Hylebos Marsh Interim Action Plan

Taylor Way and Alexander Avenue Fill Area

PUBLIC COMMENT REVIEW DRAFT

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Port of Tacoma

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The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.

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Abbreviations and Acronyms

AO	Agreed Order No. DE 14260
AO PLPs	General Metals of Tacoma, Occidental Chemical Corporation, and Burlington Environmental LLC
APHIS	Animal and Plant Health Inspection Service
bgs	below ground surface
BMPs	best management practices
the City	City of Tacoma
CMP	Compliance Monitoring Plan
CUL	cleanup level
Ecology	Washington State Department of Ecology
EO	Enforcement Order No. DE 19410
FEMA	Federal Emergency Management Agency
ft	feet
HASP	health and safety plan
IAP	interim action plan
LWCHP	Lower Wapato Creek Habitat Project
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
NRDA	Natural Resources Damages Assessment
NWSA	Northwest Seaport Alliance
PEM	Palustrine, Emergent, Marsh
PCB	polychlorinated biphenyl
the Port	Port of Tacoma
the Property	Hylebos Marsh (Pierce County tax parcels 0321263045 and 0321352064)
RIFS	remedial investigation and feasibility study
SLR	sea level rise
TWAAFA	Taylor Way and Alexander Avenue Fill Area
USDA	U.S. Department of Agriculture
WAC	Washington Administrative Code
WSDA	Washington State Department of Agriculture

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1 Introduction

On behalf of the Port of Tacoma (the Port), Maul Foster & Alongi, Inc. (MFA), has prepared this draft interim action plan (IAP) to address hazardous substances and auto fluff present on the eastern portion of Hylebos Marsh (Pierce County tax parcels 0321263045 and 0321352064; the Property) (see Figure 1-1). The Property is part of the Taylor Way and Alexander Avenue Fill Area (TWAAFA) site.

The Washington State Department of Ecology (Ecology) entered Agreed Order No. DE 14260 (AO) with General Metals of Tacoma, Occidental Chemical Corporation, and Burlington Environmental LLC (AO PLPs). The AO requires the AO PLPs to prepare several deliverables, including a Remedial Investigation and Feasibility Study (RIFS) report, and a draft Cleanup Action Plan for the TWAAFA site. These deliverables are currently in progress for the TWAAFA site.

Simultaneous with the AO issuance, Ecology issued Enforcement Order (EO) No. 19410 to the Port to require the Port to work jointly with the AO PLPs in completing the work under the AO (Ecology 2020). The Port is performing work required on Port-owned properties under the EO, including the Property. The Port's cooperation with the AO PLPs to complete the required work at the TWAAFA site is ongoing. The work proposed in this IAP is administratively considered an interim cleanup action for the TWAAFA site. This interim action is designed to support the preferred final remedy identified in the FS and does not preclude consideration of additional remedial actions on the Property.

1.1 Regulatory Framework and Purpose

This draft IAP is for the Property, two Port-owned parcels within the TWAAFA site (Pierce County tax parcels 0321263045 and 0321352064; the Property). Contamination associated with auto fluff was cited in the EO as one of several reasons Ecology chose to include the Property in the TWAAFA site.[1] Auto fluff is pulverized or fragmented auto debris, including wire, glass shards, upholstery, tire shards, paint chips, metal, string, plastic, and rubber, intermixed with sand, gravel and silt (SAIC 1990). The EO noted that auto fluff originated from General Metals of Tacoma operations, and that elevated concentrations of arsenic, cadmium, chromium, copper, lead, zinc, petroleum hydrocarbons, and polychlorinated biphenyls (PCBs) have been detected in auto fluff samples from the TWAAFA site. Additionally, detections of tetrachloroethene (PCE) and trichloroethene (TCE) in soil colocated with lime waste were identified within a boring on the Property (TWA-SB-12, MFA 2024). The presence of PCE and/or TCE in lime waste is considered indicative of lime solvent sludge, from the nearby Occidental Chemical Corporation facility.

An interim action may be proposed by the Port under the EO. The Port has proposed to conduct an interim action to address hazardous substances and auto fluff fill material on the Property to expedite cleanup of this portion of the TWAAFA site, and to reduce costs of subsequent remedial action(s) if delayed due to the presence of the invasive Mediterranean vineyard snail.

The Mediterranean vineyard snail (*Cernuella virgata*), an invasive species, was detected on the Property in 2005. For nearly 20 years, the Port has been working with Washington State Department

[1] Section V. FINDINGS OF FACT, F.

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of Agriculture (WSDA) and the U.S. Department of Agriculture (USDA) to eradicate the snail. This nonnative snail is extremely destructive to crops, especially grains, and its presence at the Port poses a significant threat to Washington's and the nation's agriculture and natural resources. A summary of the Port's eradication efforts through 2024 is shown in Appendix B.

The invasive snails once infested over 300 acres on the Blair and Hylebos peninsula but are currently limited to the Property. The eastern portion of the Property differs from other previously infested properties because it contains wetland areas that act as a refuge for the snail population. Due to the urgent need to eradicate the vineyard snails from the Property, the Port is permitting the Project to remove the wetlands entirely, as described in Section 2.1.2.

This IAP has been prepared to meet the requirements of the Work to be performed under the EO. The IAP evaluates interim actions and selects the preferred action for addressing auto fluff on the eastern portion of the Property. The IAP is consistent with the requirements of Washington Administrative Code (WAC) Section 173-340-430 of the Model Toxics Control Act (MTCA). The Port would integrate implementation of the IAP with the on-going snail eradication effort.

This IAP was prepared to be consistent with requirements described in Section 173-340-430(7) of the WAC. These requirements include, as appropriate:

- A description of the interim action—Section 5
- Information from the applicable subsections of the draft RIFS (DOF 2025)—Section 2
- Applicable design and construction requirements—Section 5
- Compliance monitoring—Section 5.8
- A health and safety plan—Appendix C
- An inadvertent discovery plan-Appendix D
- A sampling and analysis plan—Appendices E and F; See also Section 5.8

2 Site Background and Conditions

This section summarizes the background, geology, hydrogeology, and environmental conditions at the Property based on previous environmental investigations and field observations at the TWAAFA site.

2.1 Property Background

Located at 1205 Alexander Avenue and 1300 Taylor Way in Tacoma, Washington, the Property encompasses approximately 15.7 acres on the western portion of the TWAAFA site (Pierce County tax parcels 0321263045 and 0321352064, see Figure 2-1). From 1946 until at least 1991, the TWAAFA site received fill material including lime waste, lime solvent sludge, auto fluff, and other waste materials. Auto fluff placed on the neighboring Stericycle property extends onto the eastern portion of the Property corresponding with a topographically distinctive steeply sloped area (Sloped Area). A former road may have been used to transport fill materials across the Property for

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placement in other areas in the TWAAFA site (CRETE 2020). The Property is undeveloped with low-lying vegetated areas present. In May 2024, three Category III wetlands were delineated at the Property (Confluence 2024) (see Figure 2-1).

The City of Tacoma (City), by way of Tacoma Public Utilities, currently owns an easement recorded with the Property for the purposes for settling natural resource damage assessment (NRDA) liability for the Commencement Bay Nearshore Tideflats Superfund site. The easement was recorded in 1998. In 2008, The City and the Port entered into an agreement to substitute a new habitat project in lieu of the planned project on the Property (City and Port of Tacoma 2008) generally located at 1621 Marine View Drive; the NRDA Trustees agreed to the substitution of the habitat site, as it was comparable or better in size, type, location and benefits, and comparable or greater natural resource values as provided by the original Hylebos Marsh site (NOAA 2008). The substituted habitat restoration project—the Place of Circling Waters, Twulshootseed name qal'qalək(w)alq(w)u?— is a 30-acre complex of aquatic, riparian, and upland habitat located at the mouth of Hylebos Creek and is connected to several other restored areas along the Creek. The habitat restoration project was constructed in 2011.[2] Therefore, the easement is no longer necessary to remain on the Property. The Port is currently working with the City and the other NRDA trustees (including the Department of Ecology) to remove the easement (See Section 5.9).

A chain-link fence separates the Property from the adjacent Stericycle property to the east. Vegetation including trees, shrubs, and invasive Himalayan blackberries are present in the northwest corner and along the eastern fence line on the Property.

2.1.1 Invasive Snails

The invasive Mediterranean vineyard snail was first detected in the Port of Tacoma industrial area in November 2005. A formal survey delineated at least a 300-acre infestation area. Beginning in 2007, WSDA and USDA sought a voluntary eradication program within the Port. In the subsequent years, the Port, other property owners and the WSDA worked together using various eradication strategies, which included vegetation management, debris removal, molluscicide application and steaming soil to kill all life stages of the snail. Snail populations are now limited to a small section of the Hylebos Marsh property. In 2023, 146 juvenile and adult snails were detected at the Property in areas previously steam treated (see *2023 Vineyard Snail Eradication Activities Report* – Appendix A). Adult snails are small, 2 cm across or less, and their eggs can be as small as 1.5 millimeters. Adults mate and lay eggs in autumn and winter. Eggs buried in shallow topsoil are difficult to identify. During hot, dry summer conditions, snails enter dormancy, later emerging during rainy periods (Washington Invasive Species Council 2026).

According to WSDA and USDA, the invasive snail threatens Washington State's and national grain industries. Previously introduced to Australia, the snail has economically devastated the grain industry. WSDA, USDA, and Washington Grain Commission are gravely concerned with the risk of the snail spreading and are insistent that the Port to keep the snail contained and localized to the Hylebos Marsh Property until final eradication occurs to protect agriculture and the nation's food supplies. The existing wetlands have confounded eradication efforts while also exacerbating the risk of snail transport elsewhere due to increased wildlife activity on or near the wetland (Appendix A).

[2] https://www.portoftacoma.com/environment/habitat-restoration

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The planned eradication effort involves grading the site and filling the wetlands, while placing approximately two feet of consolidated fill material over areas with known vineyard snail populations. The project will impact 5.446 acres of degraded, Category III Palustrine, Emergent, Marsh (PEM) wetland. The wetland impacts are being permitted through a City of Tacoma Critical Area's Development Permit and an Ecology Administrative Order. The Port proposes to mitigate the wetland impacts through a combination of permittee responsible-concurrent mitigation at two Port owned properties (Parcel 12 and Parcel 37D) and use of advance mitigation credits from the Port's Lower Wapato Creek Habitat Project (LWCHP) Advance Mitigation site. The Port has coordinated with Ecology to reach agreement on proposed mitigation actions and quantities including 1.8 acres from LWCHP, re-establishment of 4.128 acres of wetland, and enhancement of .92 acres of wetland.

No vegetation will be removed from the Property during the eradication effort. Vineyard snail eradication best managements practices (BMPs) will be implemented during the grading and filling on the Property until eradication is complete. BMPs include, but are not limited to, controlled equipment areas with hot-water pressure wash and/or salt spray, visual inspections of equipment prior to removal from Property, application of snail bait on gravel pad and salt applications of pad at exits of the Property, and no movement of soil or vegetation off the Property for a minimum of three years without prior written approval from the Port in coordination with WSDA and/or USDA to confirm eradication is complete. This work will be integrated with this IAP.

2.1.2 Property Redevelopment

The Port is in the process of negotiating a 50-year ground lease agreement that includes the Property (Pierce County tax parcels 0321263045 and 0321352064) and adjacent parcels to the Property (Pierce County tax parcels 5000350061, 0321263016, 2275200260, 2275200371, 2275200400, 2275200410 and 2275200420). The prospective tenant is proposing to build approximately 574,000 square feet of Cold Storage Facilities, office space, shipping and receiving, truck loading, and a rail dock. The proposed project is estimated to add up to 400 new or expanded jobs, $43M in annual wages, 15,000 trucking loads per year, and 26 million pounds of food storage capacity. The lease commencement date is premised on the estimated construction completion date of this proposed interim action (estimated October 1, 2026). Substantive engineering, design, and permitting will commence after the lease agreement is executed during early 2026 (Port of Tacoma 2025). A preliminary conceptual development plan is shown in Figure 2-2.

2.2 Geology

In the early 20th century, the area including the Property consisted of tidal marsh and tide flats of the Puyallup River Delta. The Blair and Hylebos Waterways were dredged several times from 1930 through the 1970s. This dredged material was placed as fill in the surrounding area. The following lithological units in order of increasing depth have been identified for the TWAAFA site (DOF 2020, 2025):

- Fill unit: composed of heterogenous, anthropogenic fill materials. Depending on specific location within the TWAAFA site, the upper fill unit consists of a gravel road base, unconsolidated fill sediments, lime waste (consisting of light-colored, unconsolidated, fine-grained particles; some lime waste encountered has been impacted with PCE or TCE [referred to as lime solvent sludge]; other areas of lime waste contain no detections of PCE or TCE), auto fluff, wood waste, and

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demolition waste. At the Property, the upper fill unit is between 5 and 19.4 feet (ft) thick (CRETE 2020, MFA 2024, and DOF 2025).

- Silt unit: brown to gray and soft, with local areas containing clay, sand, and organic matter, and appears to be laterally continuous across the TWAAFA site. Previous deep borings at the Property identified the silt unit as between 7 and 11.5 ft thick.
- Sand unit: Underlying the silt unit is a fine- to medium-grained sand deposit, with trace amounts of silt. The sand unit appears to be continuous across the TWAAFA site with thickness ranging from 11 to 14 ft.
- Deeper interbedded sand and silt unit: ranging from less than one inch thick to multiple ft thick. Material appears to be continuous across TWAAFA site and is organic-rich with peat noted in some historical borings.

On August 12 and 13, 2024, under MFA oversight, Anderson Environmental Contracting, LLC, of Kelso, Washington, advanced eight borings via direct-push methods to a maximum depth of 20 ft below ground surface (bgs) on the Property. Soil types encountered during drilling generally consisted of sandy gravel/gravelly sand with silt overlaying sand with silt, silty sand, or sand to the maximum depth observed of 20 ft bgs. Fill materials encountered during drilling included layers of woody debris and auto fluff intermixed with white powdery or paste-like material (assumed to be lime waste), and clean sand (assumed to be dredge spoils). Auto fluff was observed between ground surface and approximately 17 feet bgs (MFA 2024). Lime waste was observed from 5 to 6.1 ft bgs and 8.5 to 18.3 ft bgs in borings TWA-SB-12 and TWA-SB-13, respectively. Logs from borings and wells advanced on the Property are included in Appendix A. Table 2-1 provides a summary of information related to all the borings and wells advanced on the Property.

2.3 Hydrogeology

The TWAAFA site, including the Property, has three hydrogeological units (listed in order of increasing depth):

- Shallow aquifer: the saturated unconfined shallow groundwater unit thickness varies seasonally and is thickest in late winter or early spring. Groundwater mounds near the center of the TWAAFA site and generally flows southwest beneath the Property.
- Silt confining layer: the former mudflat, which underlies the shallow and deep aquifer units, is continuous and contains clay, sand, and organic matter as described above.
- Deep aquifer: deltaic sands are present throughout the tide flats, with silt layers encountered deeper than 50 ft bgs. The top of the deep aquifer was identified in previous borings at the Property as between 18.5 and 24.5 ft bgs; it extends to at least 60 ft bgs.

