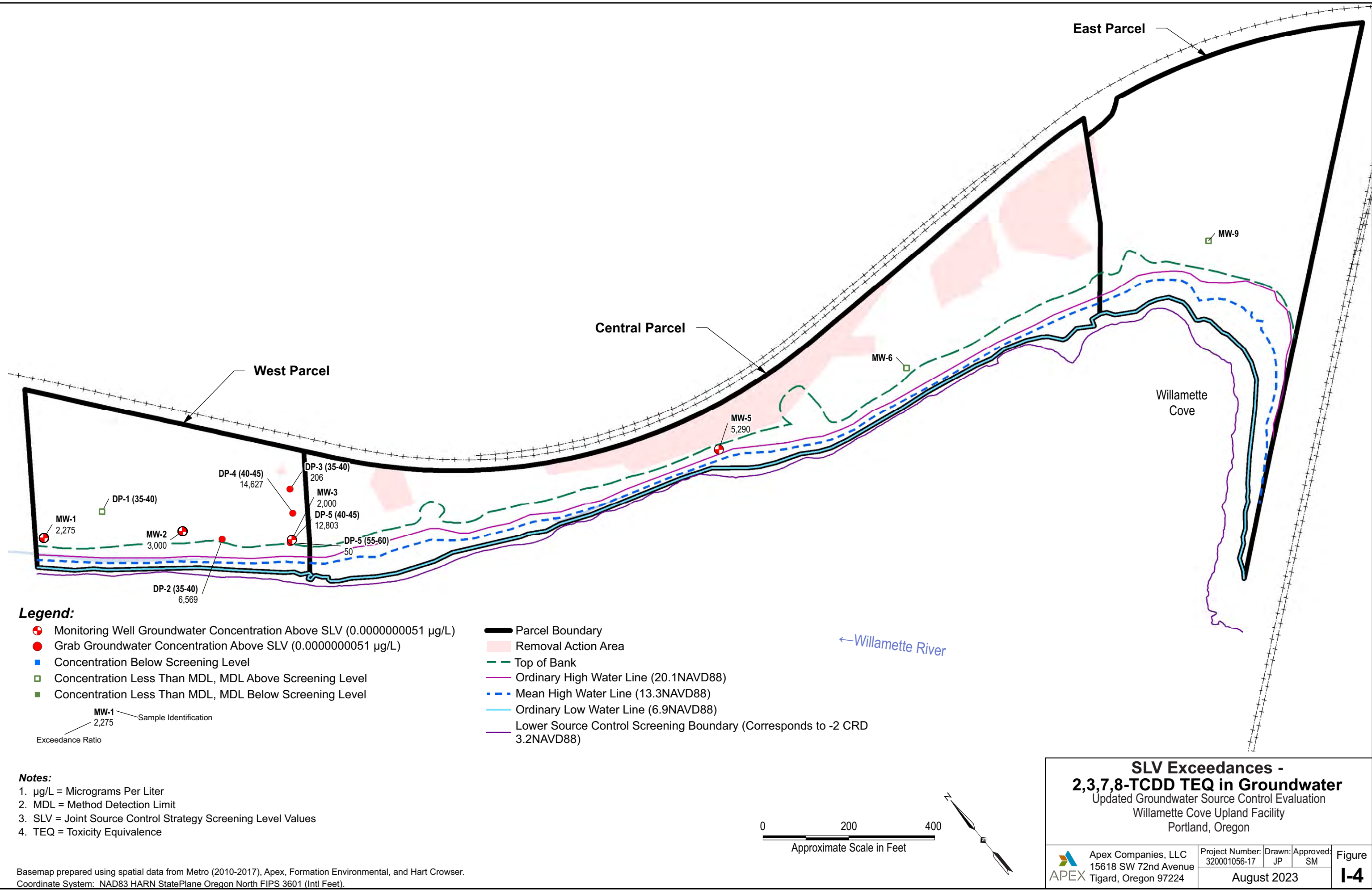
August 2023

I:\Client\Port of Portland\00-Ph905\05 WC\01 Repts and Wk Plans\19 GW SOE SCAE\2023 UpdateApp\1320001056-17 I-2 CL Exceedances - BaP in GW\des