During the August 2024 field investigation at the Property, groundwater was encountered between 2 and 19.5 ft bgs, representing the significant topographic changes between boring locations (MFA 2024).

2.4 Hazardous Substances

Previous investigations identified auto fluff and lime solvent sludge in the upper fill unit on the western portion of the Stericycle property, which extends beyond the parcel boundary and onto

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portions of the Property (see Figure 2-1). The average elevation on the Stericycle property is approximately 3 to 5 ft higher than the average downslope elevation of the Property boundary. Anthropogenic fill (including auto fluff) corresponds to a portion of the hummocky area on the Property that slopes upward to the Stericycle property.

Landfill materials included byproducts of auto scrapping (auto fluff), lime solvent sludge, wood waste, and other lime wastes (Ecology 2020). Auto fluff is a potential source of petroleum hydrocarbons; metals, including arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, and total cyanide; volatile organic compounds (VOCs); semivolatile organic compounds (SVOCs); and PCBs (DOF 2020, 2025). Lime solvent sludge is a source of PCE and TCE (Ecology 2020, DOF 2025). Investigations were conducted on the Property between 1991 and 2024; all existing and available soil and groundwater data are provided in reports investigating the nature and extent of contamination for the TWAAFA site in the *Final Data Gaps Work Plan* (DOF 2020); the *Data Gaps Data Report, Tacoma Way and Alexander Avenue Fill Area Site, Tacoma, Washington* (DOF 2022); the *Hylebos Marsh: Subsurface Investigation* report (MFA 2024) and the *Draft Remedial Investigation and Feasibility Study Report, Tacoma Way and Alexander Avenue Fill Area Site, Tacoma, Washington* (DOF 2025). A summary of the investigation results for the Property is presented for soil and groundwater in the next sections.

2.4.1 Soil

All soil data from investigations conducted from 1991 through 2024 are summarized in Table 2-2. Data collected prior to 2024 shows all locations are below MTCA Method A CULs for industrial properties (MTCA Industrial CULs); however, these soil samples were generally collected outside of the inferred location of the autofluff.

In August 2024, MFA conducted a subsurface investigation to evaluate the extent of autofluff on the Property and to characterize the material for hazardous substances. MFA assessed the extent of auto fluff based on visual observations from three hand auger (HA-1 through HA-3) and eight soil boring locations (TWA-SB-09 through TWA-SB-16, See Figure 2-3). Of these 11 investigation locations, auto fluff was visually identified in three borings: TWA-SB-11, TWA-SB-12, and TWA-SB-13. The results show exceedances of MTCA Industrial CULs at two locations: TWA-SB-11 and TWA-SB-12, for petroleum hydrocarbons and metals as well as PCE and TCE in TWA-SB-12. Although boring TWA-SB-13 was advanced through auto fluff, insufficient volume was available to characterize this interval, and the soil sample beneath the auto fluff interval did not exhibit elevated contaminant concentrations (see Appendix A, MFA 2024). A white chalky material, consistent with lime waste, with a strong rancid odor was observed from 8.5 and 18.3 feet bgs and 5 to 6.1 feet bgs in borings TWA-SB-12 and TWA-SB-13, respectively. Concentrations of PCE and TCE in soil were identified above MTCA Industrial CULs[3] from TWA-SB-12 at 9 and 18.5 feet bgs (see Table 2-3). The detected concentrations of PCE and TCE at this location are also above the MTCA soil cleanup level for PCE and TCE for protection of marine surface water, groundwater to surface water pathway (0.029 and 0.0044 mg/kg for PCE and TCE, respectively), identified as a preliminary cleanup level for the TWAAFA site (DOF 2025). The presence of PCE and TCE in soil at this location is characteristic of lime solvent sludge, from the Occidental Chemical Corporation facility. Therefore, measurement of PCE and TCE concentrations in groundwater within this area of the Property is proposed to assess the

[3] The Method A industrial cleanup level for PCE and TCE is based on protection of groundwater for drinking water use, using the procedures described in WAC 173-340-747(4). Groundwater in the Tacoma Tideflats is generally recognized as non-potable and criteria are selected to be protective of surface water.

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unsaturated (vadose zone) soil-to-groundwater-to-surface water pathway empirically. This will inform the ongoing RIFS for the TWAAFA site, as discussed in Section 5.10.1.

Soil locations with hazardous substances exceeding screening criteria are shown on Figure 2-3.

2.4.2 Groundwater

All groundwater data from investigations conducted 1991 through 2023 are summarized in Table 2-3. Groundwater data were collected from monitoring wells and reconnaissance borings (see Table 2-1 and Appendix A). Groundwater data was screened to MTCA Method A cleanup levels. Final cleanup levels have not been established for the TWAAFA site and will be evaluated in the forthcoming RIFS. The results show exceedances above MTCA Method A cleanup levels primarily for diesel and motor oil-range hydrocarbons and metals as summarized in Table 2-3. Groundwater sampling locations are shown on Figure 2-4.

2.4.3 Extent of Autofluff

The approximate lateral extent of auto fluff is shown in Figure 2-1 and is located within the central portion of the Sloped Area along the eastern Property boundary. Based on a topographic and boundary survey (Sitts & Hill 2024) and MFA's field investigation at the Property, auto fluff generally exists at depths of ground surface to approximately 17 feet, corresponding to elevations between 4.8 ft and 19.8 ft mean lower low water. The auto fluff layer thickness is estimated to be between 3.0 and 10.1 ft. During the August 2024 investigation, shallow groundwater at the Property was observed between 2 and 19.5 ft bgs. However, auto fluff present in the fill unit at locations TWA-SB-11, TWA-SB-12, and TWA-SB-13 is above the water table and not in contact with shallow groundwater (MFA 2024).

It also appears lime solvent sludge is present in soil between 8.5 to at least 18.5 feet bgs TWA-SB-12. Lime solvent sludge is intermixed with auto fluff material at TWA-SB-12.

3 Interim Action Alternative Evaluation

The alternatives proposed below are considered interim actions, developed in accordance with WAC 173-340-430. An interim action is being proposed on the Property as it has been determined to be technically necessary to reduce a threat to human health by eliminating or substantially reducing one or more pathways for exposure to hazardous substances during snail eradication efforts. This interim action was designed to protect workers, ensure contamination is contained and/or managed on-site appropriately during development.

The Property is included in the larger TWAAFA site that is undergoing a formal RIFS process with Ecology oversight. The interim actions considered in this IAP are designed to support cleanup action evaluations in the forthcoming RIFS and will not foreclose future reasonable alternatives for the final cleanup action as evaluated in the RIFS.

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3.1 Alternatives Considered

Auto fluff is heterogeneous and a source of several hazardous substances including metals, SVOCs, VOCs, and PCBs. Lime solvent sludge is a source of PCE and TCE. The presence of invasive vineyard snails in soil is a complicating factor for remedial options involving excavation and offsite disposal before snail eradication is completed. Therefore, the remedial technologies that can address hazardous substances in soil at concentrations exceeding MTCA Industrial CULs in concert with the planned eradication effort are excavation and capping.

The proposed actions in this IAP are considered preliminary until the completion of the RIFS for the TWAAFA site. Additional actions may be considered for the Property as part of the final cleanup evaluation for the TWAAFA site. A supplemental investigation is proposed to be conducted concurrently with the implementation of any of the proposed interim actions below to evaluate groundwater concentrations in the vicinity of TWA-SB-12 and to inform potential future remedial actions for lime solvent sludge.

Under each alternative, the presence of snails is a complicating factor for contaminated soil management. Hazardous substances present in the Sloped Area along the eastern Property boundary will be either excavated immediately (Alternative 1) or capped (Alternative 2). Under Alternative 3, capping would occur first, and excavation would be conducted after snail eradication efforts have been certified complete by WSDA.

3.1.1 Alternative 1—Excavation and Off-Site Disposal

Excavation and off-site disposal would remove soil with hazardous substances at concentrations exceeding MTCA Industrial CULs from the Property, dispose of material at a permitted landfill, and backfill with clean material. The excavation of hazardous substances would occur concurrent with snail eradication efforts (grading and filling the rest of the Property). A sheet pile wall along the eastern Property boundary would be installed to support removal and off-site disposal of excavated material due to the grade difference along the boundary. The sheet pile wall is a necessary component of the excavation to ensure the adjacent property grade does not slough onto the Property. This alternative assumes removal of approximately 7,700 bulk cubic yards of soil mixed with auto fluff, based on an average excavation depth of approximately 6.5 feet bgs across the approximate extent of autofluff area shown on Figure 2-1.

This alternative is permanent and is expected to remove all hazardous substances above MTCA Industrial CULs in soil over the short term. Vineyard snails are hermaphroditic, and a single snail could generate a new invasive population elsewhere where suitable habitat is present. Removal or destruction of all individuals or eggs is likely not practicable given the potential risks to agriculture if they are allowed to spread to other areas. Confirmation of full snail removal would be technically challenging and uncertain. Excavated soils and surrounding soils/autofluff would be regulated by Animal and Plant Health Inspection Service (APHIS).[4] under the Federal Plant Protection Act, as moving plant pests, and would require an interstate movement permit under Title 7 CFR 330.203(c)As such, excavated material must be transported by an APHIS-certified driver, shipped in sturdy, leak-proof department of transportation-rated containers, and be disposed of via incineration

[4] APHIS considers an organism to be a plant pest if the organism directly or indirectly injures, causes damage to, or causes disease in a plant or plant product, or if the organism is an unknown risk to plants or plant products. Movement of plant pests within the state or to other states will require and APHIS interstate permit.

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and direct burn to an APHIS-approved facility (Title 7 Subtitle B CFR 330.203(c)(1) and (3) Two hazardous waste incineration facilities located in Utah and Nevada, respectively, were identified that would accept the waste present at the Property. Due to the travel distance (i.e., between approximately 870 and 990 miles) and APHIS requirements to transport the waste from the Property to the nearest incineration facilities, this alternative would be prohibitively expensive compared to the preferred alternative (see Section 3.2). Furthermore, USDA and WSDA support maintaining containment and localization of the vineyard snails, and likely would not support the transport of soil elsewhere if the vineyard snails or eggs may be present (Appendix A). There is also low confidence on the practicability of segregating soil containing snails from the rest of the material; the snails eggs are 1.5 mm or smaller in size and are not readily observable. Therefore, this alternative rates poorly on the management of short-term risks, technical and administrative implementability, and the consideration of public concerns.

An engineer's estimate of probable cost for excavation and off-site disposal is $8,427,000 (see Table 3-1). The estimate of probable cost does not include costs associated with wetland compensatory mitigation because it is an element of the snail eradication effort (as discussed in Section 2.1.1). The estimate also does not include costs for the full grading and filling activities for the entire Property because they are also being implemented as part of the eradication effort. This estimate is considered to be +50 percent/-30 percent at a similar confidence interval to a feasibility study.

3.1.2 Alternative 2—Containment and Capping

Containment and capping would prevent direct contact exposure by creating a physical barrier between the auto fluff and hazardous substances and potential receptors. This alternative would be performed concurrent with wetland filling and grading to eradicate the snails; the Property will be graded north, south, and west of the central portion of the Sloped Area, where auto fluff and soil hazardous substances (above MTCA Industrial CULs) are present. A containment wall (e.g. ecology-block or similar) will be installed to the north, south, and west of soil containing autofluff to support the placement of clean fill material behind the containment wall. Approximately 850 cubic yards of material will need to be excavated to facilitate the construction of the containment wall. It is anticipated that this excavated soil would be placed in the containment wall area. Following installation of the containment wall, demarcation fabric will be placed within the containment area, followed by placement of excavated and fill soil, gravel fill, and an asphalt cap. The auto fluff will be consolidated and graded so that fill can be placed on top, compacted, and then graded to support the placement of the asphalt cap. Earthmoving activities that disturb auto fluff will be conducted within a delimited work area with appropriate erosion and sediment controls. Following consolidation of the auto fluff, a demarcation geotextile will be placed over the consolidated materials to both provide future visible warning of contaminated material within as well as to limit movement of auto fluff during cap material placement. Equipment used to consolidate the autofluff will be cleaned before leaving the work area. The surface of the containment area will be finished with asphalt paving as a cap to reduce infiltration of precipitation to minimize potential soil leaching to groundwater. Because soil contamination will remain in place, institutional controls will be required for the Property and should be considered during the FS process and preferred final remedy selection. Proposed institutional controls for the interim action are discussed in Section 5.9.

This alternative will eradicate the vineyard snails by covering the existing population with fill and accommodate the filling of adjacent wetlands to eliminate viable snail habitat. To verify the snails

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are eradicated at the Property, WSDA will conduct annual monitoring for a duration of three years post capping. Dogs trained to detect the presence of snails will verify the effectiveness of the eradication effort.

This alternative is recommended because it is protective of human health and the environment and is the most practicable and implementable interim action alternative that will support a future final remedy. This alternative will not preclude or limit future cleanup options for the final remedy. This is the best alternative to limit the risk of transporting snails off the Property.

An engineer's estimate of probable cost for capping is $1,435,000 (see Table 3-2). The estimate of probable cost does not include costs associated with wetland compensatory mitigation because it is an element of the eradication effort (see Section 2.1.1). The estimate also does not include costs for the full grading and filling activities for the entire Property because they are also being implemented as part of the eradication effort. This estimate is considered to be +50 percent/-30 percent at a similar confidence interval to a feasibility study.

3.1.3 Alternative 3—Containment, Capping, and Post-Eradication Excavation

As described for Alternative 2, containment and capping would prevent direct contact exposure by creating a physical barrier between the auto fluff and potential receptors. Containment and capping would be performed in areas where auto fluff and soil hazardous substances (above MTCA Industrial CULs) are present concurrent with wetland filling and grading to eradicate the snails. A containment wall (e.g. ecology-block or similar) will be installed and demarcation fabric will be placed within the containment area, followed by placement of soil, gravel fill, and an asphalt cap as described for Alternative 2.

Under Alternative 3 it is also assumed that excavation of capped material would occur after three years when WSDA confirms snail eradication; as noted above WSDA will conduct annual monitoring for a duration of three years post capping using dogs trained to detect snails. A sheet pile wall would be installed along the eastern Property line boundary to support removal and off-site disposal of capped material due to the grade difference along the property line. The sheet pile wall is a necessary component of the excavation to ensure that the adjacent property grade does not slough onto the Property. It is assumed that capped material will be disposed of offsite. This alternative assumes removal of approximately 7,500 cubic yards of soil mixed with auto fluff This assumes an average excavation depth of approximately 6.5 feet bgs across the approximate extent of autofluff area shown on Figure 2-1. To access the underlying auto fluff, approximately 5,900 cubic yards of clean soil and gravel cap material would be excavated. Clean soil and gravel fill would be disposed of at a permitted landfill; costs may be reduced if the cap material can be reused as excavation backfill. Waste disposal of the contaminated soil containing auto fluff and lime solvent sludge would occur once eradication efforts are complete. The contaminated soil exhibits concentrations PCBs above 10 mg/kg and therefore, may be considered dangerous and/or hazardous wastes requiring disposal to a Subtitle C facility. For cost estimating purposes, two scenarios (Alternatives 3a and 3b), hazardous and non-hazardous disposal, were evaluated to provide the anticipated range of waste disposal costs. Additional waste characterization and profiling would be conducted before construction to determine waste designation and final disposition to an appropriate facility. The area would then be backfilled with clean material.

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This alternative is less costly than Alternative 1 since waste transport to incineration facilities would not be required, and associated APHIS requirements would not apply. The alternative is more costly than Alternative 2 because excavation of capped material would occur. Short-term management risks compared to Alternative 2 are considered greater due to conducting excavation. Implementability rates lower than Alternative 2 since snail eradication will need to be certified to obtain associated permits for transport and disposal.

An engineer's estimate of probable cost for capping and post eradication disposal is between $5,027,500 and $7,400,500 (see Tables 3-3 and 3-4). The estimate of probable cost does not include costs associated with wetland compensatory mitigation because it is an element of the eradication effort (see Section 2.1.1). The estimate also does not include costs for the full grading and filling activities for the entire Property because they are also being implemented as part of the eradication effort. This estimate is considered to be +50 percent/-30 percent at a similar confidence interval to a feasibility study.

3.1.4 Consideration of Public Concerns

The interim action is subject to public comment as required under the EO. Alternatives were evaluated based on anticipated public concerns. The Port meets quarterly with representatives from the Puyallup Tribe of Indians regarding the TWAAFA site and they have been informed of the planned eradication, remediation and lease discussions.

3.2 Evaluation of Alternatives

Under WAC 173-340-430 for interim actions, an evaluation of alternative interim actions was conducted to inform the selection of the proposed interim action. To evaluate the alternative actions, the Port considered FS criteria, where applicable, and performed a disproportionate cost analysis.

A final cleanup action for the TWAAFA site has not been selected. The RIFS for the TWAAFA site will evaluate whether the interim action can be considered a final cleanup action.

None of the proposed interim action alternatives in this IAP preclude the ability to conduct additional/final cleanup action(s) on the Property as part of the TWAAFA site.

3.3 Disproportionate Cost Analysis

Alternatives 1, 2, and 3 all meet the general requirements outlined in WAC 173-340-430(2) minimum threshold requirements as defined in MTCA and were retained for further evaluation. A DCA is conducted to evaluate the alternatives as permanent solutions to the maximum extent practicable. The DCA follows the methods laid out in Ecology's *Guidance for Making Cleanups Permanent to the Maximum Extent Practicable* (Ecology 2025). The cost and benefits of each alternative are assessed by evaluation criteria. The specific criteria that must be evaluated are protectiveness, permanence, cost, long-term effectiveness, short-term risk, technical and administrative implementability, and consideration of public concerns as specified in WAC 173-340-360(5). The DCA is provided as Table 3-5. The forthcoming RI/FS for the TWAAFA site is required to explicitly address all DCA elements, while interim action alternative evaluations are required to "provide an explanation why the proposed alternative was selected" (WAC 173-30-430(7)(b)(ii)). The

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DCA provided meets WAC 173-340-430 requirements and generally conforms to FS-level draft DCA guidance (Ecology 2025) for purposes of identifying an interim action.

Implementation of Alternatives 1 and 3 increase the potential burden across multiple vulnerable communities due to the risk of transport of snail-infested contaminated soil across multiple communities which could add potential exposure to contaminated soil and release of invasive snails. Alternative 2 leaves soil impacts in place and significantly reduces the likelihood of potential exposure to contaminated soils and the spread of invasive snails to other areas.

Professional judgment and site-specific knowledge are used to assign the relative weight applied to each DCA criterion and to score each alternative on a scale of 1 (lowest) to 5 (highest) for the five DCA criteria. In accordance with MTCA's disproportionality test, costs are disproportionate to benefits if the incremental costs of an alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by that alternative over that of the lower cost alternative. MTCA prescribes that this disproportionality test proceeds in the direction of decreasing permanence (from the most permanent alternative to the next most permanent alternative).

3.4 Preferred Alternative

While Alternatives 1 and 3 are determined to be the more permanent remedies, the incremental benefits they would achieve are disproportionately costly to Alternative 2. Alternative 2 is expected to eliminate exposure pathways to hazardous substances on the Property and prevent the spread of vineyard snails offsite while supporting their eradication on the Property. Construction to implement this interim action would be conducted concurrent with filling and grading activities to fill the wetlands and snail eradication.

Implementation of Alternative 2 would not preclude or limit future cleanup options for the final remedy identified in the RIFS for the TWAAFA site. Flexibility to identify and implement additional cleanup in this area, if any, as the TWAAFA site cleanup process proceeds would be retained.

3.5 Proposed Cleanup Levels and Remedial Action Objectives

CULs have not been finalized for the TWAAFA site. Implementation of the selected alternative will be guided by remediation levels that incorporate CULs *and* other indications of hazardous materials. WAC 173-340-355 defines development of cleanup action alternatives that include remediation levels, which are appropriate for the conditions encountered at the Property.

The proposed CULs for this interim action on the Property are MTCA Industrial CULs which account for potentially complete future exposure pathways at the Property, including dermal contact, incidental ingestion, and inhalation during development. As described in Section 2.4.1, chemical concentrations in soil exceeding MTCA Industrial CULs were identified in investigation locations TWA-SB-11 and TWA-SB-12.

Remediation action objectives may also be based on other methods of identifying hazardous waste, such as physical appearance. At the Property, the extent of auto fluff has been visually documented laterally and vertically along the eastern boundary, specifically at investigation locations TWA-SB-11, TWA-SB-12, and TWA-SB-13. Further contaminated fill material (i.e., autofluff comingled with lime

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solvent sludge) is present at TWA-SB-12. Auto fluff was not visually documented in the hand auger (TWA-HA-01 through 03) or the remaining soil boring (TWA-SB-09, TWA-SB-10, TWA-SB-14 through 16) locations.

Therefore, for implementation of the selected alternative, exceedance of remediation action objective criteria includes areas where auto fluff is visually documented during prior investigation at the Property (i.e., around TWA-SB-11, TWA-SB-12, TWA-SB-13, and TWA-SB-14)(see Figure 2-2). Under this framework, lime solvent sludge containing elevated PCE/TCE, which has been observed at SB-12, would also be addressed because it is collocated where autofluff is present. The selected alternative will not be implemented in the other investigation areas because chemical concentrations are below MTCA Industrial CULs and because auto fluff was not visually observed at those locations.

Other CULs may be considered when evaluating a final cleanup action for the Property. Preliminary CULs identified in the draft RIFS also consider criteria related to the protection of soil to groundwater to surface water (DOF 2025). Additional assessment of this potential pathway is proposed with additional groundwater sampling in the vicinity of TWA-SB-12, as described in Section 5.10.1. The data collected from this assessment will be used to inform whether additional cleanup action(s) may be required to address groundwater as part of a final remedy for the TWAAFA site.

Flexibility to identify and implement additional remedies or controls in this area to meet final CULs and remedial action objectives for the TWAAFA site would be retained.

3.6 Ecological Evaluation

The selected Alternative 2 will address any potential ecological risks within the capped area. The alternative calls for placement of soil, gravel fill, and an asphalt cap which will cover contaminated soil to prevent exposure to plants and wildlife. Any additional measures to meet final cleanup goals protective of ecological receptors will be identified as part of the TWAAFA site cleanup process.

4 Regulatory Rationale for Interim Action

This section demonstrates that the proposed interim action satisfies MTCA requirements and expectations in WAC 173-340-430(1) through (5) for conducting an interim action.

4.1 Interim Action Purpose

The proposed interim action meets the MTCA purpose in WAC 173-340-430(1) of only partially addressing the cleanup of the Site. More specifically, the proposed IA "is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at a facility" (WAC 173-340-430(1)(a)). The threat to human health and the environment that is being substantially reduced is potentially

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complete future exposure pathways at the Property, including dermal contact, incidental ingestion, and inhalation.

4.2 General Requirements

The proposed interim action satisfies the interim action general requirements pursuant to WAC 173-340-430(2)(b) because the proposed interim action will "provide a partial cleanup, that is, clean up hazardous substances from all or part of the site, but not achieve cleanup standards."

4.3 Relationship to the Cleanup Action

The interim action satisfies the requirement in WAC 173-340-430(3) via WAC 173-340-430(3)(b) because none of the interim action remedial components will foreclose reasonable alternatives for the unknown final clean action. All of the active remediation components contemplated in draft RIFS (DOF 2025) for the Property are located within the proposed containment wall footprint (e.g., capping or excavation). Further, the containment wall and cap outlined in Section 5 is being designed so that this cap can be penetrated to facilitate any additional active remediation components within the containment wall area (e.g., in-situ solidification/stabilization, in-situ groundwater treatment) and then repaired following penetration, if determined necessary as part of the final cleanup action. Thus, all of the reasonable and practicable remedial components can still be implemented after the containment wall is installed, and the approximately 30,000 square foot asphalt cap is installed.

4.4 Timing

The proposed interim action satisfies the interim action timing requirement in WAC 173-340-430(4) because (1) an interim action "may occur anytime during the cleanup process" per WAC 173-340-430(4)(a), (2) the interim action will not be used to delay or supplant the cleanup process, and (3) the interim action will be followed by completing the RIFS and CAP.

4.5 Administrative Options

An interim action can be conducted under any of the MTCA administrative options, including agreed orders and enforcement orders (WAC 173-340-430(5)).

5 Interim Action Components

The final (100%) interim action design will consist of final plan sets and specifications for the containment wall and the asphalt cap as well as Engineer-prepared plans (i.e., Health and Safety Plan [HASP], Compliance Monitoring Plan [CMP], IDP, and Soil Management Plan [SMP]) that will accompany and supplement these final plan sets and specifications. The interim action design is currently in the preliminary (i.e., 30%) design phase. The preliminary design plan sets for the containment wall and asphalt cap are presented in Appendix F. Some of the key preliminary design

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concepts for the containment wall and asphalt cap are summarized in Sections 5.5 and 5.7, respectively. The HASP and the IDP are completed and included in this section, while the preliminary design for the SMP is summarized in this section. The design will be further developed and finalized as outlined in Section 6.2.

This section describes the elements of the proposed interim action and the associated elements for construction implementation. Construction will be performed in a manner consistent with the requirements of the WAC 173-340-400. Figures 5-1 and 5-2 depict the proposed interim action features in plan-view and cross section, respectively. Interim action construction activities will be overseen by the Port's environmental consultant.

5.1 Pre-Construction Activities

Prior to construction, the Port will obtain permits and approvals to support implementation of the interim action and grade and fill the Property. Permitting is discussed further in section 6.4.

The Port will support cultural Review Consultation with Ecology, Tribes, and the Department of Archaeology and Historic Preservation. This includes development of an inadvertent discovery plan that will guide field procedures if historic or cultural resources are encountered during excavation activities at the Property and identify necessary tribe notifications (see Section 6.1 and Appendix D).

The Port is working with a civil design firm to develop the containment wall and grading plans and specifications to include as part of the bid and permit packages. A geotechnical evaluation will be conducted at the Property by the Port in the locations where the walls are proposed as part of the engineering design to implement this IAP. Preliminary design drawings are included in Appendix F; the final designs that will be submitted as part of the bid package will be provided to Ecology.

5.2 Site Preparation

This section describes the site preparation elements that will be completed prior to implementation of the interim action. It is assumed that all earthwork activities will be conducted during the summer when the vineyard snails are dormant. Site preparation will include developing controlled exits and construction zones for different activities of the Property to align with the vineyard snail eradication area BMPs (see Appendix F). In the preliminary drawings, the following snail BMPs will be implemented in three different areas:

- The "Red Zone" is identified as Primary 1° VSEA (vineyard snail eradication area) Construction Step on the drawings,
- The "Red Zone Staging Area & Decon Facility with Controlled Exit(s)" is identified as 1° VSEA Staging Area, Decon Facility, and Controlled Exit(s) on the drawings,
- The "Orange Zone Staging Area & Wheel Wash with Visual Inspection & Controlled Exit(s)" is identified as 2° VSEA Construction Step on the drawings.

5.2.1 Health and Safety

The Health and Safety Plan (HASP) for MFA personnel to follow when consolidating potentially contaminated soils within the containment area is presented in Appendix C. The Remediation Contractor will prepare and implement its own HASP that is at least as stringent as the HASP

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provided in Appendix C for all interim action activities conducted by Remediation Contractor employees and subcontractors. Interim action specifications will also require the Remediation Contractor to ensure that their HASP meets the requirements of the final, Ecology-approved MFA HASP provided in Appendix C, and utilize 40-hour hazardous waste operations and emergency response-trained personnel with current refresher certifications for all interim action fieldwork. In the event that a construction activity, such as trenching, involves risk of contact with underlying contaminated soil or groundwater, personnel will adhere to the health and safety protocols included in the contractor's construction project documents.

5.2.2 Mobilization

The containment wall will be installed where indicated on the final design drawings; this location is based upon the eastern property line boundary and required offset for construction along a property line per Washington state building code.

Before excavation, the locations of subsurface utilities within 50 ft of the excavation areas will be identified by "One Call" public notification and a private utility locating company.

Exclusion zones using temporary fencing and warning tape and any additional appropriate site controls necessary will be established in accordance with the HASP prior to the start of construction (see Appendix C). The site will be secured and locked when the engineer or contractor is not present.

Equipment will be mobilized to the Property and is expected to include, but not be limited to, the following:

- Trackhoe, excavator, or equivalent
- Front-end loader
- Dump truck
- Vibratory hammer
- Water truck
- Support vehicles and equipment
- Baker tank(s)

5.2.3 Containment Area Designation

Based on boring data available and known history of the Property, the extent of the auto fluff fill correlates with the central portion of the Sloped Area extending from the Stericycle property toward the west and ending adjacent to the eastern extent of the wetlands in the center of the Property. Based on the previous investigations, the lateral area impacted by auto fluff is approximately 28,800 square ft (see Figure 5-1). Visual observations documented in boring logs (MFA 2024) combined with boundary and topographic survey data (Sitts & Hill 2024) indicate the auto fluff layer is approximately 3 to 10 ft thick at elevations between 4.79 ft and 19.84 ft mean lower low water.

Before construction begins, survey markers or construction staking will be used to identify the boundaries of the proposed containment area which includes areas of auto fluff as well as TWA-SB-14 to eliminate potential movement of hazardous substances to areas of the Property outside of the containment area. The plan view layouts of the containment wall and designated construction area are provided in Appendix F and will be further developed during engineering design.