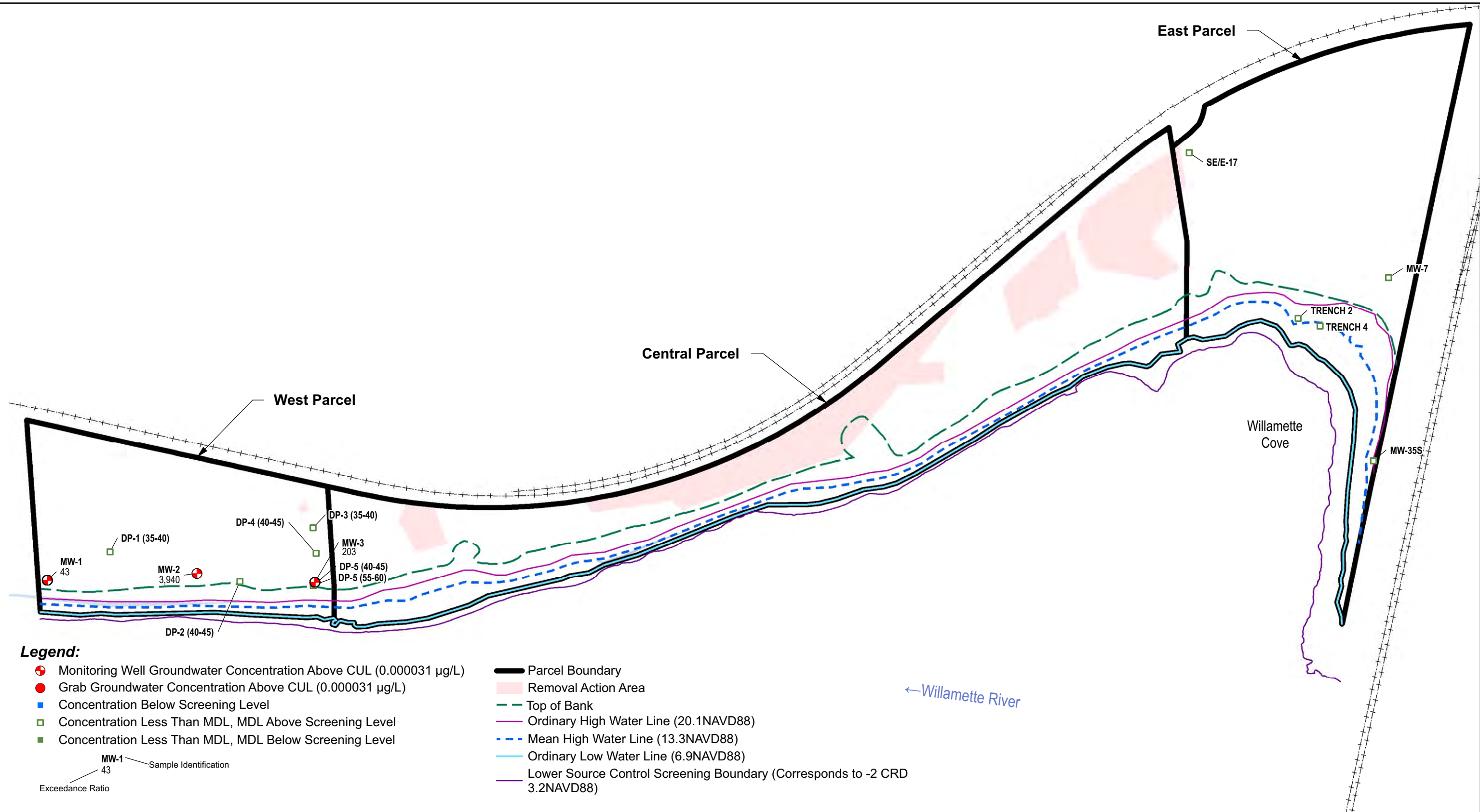


Basemap prepared using spatial data from Metro (2010-2017), Apex, Formation Environmental, and Hart Crowser.
Coordinate System: NAD83 HARN StatePlane Oregon North FIPS 3601 (Intl Feet).

I:\Client\Port of Portland\00-Ph905\05 WC\01 Repts and Wk Plans\19 GW SOE SCAE\2023 UpdateApp\320001056-17 I-4 (SLV Exceedances - TCDD in GW).des



I:\Client\Port of Portland\00-PI\905105 WC\01 Repts and Wk Plans\19 GW SOE SCAE\2023 Update\Map\15 CL Exceedances - DDD in GW).des



Basemap prepared using spatial data from Metro (2010-2017), Apex, Formation Environmental, and Hart Crowser.
Coordinate System: NAD83 HARN StatePlane Oregon North FIPS 3601 (Intl Feet).

CUL Exceedances - 4,4-DDD in Groundwater Updated Groundwater Source Control Evaluation Willamette Cove Upland Facility Portland, Oregon			
 APEX Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 320001056-17	Drawn: JP	Approved: SM
	August 2023		