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5.2.4 Well Decommissioning

Prior to site grading and capping activities, all monitoring wells on the Property (see Figure 5-1) will be decommissioned in accordance with WAC 173-160-381. A notice of intent consistent with WAC 173-160-151 will be submitted to Ecology at least 72 hours before starting work. Performance monitoring well locations will be identified in the TWAAFA feasibility study and/or cleanup action plan.

5.2.5 Clearing and Grubbing

The cap area is currently vegetated with grasses, invasive blackberries, and other brush. Several small trees (less than 6 inches in diameter) are located at the top of the slope. This vegetation will be cleared from the surface and consolidated to facilitate grading, filling, and capping activities. Any material generated during clearing and grubbing of vegetation during grading activities will be consolidated in an area of the Property for a minimum of three years and it is determined that the eradication of the vineyard snail is complete by the Port in coordination with USDA and/or WSDA. Appendix F provides BMPs for managing vegetation within invasive snail areas of the Property. The proposed location of the consolidated vegetation will be identified in future design.

5.2.6 Temporary Erosion and Sediment Control

Prior to the start of construction, a site-specific erosion and sediment control plan will be prepared, detailing the appropriate best management practices to be implemented during construction. Erosion and sediment controls will be designed to prevent the offsite migration of sediment and invasive Vineyard snails and snail eggs, and to prevent the sediment from leaving the construction area and flowing to the onsite wetlands (see Figure 2-1).

Anticipated BMPs include silt fencing, a wheel wash, and the covering of soil stockpiles when not in use, during rain or wind events, and overnight. Vineyard snail eradication BMPs include, but are not limited to, controlled equipment areas with hot-water pressure wash and/or salt spray, visual inspections of equipment prior to removal from Property, and no movement of soil or vegetation off the Property for a minimum of three years without prior written approval from the Port in coordination with USDA and/or WSDA to confirm eradication is complete.

A temporary erosion and sediment control plan is provided as Sheet C1.00 that aligns with snail eradication areas described in the BMP document provided in Appendix F and will be further detailed as the design progresses. All erosion-control measures will be installed before excavation activities begin and will be maintained throughout the construction effort.

5.2.7 Temporary Construction Access

The Property is generally flat with a small channel running north to south at the base of the slope along the eastern Property boundary, adjacent to the Stericycle property. Vehicle access is available off Taylor Way and will be provided off of Alexander Avenue. During construction, the Property will be staged with a trucking route, wheel wash, water treatment and/or baker tank area, and a temporary stockpile area. To accommodate these features, rough site grading and the placement of quarry spalls may be necessary. A construction layout and access is shown on Sheet C1.00 in Appendix F and will be further detailed as the design progresses. Vineyard snail eradication BMPs will include application of snail bait on gravel pads and salt applications on pads at exits of the Property, as

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described in the preliminary design drawings and vineyard snail eradication area BMPs by Construction Step & Zone (Appendix F).

Temporary stockpiles will be used as needed for material that is moved during grading, filling, and cap installation activities. Stockpiles will be managed in a manner that minimizes erosion, contact with stormwater runoff, dust generation, and worker and public contact.

5.3 Engineering Controls

Engineering controls and construction quality controls will be important components for both the containment wall and asphalt cap designs. Ecology will be provided with a copy of the project specifications that include the engineering controls required from the contractor in the 90% and 100% (final) design packages. Project specifications include, but are not limited to, the following:

- Health and Safety Plan and Emergency Response Procedure
- Temporary Erosion and Sediment Control
- Spill Prevention and Countermeasure Plan
- Construction Wastewater Management Plan
- Survey Plan
- Equipment List for Onsite Use
- Waste Management Plan
- Product and Aggregate
- Submittals (e.g., manholes, ecology blocks, structural fill, etc.)
- Traffic Control Plan.

Prior to construction, the contractor will provide submittals demonstrating compliance with and fulfillment of all project specification requirements. Ecology will be provided a copy of the contractor's Health and Safety Plan and the Spill Prevention and Countermeasure Plan for review, but not approval, once they are received from the contractor.

Engineering controls regarding on-site management of soil and snail decontamination measures will be provided in the forthcoming SMP. further discussed in Section 5.10.2. Construction quality control will also be required pursuant to the interim action design and will be implemented during interim action construction activities. The preliminary construction quality control elements for design are outlined in Section 6.3.

5.4 Property Grading and Filling Activities

Following authorizations (See Section 5.1), the Port will fill the wetlands and grade the Property outside of the proposed containment area to eradicate the invasive snails. Native soils shall be relocated on-site (i.e., not exported) to fill the wetlands and shape the Property to drain to a discharge point near the northerly extent of the Alexander Avenue frontage. The Property will generally be graded, with on-site materials at minimal slopes (±1%), to sheetflow runoff toward the center of the Property where it will intercept drainage swales leading to the chosen low point. The

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Port plans to install a new culvert for discharge into the City of Tacoma public piped drainage system in Alexander Avenue, including an upsized lateral pipe under Alexander Avenue to support the increased runoff flowrate. Grading on-site will be established in order to accommodate a 4-inch lift of crushed surfacing base course to cap the site and inhibit vegetative growth. A preliminary grading plan for the Property is shown on Sheet 3.01 of Appendix F. The Property will generally be graded at a 1 percent east-to-west slope (see Figure 5-2) and with elevations dipping from the north to the south.

Grading will consist of using soil on the Property and additional fill material sourced from offsite to meet final grade requirements for the Property. Ecology will review and approve off-site soil borrow sources prior to import and use as on-site fill with the exception of fill brought in from established sand and gravel quarries (e.g., commercial sources).

5.5 Containment Wall

A containment wall (e.g., ecology-block or similar) will be installed along the western edge of the proposed containment area to support the placement of cap fill material east of the containment wall, where auto fluff is present. This wall will be placed at a level grade.

To the north and south of the proposed containment area, and perpendicular to the eastern Property boundary, excavation of existing soil is anticipated, as the proposed walls are located within the Sloped Area that will be removed and used to fill the wetlands. At these locations, soil outside of the proposed containment area will be excavated to a level grade to allow placement of the northern and southern containment walls.

Onsite material and imported, clean soil will be used outside of the containment walls to reduce the exposed height of the wall and bring up the finished grade of the Property (see Figure 4-2).

5.6 Containment Area Grading and Filling

Authorization to proceed with fill operations will be provided by the engineer in coordination with Ecology. Existing on-site materials and, if necessary, imported, clean soil will be placed on top of the auto fluff in the containment area. Fill will be compacted in accordance with project specifications.

5.7 Capping

The final grade will match the top of the slope along the eastern property line and slope to the west to promote drainage. West of the containment wall, the Property will be graded to promote drainage away from the capped auto fluff material. Clean gravel fill will be placed on top of the compacted soil layer within the containment area and will be compacted in accordance with project specifications. A 3-inch-thick layer of asphalt will then be placed on top of the fill material to complete the cap to eliminate the direct contact exposure pathway and reduce potential infiltration of precipitation into the subsurface. The final grade will match the top of the slope along the eastern property line and slope to the west to promote drainage. West of the containment wall, the Property will be graded to promote drainage away from the capped auto fluff material.

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5.8 Compliance Monitoring Plan

There are three types of compliance monitoring defined in WAC 173-340-410: protection monitoring, performance monitoring, and confirmation monitoring. The anticipated elements for each type of IA compliance monitoring are summarized in the following sub-sections. A CMP for interim action activities will be prepared during IA design in accordance with the requirements of WAC 173-340-410. The CMP will be included with the 90% design submittal for Ecology review and approval. Previous soil data and boring logs were used to determine the extent soil containing hazardous substances. This previous data serves as both performance and confirmation monitoring to demonstrate that the interim action, once complete, achieves performance standards by eliminating the soil direct contact pathway for industrial workers to the standard point of compliance of 15 feet bgs.

A sampling and analysis plan (SAP) and quality assurance project plan (QAPP) are required under WAC 173-340-820 and 173-340-830, unless otherwise directed by Ecology. A SAP for the supplemental groundwater sampling is included as Appendix E.[5] Because the previous data bounds the hazardous substances in soil and informs the extent of the interim action area and no soil containing hazardous substances is proposed to be moved or removed from this area, no soil sampling is proposed to be conducted during the interim action; therefore a SAP and QAPP are not necessary components of the interim action's CMP. Other non-sampling performance and confirmation monitoring will be performed and is discussed in the following subsections.

5.8.1 Protection Monitoring

Per WAC 173-340-410(1)(a), the purpose of protection monitoring is to confirm that human health and the environment are adequately protected during construction and the operation and maintenance period of an interim action or cleanup action as described in the HASP. Protection monitoring for this interim will consist of (1) MFA's implementation of the MFA HASP (see Section 5.2.1), (2) the Remediation Contractor's development and implementation of a Remediation Contractor HASP (see Section 5.2.1), and (3) employee adherence to the applicable HASP. In addition, it is anticipated that interim action protection monitoring will likely include dust monitoring, and air sampling of worker breathing zones.

5.8.2 Performance Monitoring

Per WAC 173-340-410(1)(b), the purpose of performance monitoring is to confirm that the interim action or cleanup action has attained cleanup standards and, if appropriate, remediation levels or other performance standards such as construction quality control measurements or monitoring necessary to demonstrate compliance with a permit or, where a permit exemption applies, the substantive requirements of other laws. Performance monitoring for this interim action will consist of other performance standards such as construction quality control measurements or monitoring necessary to demonstrate compliance with a permit or, where a permit exemption applies, the substantive requirements of other laws. Specifically, the applicable performance monitoring for this IA will consist of MFA oversight of the Remediation Contractor to ensure:

[5] The supplemental groundwater SAP will rely on the TWAAFA project's existing Ecology-approved QAPP, with exception for portions that required update to incorporate new Ecology guidance. The updated QAPP references are presented in Appendix E.

- Successful completion of all construction QC components included in the final design (see Section 6.3);
- Adherence to the plan sets and specifications for the containment wall and asphalt cap;
- Appropriate implementation of the CMP, Remediation Contractor HASP, and IDP; and
- Compliance with all requirements for interim action-related permits and the substantive requirements of any exempt permits (see Section 6.4), including any permit-required monitoring.

5.8.3 Confirmation Monitoring

Per WAC 173-340-410(1)(c), the purpose of confirmation monitoring is to confirm the long-term effectiveness of the interim action or cleanup action once cleanup standards and, if appropriate, remediation levels or other performance standards have been attained. Because (1) cleanup standards and remediation levels have not yet been established for the TWAAFA site, (2) the FS is still ongoing, and (3) a final cleanup action has not been developed, it is premature to propose confirmation monitoring as part of the interim action. However, periodic asphalt cap inspections will be performed to confirm the integrity of the cap and determine if there are cracks or holes within the asphalt cap that could compromise the cap's ability to minimize infiltration. The means, methods, and frequency will be included in a compliance monitoring plan included in the 90% design.

5.9 Institutional Controls

Institutional controls are measures that limit or prohibit activities that may interfere with the integrity of the interim action. Following completion of construction activities above, institutional controls will be implemented at the Property. Physical institutional controls will include signs and demarcation fabric in the area of the cap to prevent disturbing the cap. Annual inspections of the containment and cap will be required to confirm the cap, as an engineering control, remain protective. Additionally, should the containment wall and cap be considered a final remedy under the RIFS, an environmental covenant would be required to be filed with the title of the Property, as the capped area contains concentrations of chemicals of concern exceeding MTCA Industrial CULs. The environmental covenant would restrict future activities at the Property and limit use of the Property for industrial purposes only, in accordance with WAC 173-340-440 and RCW 64.70. The Port has procured a title commitment that has removed the habitat easements from the insurance coverage exceptions for the Property, as the title insurer determined that they no longer applied to the Property (Stewart 2021).

5.10 Additional Considerations

5.10.1 Supplemental Groundwater Investigation

A supplemental groundwater investigation will be conducted in the vicinity of TWA-SB-12. As discussed in Section 2.4.1, PCE and TCE detections in soil colocated with lime waste were identified between 8 and 18.5 feet bgs at TWA-SB-12, indicative of lime solvent sludge. Because concentrations of PCE and TCE and other contaminants in soil exceed Ecology preliminary soil cleanup levels for protection of groundwater to marine surface water in TWA-SB-12, which are based on conservative transport assumptions, collection and analysis of groundwater is proposed as an empirical demonstration of whether migration into groundwater from soil is occurring due to lime

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solvent sludge. To evaluate this potential pathway in the vicinity of TWA-SB-12, two borings will be advanced adjacent to and downgradient of TWA-SB-12 for the collection of groundwater and analysis of PCE and TCE and other contaminants. The results of this groundwater sampling will inform potential additional remedial actions in this area of the TWAAFA site, as needed. Appendix E provides a proposed sampling plan for this supplemental investigation.

5.10.2 Soil Management Plan

A soil management plan (SMP) will be prepared during interim action design to provide a management framework for handling any soil and materials during earthwork activities on the Property (e.g., clearing/grubbing, backfilling, building and parking construction). The SMP will enable Port personnel and contractors to make informed decisions about managing potentially-snail infested soil to protect Site workers, surrounding properties, and the environment.

The primary SMP principle will be that any soil or materials on the Property will remain within the Property until earthwork activities are completed and that soil containing hazardous substances within the interim action area are not transported elsewhere on the Property or offsite. The SMP will includes a description of vineyard snail management and decontamination BMPs including, identification of controlled equipment areas with hot-water pressure wash and/or salt spray, procedures for visual inspections of equipment prior to removal from Property, and no movement of soil or vegetation off the Property for a minimum of three years without prior written approval from the Port in coordination with USDA and/or WDA to confirm eradication is complete. Preliminary soil management areas associated with snail eradication BMPs are provided Appendix F.

The initial SMP will be included with the 90% design submittal to Ecology. It is anticipated that the SMP will be updated as necessary following installation of the asphalt cap and/or selection of the final cleanup action in the CAP. The SMP will include (1) Site background information (e.g., summaries of historical operations, regulatory setting, existing infrastructure, and investigation results), (2) Site-specific obligations and considerations for characterizing, handling, storing, and deciding whether to reuse soil and materials on the Property during and after the three-year minimum eradication effort (note that no soil or vegetation will be moved off the Property until eradication is complete), (3) equipment decontamination procedures to prevent transport of snails and/or hazardous substances on the property and (4) protocols for notifying Ecology if unanticipated contamination is encountered during earthwork activities.

5.10.3 Methane Evaluation

Portions of the Property exhibit organic material from the wetlands and wood debris that was used as fill and both sources could be potential sources of methane. While methane is not a hazardous substance regulated under MTCA, the build-up of methane at concentrations above the lower explosive limit (5 percent) can be a risk to human health in occupied buildings. Preliminary redevelopment plans involve importing fill to raise site grades and construction of a warehouse(s) and parking areas, which will alter site conditions and create low-permeability surfaces for potential methane generation. Vegetation and woody debris outside of the interim action area may be moved and sequestered to a separate area pending snail eradication and may be removed before redevelopment occurs. Therefore, an assessment of methane risk consistent with ASTM Standard *E2993-23, Standard Guide for Evaluating Potential Hazard in Buildings* will be included part of development design once the final layout and design of the redevelopment are determined, a lease is in place, and filling activities are complete.

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5.10.4 Inadvertent Discovery Plan

In accordance with WAC 173-340-815(3)(a) and Governor Executive Order 21-02, Ecology will consult with the Department of Archaeology and Historic Preservation and affected tribes prior to interim action implementation about the potential effects of the interim action on potential cultural resources at the Site.

Although the potential for encountering cultural resources (e.g., human remains, tribal artifacts, historical resources, archaeological resources) during the interim action is likely low, an IDP was developed and will be implemented if a cultural resource is inadvertently discovered during IA activities (see Appendix D).

The IDP will be readily available during all interim action implementation activities and interim action field staff will review the IDP prior to working at the Property. If anyone involved with interim action implementation suspects the inadvertent discovery of a cultural resource during interim action activities, all ground disturbing activities, and other activities proximate to the discovery, shall immediately cease and the IDP in Appendix D shall be implemented. All field personnel shall follow the IDP procedures and treat all cultural resources with respect.

Additionally, the Port is in regular communications with the Puyallup Tribe regarding the interim action and proposed redevelopment on the Property (see Appendix D).

5.10.5 Wetlands Permitting

The anticipated containment and cap area, construction access, and staging extents for the interim action work overlap with the previously delineated wetland boundaries. The wetlands are considered critical areas under the Growth Management Act and will undergo additional review. The Port will need to obtain authorization from Ecology and City of Tacoma to fill the wetlands prior to implementing the interim action (see Sections 2.1.1 and 6.4). The Port has applied for a Critical Areas Development permit with the City and is in the process of working with Ecology on an administrative order to fill the wetlands.

5.10.6 Invasive Snails

The Property is known to harbor Mediterranean vineyard snails, an invasive species that threatens the grain industry in the United States. To limit the spread of these snails, all equipment mobilized to the site will need to be washed by a pressure washer or salt solution and then visually inspected prior to leaving the construction area. This will include personnel vehicles and heavy machinery. Preliminary vineyard snail eradication area BMPs by construction step & zone as provided in Appendix F. Prior to construction, the contractor will be required to submit a mitigation plan for engineer and Port review. It will describe how the contractor intends to ensure all equipment is properly decontaminated prior to leaving the work area.

5.10.7 Vulnerable Populations and Overburdened Communities

The interim action is not expected to have impacts on likely vulnerable populations or overburdened communities.[6] The interim action will occur at a vacant, restricted, and fenced Property within a

[6] Even though the consideration of impacts on likely vulnerable populations or overburdened communities is a CAP requirement for final cleanup actions per WAC 173-340-380(5)(c), this potential was also considered for this interim action.

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highly industrial area that will remain zoned Port Maritime Industrial for the foreseeable future. No residential neighborhoods or communities are located adjacent to the Site, and the closest residential neighborhood is approximately 4,000 feet (over ¾-mile) east of the eastern portion of the Property. The interim action will not generate regulated air emissions or haul substantial quantities of waste to other communities. As a result, even if there are some vulnerable populations or overburdened communities within several miles of the Property, the interim action is not expected to have any impact on vulnerable populations or overburdened communities given the nature and location of the interim action.

5.10.8 Climate Change Resiliency

Site-specific vulnerabilities to climate change were assessed to determine if the long-term effectiveness of the containment wall and asphalt cap have a high likelihood of being severely comprised, and whether climate change resilience may be needed for the containment wall and asphalt cap.[7] The potential vulnerabilities that were assessed per Ecology's Sustainable Remediation guidance were: (1) sea level rise (SLR), (2) severe storms, (3) flooding, (4) landslides, (5) wildfires, and (6) droughts (Ecology 2023). The vulnerability assessment was based on data from the Vulnerability Assessment prepared by Northwest Seaport Alliance (NWSA) (NWSA 2023).[8] A key concept for this assessment is the difference between current ground surface elevations and future ground surface elevations. The low-lying areas along the eastern portion of the Property will be elevated by 2 to 5 feet relative to current conditions (see Sheet 3.00 in Appendix F for current and future ground surface elevations). The containment wall and asphalt cap were assessed in the Ecology 2023 long-term risk scenario (e.g., through the year 2100) since these interim action components could be incorporated into a final cleanup action for the TWAAFA site.

The key assessment details and results for each of the seven potential vulnerabilities were:

- SLR: Since the interim action was evaluated in the long-term risk scenario, a conservative four to six feet of SLR was considered per Ecology 2023 guidance.[9] Predicted inundation up to mean higher-high water plus 5 feet of SLR does not overlap with where the containment wall and asphalt cap will be located (NWSA 2023). Therefore, SLR is expected to have little to no impact on the long-term effectiveness of the containment wall or asphalt cap based on the nature and locations of these interim action components.
- Severe Storms: Although infrequent severe storms (e.g., extreme storm surges, extreme precipitation events) will occur more frequently in the future and will increase the potential for inundation when combined with SLR, severe storms are expected to have little to no impact on the long-term effectiveness of the containment wall or asphalt cap based on the nature and location of these interim action components.

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[7] The WAC 173-340-360(3)(a)(v) requirement for cleanup actions to "provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness" does not technically apply to this interim action since WAC 173-340-200 excludes interim actions from the cleanup action definition. However, the potential need for climate change resiliency was evaluated for the containment wall and asphalt cap since these interim action components are expected to remain in place for several years. The contaminated soil contained by the wall is expected to be covered with additional fill and an asphalt cap within a relatively a short timeframe while the invasive snails are eradicated.
[8] The NWSA assessment addresses vulnerabilities for coastal flooding (including SLR), flooding, severe weather, wildfires and smoke, landslides, earthquakes, tsunamis, and volcanic activity for the Port of Tacoma, the Port of Seattle, and other strategic "Gateway" locations in the region.
[9] This is a conservative assumption since the Washington Coastal Resilience Project predicts a high-end SLR estimate between 1.9 and 3.3 feet for the Port of Tacoma by the year 2100 (NWSA 2023).

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- Flooding: The containment wall and asphalt cap are not located within the 100-year or 500-year floodplain (NWSA 2023). Although the potential for flooding will increase in the future due to SLR and severe storms, flooding is expected to have little to no impact on the long-term effectiveness of the containment wall or asphalt cap based on the nature and location of these interim action components.
- Landslides and Erosion: Although there is currently a topographic rise along the eastern boundary of the Property that could become susceptible to future landslides, a landslide at the Property is highly unlikely given the current topography. Additionally, the future Property topography will be even less susceptible to landslides with the overall raise in grade of the Property during development and the construction of the containment wall. Thus, landslides are expected to have little to no impact on the long-term effectiveness of the containment wall or asphalt cap.
- Wildfires: The Property is not vulnerable to wildfires because it is not proximate to wildlands (e.g., forested and grassland areas) and is considered "non-burnable" in the context of wildland fire potential (NWSA 2023). Further, the Site currently has limited vegetation, and the future asphalt cap and development will reduce existing vegetation. Thus, wildfires are expected to have little to no impact on the long-term effectiveness of the containment wall or asphalt cap.
- Droughts: The Port of Tacoma area has a very low drought risk for the United States (NWSA 2023), there is no current or future Site vegetation that would be affected by droughts, and droughts would not be expected to affect the functioning of the containment wall or asphalt cap. Therefore, droughts are expected to have little to no impact on the long-term effectiveness of the containment wall or asphalt cap.
- Earthquakes: Most earthquakes occur along faults. The three main factors that determine the shaking experienced in an area are the magnitude of the earthquake, the distance relative to the epicenter where the earthquake originated, and the local ground materials such as the soil and rock that affect the ground motion. FEMA has mapped and quantified the earthquake risk across the United States based on expected annual loss, social vulnerability, and community resilience. The FEMA earthquake risk index map ranks Tacoma, and therefore the Property, as a relatively high-risk area. The greatest risk earthquakes pose to the selected interim action is damage to the cap that serves to prevent direct contact exposure by creating a physical barrier between the auto fluff and potential future receptors (i.e., industrial workers). That said, major earthquakes are infrequent in Washington and, therefore, are considered low likelihood hazards to the Property and selected interim action have little to no impact on the long-term effectiveness of the containment wall or asphalt cap.

It is highly unlikely that climate change impacts would severely compromise the long-term effectiveness of the containment wall or asphalt cap. Therefore, additional interim action measures are not needed to provide climate change resilience for the containment wall and asphalt cap. However, site-specific climate change resilience measures are planned with development, including raising the overall ground surface elevation of the Property and substantially raising the elevation and incorporating industry-standard design practices throughout the design and implementation to minimize the potential impacts of climate change vulnerabilities (NWSA 2023).

5.10.9 Dust Mitigation

The containment wall excavation and handling, grading, and placement of cap fill materials have the potential to generate dust. Appropriate dust-control methods will be employed during excavation and placement of fill as necessary to prevent the generation of airborne hazardous substances. These

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control methods will include soil wetting and misting, as necessary. Should the work be completed during excessively dry weather, excavation areas may be wetted before excavation by spraying the area immediately around the excavation and spraying newly exposed soil during excavation so that visible dust emissions are controlled.

The contractor will locate a nearby water source (e.g., fire hydrant) to fill a water tank/truck and keep water readily available during the construction activities. Permission from the City is required for the use of fire hydrants. Dry excavation, dry shoveling, or dry sweeping of soil will not be allowed.

6 Interim Action Path Forward

6.1 Public Participation and Tribal Engagement for the IAP

Pursuant to WAC 173-340-430(6)(a) and WAC 173-340-600(16), Ecology will engage the public about the proposed interim action described in this IAP before approving the IAP. Ecology will utilize multiple methods to notify the public about the IAP in accordance with WAC 173-340-600(2)(a), which includes the following notification methods: publishing on Ecology's website, emailing an electronic alert to people who request an electronic alert, publishing in the Contaminated Site Register, mailing written notices to people who request a written notice, mailing written notices to people residing within the potentially affected vicinity of the interim action, sending a written notice to appropriate news media, and publishing in an appropriate newspaper. Ecology will invite members of the public to review and comment on the IAP for at least 30 days per WAC 173-340-600(2)(b). Comments received by Ecology during the public participation period will be considered by Ecology before the IAP is finalized and approved. If necessary, this section of the IAP may be updated to summarize Ecology's responses to public comments prior to finalizing the IAP.

In accordance with WAC 173-340-620, Ecology will:

- Develop a tribal engagement plan for this Property;
- Initiate meaningful engagement with affected tribes about this interim action before approving the IAP; and
- Engage with affected tribes in addition to and independent of the public participation process.[10]

6.2 Finalizing the Interim Action Design

Washington-licensed professional engineers are (and will continue to be) responsible for the preparation and completion of the interim action design. Applicable portions of the engineering design report, plans, and specifications in WAC 173-340-400(4)(a) and (b) that are not already completed and included in the IAP will be further developed and documented as the IA design is finalized. The Port team will continue advancing (1) the plan sets for the containment wall and asphalt cap, (2) the specifications for the containment wall and asphalt cap, and (3) the currently

[10] Given the Port's long-standing relationship and ongoing coordination with the Puyallup Tribe of Indians on a wide variety of projects, the Port will also engage with the Puyallup Tribe of Indians on this interim action project

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uncompleted Engineer-prepared plans (i.e., CMP, and SMP) from preliminary design to 90% design. The 90% plan sets, specifications, CMP, and SMP will be submitted to Ecology for review (see Table 6-1). It is anticipated that Ecology will complete reviews of these documents within 15 days of receipt to ensure the ability to conduct on-site work during warm-weather months when the vineyard snails are dormant. Following any Ecology comments on the 90% design, the final (100%) interim action design will be prepared and submitted to Ecology for approval.

6.3 Construction Quality Control

Construction QC is part of design and will be finalized along with the plan sets, specifications, and associated Engineer-prepared plans. The interim action design will include a variety of construction QC requirements to ensure that the interim action construction activities being conducted by the Remediation Contractor are completed correctly, effectively, and safely. The construction QC requirements will include, but are not limited to:

- Verifying actual construction wall installation match as indicated in the final design;
- Obtaining Ecology approval before importing non-commercial borrow (see Section 5.4);
- Completing materials testing for compaction of compacted fill material and hot mix asphalt;
- Implementing snail decontamination measures;
- Implementing the engineering controls;
- Implementing the CMP;
- Implementing the HASPs and associated health and safety requirements;
- Implementing the IDP if necessary;
- Conducting oversight of all Remediation Contractor activities to ensure compliance with the plan sets, specifications, Engineer-prepared plans, and permit requirements.

6.4 Permitting and State Environmental Policy Act Compliance

Per WAC 173-340-710(9), the Port is exempt from the procedural requirements of local permits/approvals and select state permits/approvals for the interim action (although the Port must comply with the associated substantive requirements). The purpose of permit/approval exemptions is to expedite cleanup of contaminated sites. However, because this interim action is being conducted in conjunction with broader development activities, including filling and grading to eradicate the snails, the Port is not seeking exemption and will permit the interim action as part of the grading/filling for snail eradication. The Port has identified the following permit/approvals for this interim action and grading/filling:

- City of Tacoma Site Development Permit - required for any earthwork over one-acre.
- City of Tacoma Right-of-Way Work Order Permit - required to enable trucks and other vehicles to transit into the Property.
- City of Tacoma Critical Areas Development Permit - required to fill wetlands on the Property.

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- Washington State Department of Ecology Administrative Order - required to fill wetlands on the Property.
- Construction Stormwater General NPDES Permit - required to appropriately manage stormwater during construction.
- Updating/obtaining applicable NPDES permit coverage for future stormwater discharges via the new stormwater utility system, required to appropriately manage stormwater after construction.
- Cultural review consultation - required for actions with Ecology oversight. The Port also is in regular communications with the Puyallup Tribe regarding work on the Property.

In addition to the permits above, this interim action requires compliance with applicable State Environmental Policy Act (SEPA) rules because the work is being conducted under an enforcement order (197-11-250). Consistent with WAC-197-11-253, Ecology will act as the SEPA lead agency and will coordinate SEPA review, meaning Ecology is responsible for reviewing the checklist, determining whether the proposal is likely to result in significant adverse environmental impacts, and issuing the appropriate SEPA determination. As part of this process, Ecology will coordinate internal and external review of the checklist and make the resulting SEPA determination available for public comment. Ecology's determination for this interim action will follow the timing and procedures under WAC 197-11-268 and Ecology's Policy 103a: Coordination of SEPA and MTCA (Ecology 2004).

6.5 Public Works Contracting

The Port will competitively bid the interim action implementation work for the to-be-determined Remediation Contractor as a public works solicitation. The solicitation will include this IAP, the final plan sets, the final specifications, and the final Engineer-prepared plans as attachments. The solicitation will be posted and advertised in accordance with standard Port procurement procedures, such as posting on the Port's procurement website (https://www.portoftacoma.com/business/contracting/procurement) and sending email updates to all Port procurement subscribers. The bidding process will include opportunities for bidders to ask questions and attend a Site visit with the Port. The Port will collect bids on the time and date advertised. The Port will review each bid proposal with the evaluation requirements included in the solicitation and select the Remediation Contractor that best satisfies the evaluation requirements. The Port will then enter into a contract with the selected Remediation Contractor.

6.6 Interim Action Completion Report

Following construction, an interim action completion report will be prepared in compliance with WAC 173-340-400(6). The completion report will document the final excavation extents, observed subgrade conditions, and the TWAAFA site condition following excavation and backfill. The completion report will include as-built drawings, trucking and disposal tickets, analytical results, any deviations from this IAP, construction logs, and relevant photographs.

6.7 Project Schedule and Reporting

Following Ecology's review of this IAP, the Port and MFA will address Ecology comments and submit the revised IAP for public review, in accordance with the AO, EO, and WAC 173-340-600. Following

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the 30-day public review and comment period, Ecology will address public comments, and the IAP will be revised as needed, then finalized.

Following Ecology's approval of the IAP, the Port will submit 90% plan set with specifications, the CMP and SMP for Ecology review. Following Ecology review of 90% plans, the Port will submit the final (100%) design set for Ecology approval. Permitting is expected to be completed between 90 and 100% design. Permits are anticipated to be acquired by Q2 2026. Following approval of final design, the Port will bid, contract, and schedule the proposed work. To minimize potential redistribution of the vineyard snails, construction work should be performed during the dry season following permit approvals, which is anticipated for Summer 2026. The table below identifies the proposed schedule for design, construction and closeout.

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Table 6-1: Project Schedule

Task	Leading Responsible Party	Ecology Review (X)	Anticipated Start Date	Anticipated End Date
IAP Public Comment Period	Ecology	--	April 15, 2026	May 15, 2026
Finalize IAP	Ecology	X	May 15, 2026	June 15, 2026
CMP and SMP	Port	X	March 13, 2026	April 10, 2026
90% Design	Port	X	March 13, 2026	March 31, 2026
100% Design (Final)	Port	X	April 24, 2026	May 11, 2026
Project Permitting and Notifications				
ECY SEPA Checklist Review	Port	X	February 3, 2026	April 15, 2026
Cultural Resource Consultation	Ecology	--	At least six weeks prior to ground disturbing activities.	--
Project Permitting	Port	--	Ongoing	Q2 2026
Construction				
Bid Solicitation	Port	--	May 25, 2026	July 1, 2026
Notice of Award	Port	--	July 13, 2026	--
Construction	Port	--	August 11, 2026	November 2, 2026
Contractor Stormwater Pollution Prevention Plan[11]	Contractor	X	July 31, 2026	August 7, 2026
Contractor Health & Safety Plan	Contractor	--[12]	July 31, 2026	August 7, 2026
Contractor Spill Prevention and Countermeasure Plan	Contractor	--[12]	July 31, 2026	August 7, 2026
Construction Close Out				
Draft Interim Action Completion Report	Port	X	After completion of interim action	--
Regulatory review	Ecology	--	After submittal of draft interim action completion report	--
Incorporate regulatory comments and Finalize Interim Action Completion Report	Port	X	After receipt of regulatory comments	--
Environmental Covenant Recorded	Port	X	After finalization of interim action completion report	--

[11] Through Ecology's construction stormwater general NPDES permit process.
[12] To be provided to Ecology for review, but not approval.

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Limitations

The services undertaken in completing this plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This plan is solely for the use and information of our client unless otherwise noted. Any reliance on this plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this plan.

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Figures

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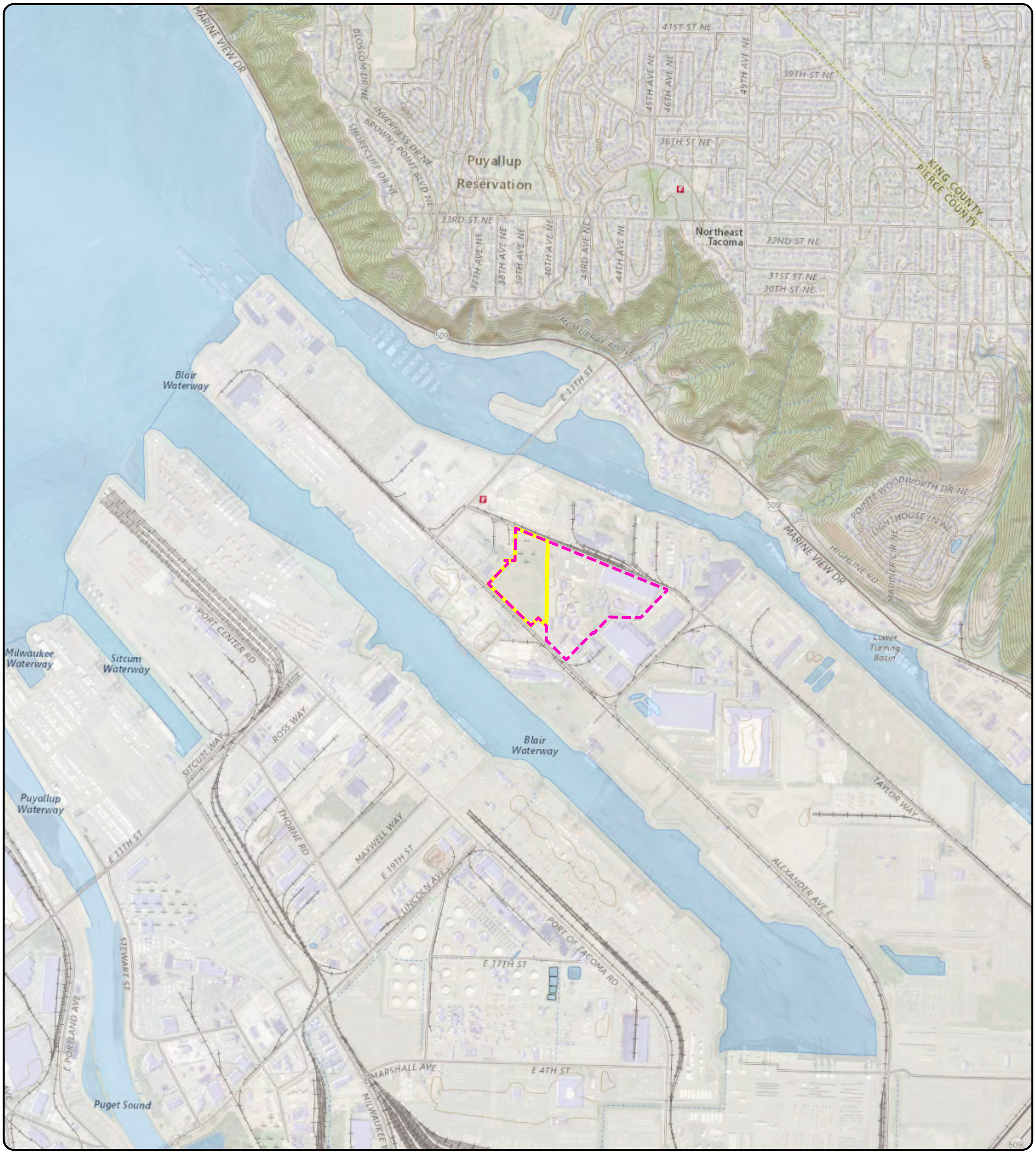

Notes
U.S. Geological Survey (2021) 7.5-minute topographic quadrangle: Tacoma.
Township 21 North, Range 3 East, Section 35.
TWAAFA = Taylor Way and Alexander Avenue Fill Area.

Data Source
Tax parcel obtained from Pierce County; TWAAFA site boundary obtained from Exhibit A of Agreed Order No. DE 14260.

Legend
- TWAAFA Boundary
- Hylebos Marsh Property

Figure 1-1
Property Location

Hylebos Marsh Property
1205 Alexander Avenue and
1300 Taylor Way
Tacoma, WA

0 1,000 2,000
Feet

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Path: X:\0615.20\10\Pro\M0615_20_010_100.aprx\Fig 1-1 Property Location
Print Date: 6/21/2023
Reviewed By: jlenahansen
Produced By: sturner
Project: M0615.20.010

Figure 2-1
Property Features

Hylebos Marsh Property
1212 Taylor Way
Tacoma, WA

Legend

- Monitoring Well
- Approximate Extent of Autofluff
- Extent of Sloped Topography
- Delineated Wetland Boundary
- City of Tacoma Easement (in process of being removed)
- TWAAFA Site Boundary
- Hylebos Marsh Property
- Parcel

Notes
DOF = Dalton, Olmsted & Fuglevand.
TWAAFA = Taylor Way and Alexander Avenue Fill Area.

0 150
Feet

Data Sources
Parcels obtained from Pierce County; TWAAFA site boundary obtained from Exhibit A of Agreed Order No. DE 14260; existing monitoring well locations obtained from Table 3 of DOF's Revised Groundwater Monitoring Plan (April 2022); delineated wetland boundaries obtained from *Port of Tacoma Parcel 117 Critical Areas Study (Confluence 2024)*; topographical survey obtained from from Sitts & Hill Survey (November 2024).

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Path: X:\0615.20\15\Pro\M0615_20_015_001_Interim_Action_Plan.aprx\Fig 2-1 Property Features
Print Date: 1/23/2026
Reviewed By: jhansen
Produced By: jroberts
Project: M0615.20.015

Figure 2-2
Preliminary Development Concept Plan

Hylebos Marsh Property
1212 Taylor Way
Tacoma, WA

Legend

- Conceptual Building Location
- Conceptual Parking Location
- Ecology Block Wall, or Equivalent
- Extent of Sloped Topography
- Capping Area and Approximate Extent of Autofluff on Property
- TWAAFA Site Boundary
- Hylebos Marsh Property

Note
TWAAFA = Taylor Way and Alexander Avenue Fill Area.

0 150
Feet

Data Source
Aerial photograph (June 2024) obtained from Google.

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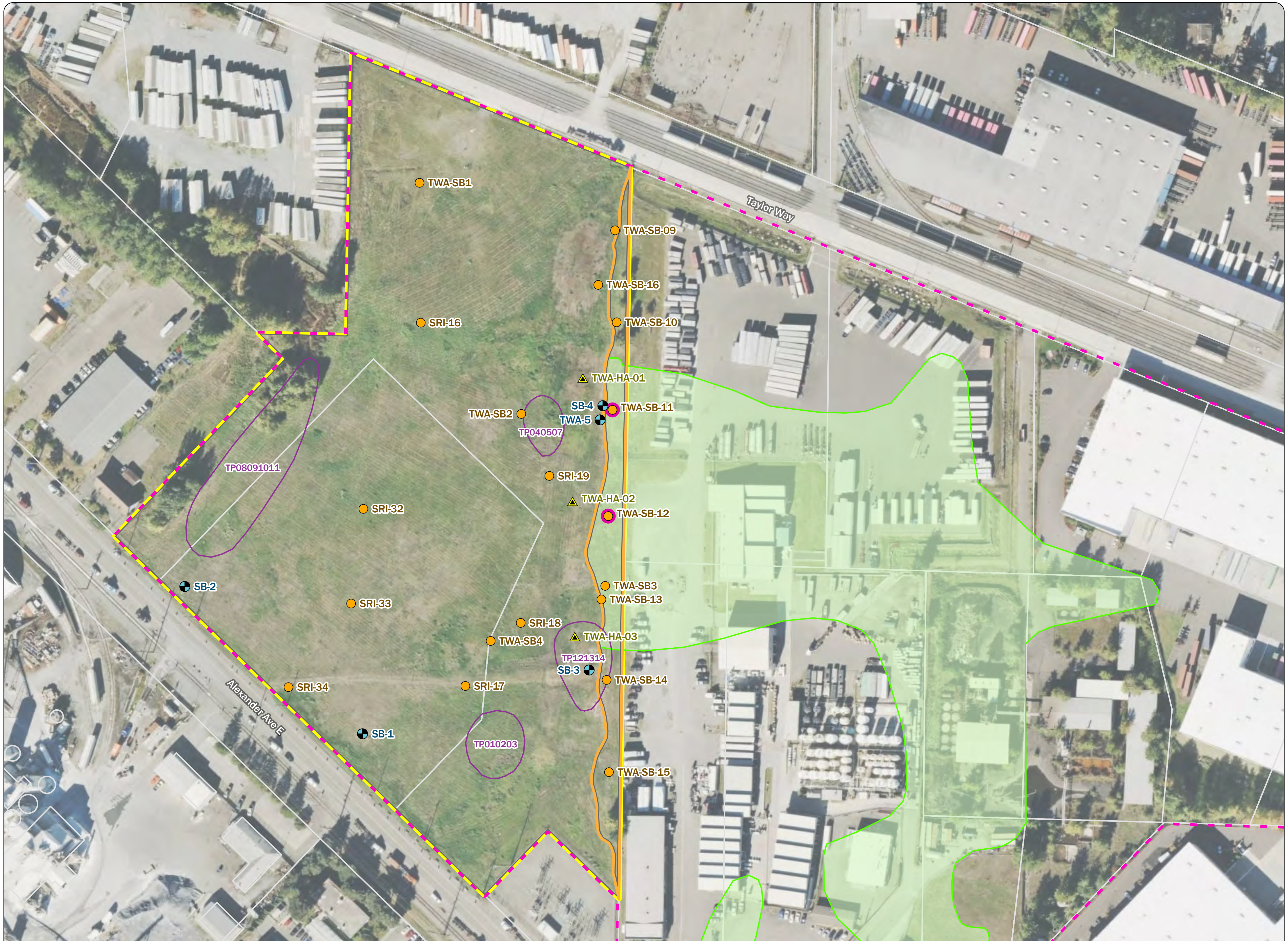
Project: M0615.20.016 Produced By: jroberts Reviewed By: cwise Print Date: 1/16/2026 Path: X:\0615.20\16\Pro\M0615_20_016_Hylebos_Development.aprx\Fig 2-2 Prelim Development Concept Plan

Figure 2-3
Soil Sample Locations

Hylebos Marsh Property
1212 Taylor Way
Tacoma, WA



Legend

- Hand Auger
- Monitoring Well
- Boring
- Exceedance of MTCA Method A Industrial CUL
- Composite Sample Area
- Approximate Extent of Autofluff
- Extent of Sloped Topography
- TWAAFA Site Boundary
- Hylebos Marsh Property
- Parcel

Notes
CUL = cleanup level.
DOF = Dalton, Olmsted & Fuglevand.
MTCA = Model Toxics Control Act.
TWAAFA = Taylor Way and Alexander Avenue Fill Area.

0 100
Feet

Data Sources
Parcels obtained from Pierce County; TWAAFA site boundary obtained from Exhibit A of Agreed Order No. DE 14260; previous sample locations georeferenced from DOF Data Gaps Work Plan; topographical survey obtained from from Sitts & Hill Survey (November 2024).

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Path: X:\0615.20.16\Pro\M0615_20_016_Hylebos_Development.aprx\Fig 2-3 Soil Sample Locations
Print Date: 1/28/2026
Reviewed By: csifford
Produced By: jroberts
Project: M0615.20.016

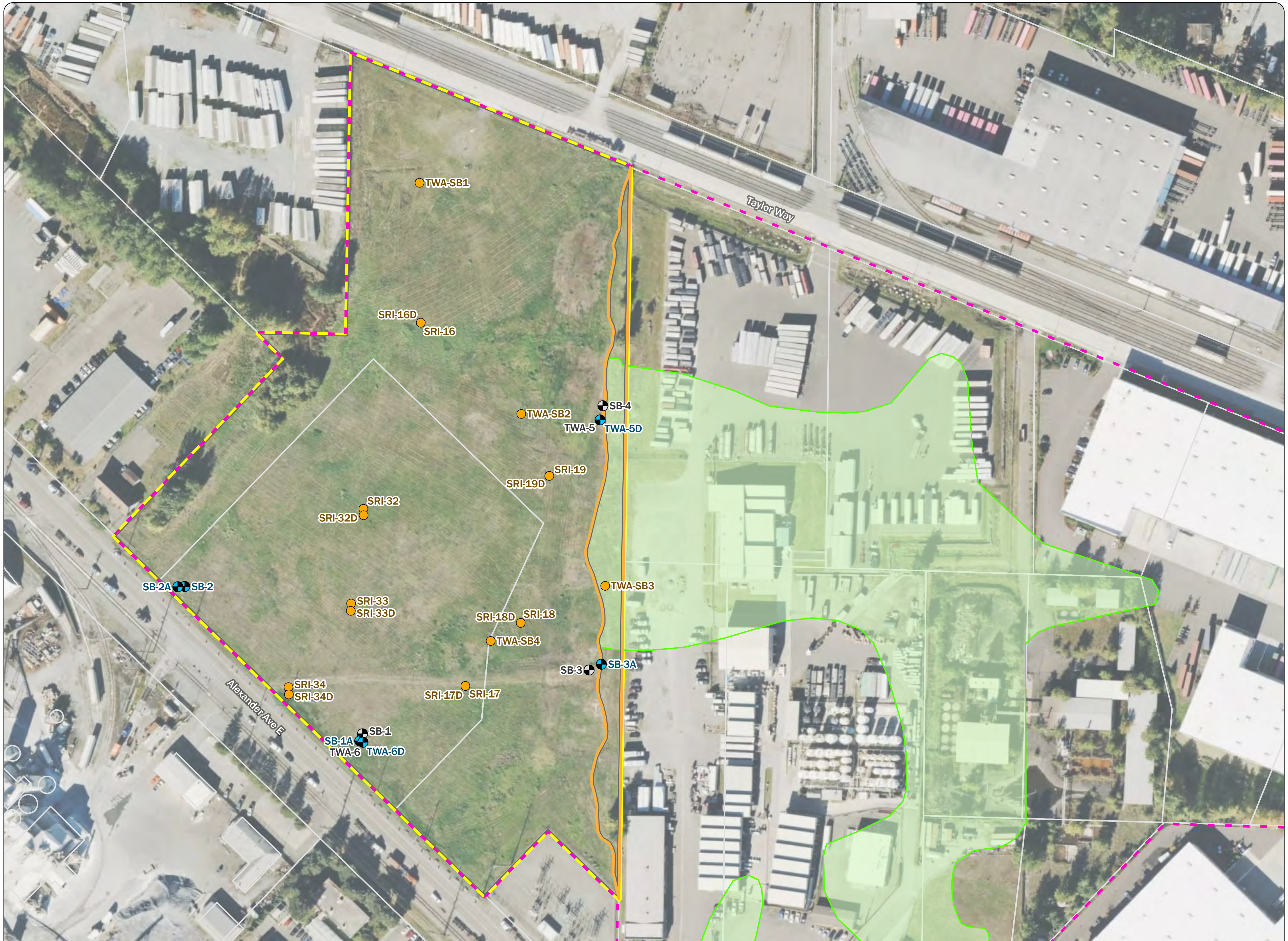

Figure 2-4 Groundwater Sample Locations

Hylebos Marsh Property
1212 Taylor Way
Tacoma, WA

Legend

- Existing Monitoring Well
- Previous Monitoring Well
- Boring
- Approximate Extent of Autofluff
- Extent of Sloped Topography
- TWAAFA Site Boundary
- Hylebos Marsh Property
- Parcel

Notes
DOF = Dalton, Olmsted & Fuglevand.
TWAAFA = Taylor Way and Alexander Avenue Fill Area.

0 100
Feet

Data Sources
Parcels obtained from Pierce County; TWAAFA site boundary obtained from Exhibit A of Agreed Order No. DE 14260; previous groundwater sample locations georeferenced from DOF Data Gaps Work Plan (October 2022); existing monitoring well locations obtained from Table 3 of DOF's Revised Groundwater Monitoring Plan (April 2022); topographical survey obtained from from Sitts & Hill Survey (November 2024).

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Path: X:\0615.20\16\Pro\M0615_20_016_Hylebos_Development.aprx\Fig 2-4 Groundwater Sample Locations
Print Date: 1/21/2026
Reviewed By: csifford
Produced By: jroberts
Project: M0615.20.016

Figure 5-1
Proposed Interim Action Components

Hylebos Marsh Property
1212 Taylor Way
Tacoma, WA

Legend

- Monitoring Well for Decommissioning
- Ecology Block Wall, or Equivalent
- Sheet Pile Wall
- Temporary Access Ramp (approximate)
- Proposed Staging and Work Area
- Capping Area and Approximate Extent of Autofluff on Property
- Extent of Sloped Topography
- TWAAFA Site Boundary
- Property Area To Be Graded and Filled
- Hylebos Marsh Property
- Parcel

Notes

Sloped area outside of the autofluff fill extents to be excavated and regraded across the property to eradicate snails.

Prior to site grading and capping activities, all monitoring wells on the Property will be decommissioned in accordance with WAC 173-160-151.

TWAAFA = Taylor Way and Alexander Avenue Fill Area.

WAC = Washington Administrative Code.

0 150
Feet

Data Sources

Parcels obtained from Pierce County; TWAAFA site boundary obtained from Exhibit A of Agreed Order No. DE 14260; topographical survey obtained from from Sitts & Hill Survey (November 2024).

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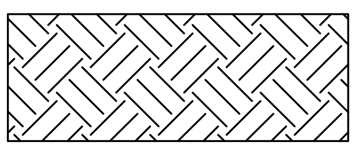
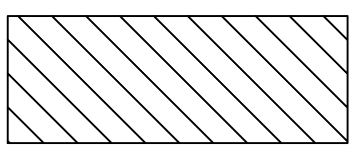
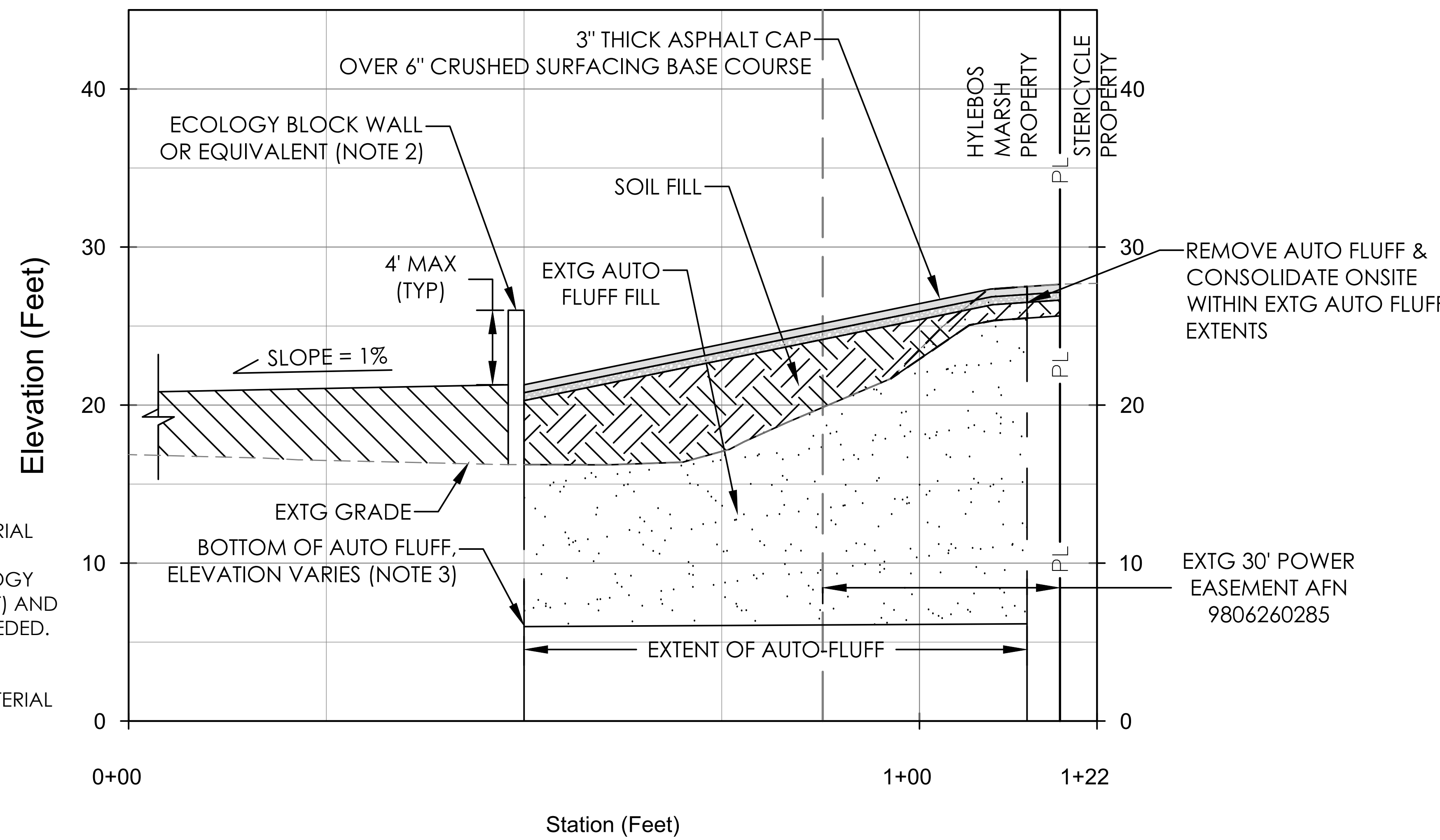
Path: X:\0615.20\16\Pro\M0615_20_016_Hylebos_Development.aprx\Fig 4-1 Proposed Interim Action Components
Print Date: 1/21/2026
Reviewed By: jhansen
Produced By: jroberts
Project: M0615.20.016

NOTES:

1. VERTICAL DATUM IS MEAN LOWER LOW WATER, 1983-2001 EPOCH.
2. THE ECOLOGY BLOCK WALL (OR EQUIVALENT LOW PERMEABILITY WALL) SPECIFICATIONS ARE CONCEPTUAL AT THIS STAGE AND WILL BE FINALIZED DURING FUTURE DESIGN.
3. THE VERTICAL EXTENT OF AUTO FLUFF IS APPROXIMATE AS SHOWN AND VARIES BETWEEN 4.8 FEET AND 19.8 FEET BASED ON 2024 SUBSURFACE INVESTIGATION DATA.
4. THE CAP WILL BE DESIGNED TO ENSURE THAT PONDING OR ACCUMULATION OF WATER DOES NOT OCCUR ON TOP OR DOWNSLOPE OF THE CAPPED MATERIAL. THE CAP AND WALL WILL BE DESIGNED TO PREVENT PONDING AND QUICKLY CHANNEL WATER OFF OF THE CAP AND INTO AN APPROPRIATE STORMWATER SYSTEM.
5. SOIL FILL WITHIN THE CONTAINMENT AREA IS ANTICIPATED TO INCLUDE EXCAVATED MATERIAL REMOVED TO FACILITATE THE CONTAINMENT WALL (ECOLOGY BLOCK WALL OR EQUIVALENT) AND IMPORTED CLEAN FILL, AS NEEDED.


INCLUDES EXCAVATED MATERIAL REMOVED TO FACILITATE THE CONTAINMENT WALL (ECOLOGY BLOCK WALL OR EQUIVALENT) AND IMPORTED CLEAN FILL, AS NEEDED.


INCLUDES IMPORTED FILL MATERIAL TO RAISE GRADE.



PROFILE VIEW OF AUTO FLUFF INTERIM ACTION
HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 2

1 CROSS SECTION DETAIL

Scale: As Noted

Filepath:G:\00_MFA Civil 3D\00_PROJECTS\0615.20 Port of Tacoma - TWAAFA\EXHIBIT\Figure 1_Site Overview.dwg
Printed by:Max Karn
Date: 2/20/2026 10:05:40 AM

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This figure prepared as supplemental visual information only and should not be used for construction purposes. Only plan sheets approved, stamped and signed by a registered professional engineer in the state of governing jurisdiction shall be used for construction. Additionally, only plans approved by the applicable governing jurisdiction(s) shall be used for final construction unless otherwise expressly noted in writing by the engineer of record.
IMAGE REFERENCE: ©2024 MICROSOFT CORPORATION EARTHSTAR GEOGRAPHICS SIO

SCALE AS NOTED

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

Figure 5-2
Hylebos Marsh Interim Action Plan - Taylor Way and Alexander Avenue Fill Area
Washington

Tables

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Table 2-1
Boring and Well Log Summary
Hylebos Marsh Interim Action, Port of Tacoma

Boring / Well ID	Installation Date	Contractor	Drilling Method	Boring Depth (ft bgs)	Nominal Borehole Diameter (inches)	Screen Interval (ft bgs)	Screen Size (inches)	Nominal Well Diameter (inches)	Well Type	Screened Hydrogeologic Unit	Water Level Gauging Date	DTW (ft bgs)	Water Level Elevation (NAVD88)
SB-1	03/28/1991	Soil Sampling Service	HSA	20	4	14 - 19	0.010	2	Permanent[a]	Deep Aquifer	--	--	--
SB-1A	03/28/1991	Soil Sampling Service	HSA	11	4	5 - 10	0.010	2	Permanent	Shallow Aquifer	12/12/2023	2.06	13.40
SB-2	03/29/1991	Soil Sampling Service	HSA	20	4	15 - 20	0.010	2	Permanent	Deep Aquifer	--	--	--
SB-2A	03/29/1991	Soil Sampling Service	HSA	11.5	4	6 - 11	0.010	2	Permanent	Shallow Aquifer	12/12/2023	3.63	11.40
SB-3	03/29/1991	Soil Sampling Service	HSA	26	4	21 - 26	0.010	2	Permanent[a]	Deep Aquifer	--	--	--
SB-3A	03/29/1991	Soil Sampling Service	HSA	11.5	4	6 - 11	0.010	2	Permanent	Shallow Aquifer	12/13/2023	2.87	13.83
SB-4	04/01/1991	Soil Sampling Service	HSA	31	4	23 - 28	0.010	2	Permanent[a]	Deep Aquifer	--	--	--
SRI-16	01/18/2002	Cascade Drilling	Direct Push	12	4.25	8 - 12	0.010	2	Temporary	Shallow Aquifer	--	--	--
SR-16D	01/18/2002	Cascade Drilling	Direct Push	27	4.25	23 - 27	0.010	2	Temporary	Deep Aquifer	--	--	--
SRI-17	01/16/2002	Cascade Drilling	Direct Push	9	4.25	5 - 9	0.010	2	Temporary	Shallow Aquifer	--	--	--
SR-17D	01/16/2002	Cascade Drilling	Direct Push	24	4.25	20 - 24	0.010	2	Temporary	Deep Aquifer	--	--	--
SRI-18	01/17/2002	Cascade Drilling	Direct Push	10	4.25	4 - 8	0.010	2	Temporary	Shallow Aquifer	--	--	--
SRI-18D	01/17/2002	Cascade Drilling	Direct Push	22	4.25	17-21	0.010	2	Temporary	Deep Aquifer	--	--	--
SRI-19	01/17/2002	Cascade Drilling	Direct Push	9	4.25	5 - 9	0.010	2	Temporary	Shallow Aquifer	--	--	--
SRI-19D	01/17/2002	Cascade Drilling	Direct Push	36	4.25	32 - 36	0.010	2	Temporary	Deep Aquifer	--	--	--
SRI-32	02/03/2002	--	Direct Push	9	4.25	5 - 9	0.010	2	Temporary	Shallow Aquifer	--	--	--
SRI-32D	02/03/2002	--	Direct Push	29	4.25	22 - 26	0.010	2	Temporary	Deep Aquifer	--	--	--
SRI-33	02/02/2002	--	Direct Push	12	4.25	5 - 9	0.010	2	Temporary	Shallow Aquifer	--	--	--
SRI-33D	02/02/2002	--	Direct Push	24	4.25	19 - 23	0.010	2	Temporary	Deep Aquifer	--	--	--
SRI-34	02/02/2002	--	Direct Push	11	4.25	5 - 9	0.010	2	Temporary	Shallow Aquifer	--	--	--
SRI-34D	02/02/2002	--	Direct Push	26	4.25	20 - 24	0.010	2	Temporary	Deep Aquifer	--	--	--
TWA-SB1	09/24/2019	Holt Drilling	Direct Push	10	2	3 - 8	0.010	--	Temporary	Shallow Aquifer	--	--	--
TWA-SB2	09/24/2019	Holt Drilling	Direct Push	10	2	3.5 - 8.5	0.010	--	Temporary	Shallow Aquifer	--	--	--
TWA-SB3	09/24/2019	Holt Drilling	Direct Push	12	2	3.5 - 8.5	0.010	--	Temporary	Shallow Aquifer	--	--	--
TWA-SB4	09/24/2019	Holt Drilling	Direct Push	10	2	3.5 - 8.5	0.010	--	Temporary	Shallow Aquifer	--	--	--
TWA-5	09/25/2019	Holt Drilling	Sonic	60	4	25 - 30, 35 - 40, 45 - 50	0.010	2	Temporary	Deep Aquifer	--	--	--
TWA-6	09/25/2019	Holt Drilling	Sonic	60	4	15 - 20, 25 - 30, 35 - 40, 45 - 50	0.010	2	Temporary	Deep Aquifer	--	--	--

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Table 2-1
Boring and Well Log Summary
Hylebos Marsh Interim Action, Port of Tacoma

Boring / Well ID	Installation Date	Contractor	Drilling Method	Boring Depth (ft bgs)	Nominal Borehole Diameter (inches)	Screen Interval (ft bgs)	Screen Size (inches)	Nominal Well Diameter (inches)	Well Type	Screened Hydrogeologic Unit	Water Level Gauging Date	DTW (ft bgs)	Water Level Elevation (NAVD88)
TWA-5D	11/07/2019	Holocene Drilling	Sonic	30	4	25 - 30	0.010	2	Permanent	Deep Aquifer	12/13/2023	11.67	6.47
TWA-6D	11/07/2019	Holocene Drilling	Sonic	30	4	25 - 30	0.010	2	Permanent	Deep Aquifer	12/13/2023	11.32	6.33
TWA-HA-01	08/05/2024	MFA	Hand Auger	2	2	--	--	--	--	--	--	--	--
TWA-HA-02	08/05/2024	MFA	Hand Auger	2	2	--	--	--	--	--	--	--	--
TWA-HA-03	08/05/2024	MFA	Hand Auger	2	2	--	--	--	--	--	--	--	--
TWA-SB-09	08/12/2024	AEC	Direct Push	15	2	--	--	--	--	--	--	--	--
TWA-SB-10	08/12/2024	AEC	Direct Push	20	2	--	--	--	--	--	--	--	--
TWA-SB-11	08/13/2024	AEC	Direct Push	20	2	--	--	--	--	--	--	--	--
TWA-SB-12	08/13/2024	AEC	Direct Push	20	2	--	--	--	--	--	--	--	--
TWA-SB-13	08/13/2024	AEC	Direct Push	20	2	--	--	--	--	--	--	--	--
TWA-SB-14	08/13/2024	AEC	Direct Push	20	2	--	--	--	--	--	--	--	--
TWA-SB-15	08/13/2024	AEC	Direct Push	15	2	--	--	--	--	--	--	--	--
TWA-SB-16	08/13/2024	AEC	Direct Push	15	2	--	--	--	--	--	--	--	--

Notes

-- = not available.

AEC = Anderson Environmental Contracting, LLC.

DTW = depth to water.

ft bgs = feet below ground surface.

HSA = hollow-stem auger.

MFA = Maul Foster & Alongi, Inc.

NAVD88 = North American Vertical Datum of 1988.

[a]Monitoring well decommissioned by Holt Drilling in December 2019.

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	TWA-SB-1	TWA-SB-2
Sample Name:			TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	SB-1	SB-2
Sample Date:			04/01/1991	04/01/1991	04/01/1991	04/01/1991	01/18/2002	01/16/2002	01/16/2002	01/17/2002	02/03/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Depth (ft bgs):			Composite	Composite	Composite	Composite	4.0	4.0	3.0	4.0	4.0	2.0	4.0	5-6	6.7-7
Hydrocarbon Identification (detect/non-detect)															
Gasoline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
Lube oil	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH (mg/kg)															
Gasoline-range hydrocarbons	30[a]	NV	--	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Diesel-range hydrocarbons	2,000	NV	--	--	--	--	19.6	10 U	10 U	10 U	10 U	10 U	10 U	50 U	50 U
Motor-oil-range hydrocarbons	2,000	NV	--	--	--	--	66 J	25 U	25 U	25 U	25 U	25 U	25 U	250 U	250 U
Diesel+Oil[b]	2,000	NV	--	--	--	--	85.6 J	25 U	25 U	25 U	25 U	25 U	25 U	250 U	250 U
Total Metals (mg/kg)															
Arsenic	20	7	1.6	1.3	1.8	1.7	6.27	1.64	1.49	0.974	1.67 J	1.22 J	1.3 J	3.53	1.63
Cadmium	2.0	1	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Chromium	NV	48	--	--	--	--	--	--	--	--	--	--	--	19.6	9.92
Copper	NV	36	--	--	--	--	--	--	--	--	--	--	--	17	8.59
Lead	1,000	24	1.3 U	1.3	6.5	3.6	8.6	1.2	1.14	1.41	1.24	0.983	1.03	17.8	3.25
Manganese	NV	1,200	--	--	--	--	--	--	--	--	--	--	--	104	44.7
Mercury	2.0	0.07	--	--	--	--	--	--	--	--	--	--	--	0.2 U	0.2 U
Nickel	NV	48	--	--	--	--	--	--	--	--	--	--	--	8.27	5.36
Selenium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Zinc	NV	85	--	--	--	--	--	--	--	--	--	--	--	36.4	17.9
PCB Aroclors (mg/kg)															
Aroclor 1016	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1221	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1232	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1242	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1248	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1254	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1260	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1262	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Aroclor 1268	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.02 U	0.02 U
Total PCBs[c]	10.0	NV	ND[d]	ND[d]	ND[d]	ND[d]	--	--	--	--	--	--	--	0.02 U	0.02 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	TWA-SB-1	TWA-SB-2
Sample Name:			TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	SB-1	SB-2
Sample Date:			04/01/1991	04/01/1991	04/01/1991	04/01/1991	01/18/2002	01/16/2002	01/16/2002	01/17/2002	02/03/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Depth (ft bgs):			Composite	Composite	Composite	Composite	4.0	4.0	3.0	4.0	4.0	2.0	4.0	5-6	6.7-7
VOCs (mg/kg)															
1,1,1,2-Tetrachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,1,1-Trichloroethane	2.0	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,1,2,2-Tetrachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,1,2-Trichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,1-Dichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,1-Dichloroethene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,1-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2,3-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
1,2,3-Trichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2,4-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
1,2,4-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
1,2-Dibromoethane	0.0050	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2-Dichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,3,5-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,3-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,4-Dioxane	NV	NV	--	--	--	--	ND[d]	ND[d]	ND[d]	ND[d]	ND[d]	ND[d]	ND[d]	--	--
2,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
2-Butanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
2-Hexanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
4-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
4-Isopropyltoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
4-Methyl-2-pentanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Acetone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.62	0.5 U
Benzene	0.030	NV	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.03 U	0.03 U
Bromobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Bromodichloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Bromoform	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Bromomethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Carbon tetrachloride	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Chlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Chloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

MAUL FOSTER ALONGI

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	TWA-SB-1	TWA-SB-2
Sample Name:			TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	SB-1	SB-2
Sample Date:			04/01/1991	04/01/1991	04/01/1991	04/01/1991	01/18/2002	01/16/2002	01/16/2002	01/17/2002	02/03/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Depth (ft bgs):			Composite	Composite	Composite	Composite	4.0	4.0	3.0	4.0	4.0	2.0	4.0	5-6	6.7-7
VOCs cont. (mg/kg)															
Chloroform	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Chloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
cis-1,2-Dichloroethene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
cis-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Dibromochloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Dibromomethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Dichlorodifluoromethane (Freon 12)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Ethylbenzene	6.0	NV	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U
Hexachlorobutadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
Isopropylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Methyl tert-butyl ether	0.10	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Methylene chloride	0.020	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Naphthalene	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
n-Hexane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
n-Propylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
sec-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Styrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
tert-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Tetrachloroethene (PCE)	0.050	NV	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.025 U	0.025 U
Toluene	7.0	NV	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U
trans-1,2-Dichloroethene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
trans-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Trichloroethene (TCE)	0.030	NV	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
Trichlorofluoromethane (Freon 11)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Vinyl chloride	NV	NV	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U
Xylenes (total)[e]	9.0	NV	--	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[(1)] Industrial Properties	Washington State Background Metals, Puget Sound[(2)]	TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	TWA-SB-1	TWA-SB-2
Sample Name:			TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	SB-1	SB-2
Sample Date:			04/01/1991	04/01/1991	04/01/1991	04/01/1991	01/18/2002	01/16/2002	01/16/2002	01/17/2002	02/03/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Depth (ft bgs):			Composite	Composite	Composite	Composite	4.0	4.0	3.0	4.0	4.0	2.0	4.0	5-6	6.7-7
SVOCs (mg/kg)															
1,2,4-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,2-Diphenylhydrazine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
1-Methylnaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.012	0.01 U
2,4,5-Trichlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2,4,6-Trichlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2,4-Dichlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2,4-Dimethylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2,4-Dinitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1.5 U
2,4-Dinitrotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
2,6-Dinitrotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
2-Chloronaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
2-Chlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2-Methylnaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.014	0.01 U
2-Methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
2-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
3,3'-Dichlorobenzidine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1.5 U
4-Bromophenyl phenyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
4-Chloroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U
4-Chlorophenyl phenyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1.5 U
Acenaphthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.046
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U
Anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U
Benzo(a)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.016	0.01 U
Benzo(a)pyrene	2.0	NV	--	--	--	--	--	--	--	--	--	--	--	0.015	0.01 U
Benzo(b)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.021	0.01 U
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U
Benzo(k)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	TWA-SB-1	TWA-SB-2
Sample Name:			TP010203	TP040507	TP08091011	TP121314	SRI-16	SRI-17	SRI-18	SRI-19	SRI-32	SRI-33	SRI-34	SB-1	SB-2
Sample Date:			04/01/1991	04/01/1991	04/01/1991	04/01/1991	01/18/2002	01/16/2002	01/16/2002	01/17/2002	02/03/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Depth (ft bgs):			Composite	Composite	Composite	Composite	4.0	4.0	3.0	4.0	4.0	2.0	4.0	5-6	6.7-7
SVOCs cont. (mg/kg)															
Benzoic acid	NV	NV	--	--	--	--	--	--	--	--	--	--	--	2.5 U	2.5 U
Benzyl alcohol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Bis(2-chloro-1-methylethyl) ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Bis(2-chloroethyl) ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Bis(2-ethylhexyl) phthalate	NV	NV	0.047	0.12	0.17 U	0.17 U	--	--	--	--	--	--	--	0.8 U	0.8 U
Butylbenzyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Carbazole	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Chrysene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.021	0.01 U
Dibenzo(a,h)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U
Dibenzofuran	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Diethyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Di-n-butyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Di-n-octyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.036	0.054
Fluorene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U
Hexachlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Hexachlorobutadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Hexachlorocyclopentadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.15 U	0.15 U
Hexachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.01 U	0.01 U
Isophorone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Naphthalene	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01 U
Nitrobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
N-Nitrosodimethylamine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
N-Nitrosodipropylamine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.05 U	0.05 U
Pentachlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.25 U	0.25 U
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.023	0.01 U
Phenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U
Pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	0.029	0.045
Naphthalenes, total[f]	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	0.036	0.01 U
cPAH TEQ[g][3]	2.0	NV	--	--	--	--	--	--	--	--	--	--	--	0.020	0.01 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1]	Washington State Background Metals, Puget Sound[2]	TWA-SB-3		TWA-SB-4	TWA-5		TWA-SB-09	TWA-SB-10	TWA-SB-11		
Sample Name:			SB-3-1	SB-3-2	SB-4	TWA-5-30-S	TWA-5-38-S	TWA-SB-09-S-6.0	TWA-SB-10-S-6.5	TWA-SB-11-S-1.7	TWA-SB-11-S-6.0	TWA-SB-11-S-16.0
Sample Date:	Industrial Properties		09/24/2019	09/24/2019	09/24/2019	09/24/2019	09/24/2019	08/12/2024	08/12/2024	08/12/2024	08/12/2024	08/12/2024
Sample Depth (ft bgs):			6-7	9-10	6.5-7.5	30	38	6.0	6.5	1.7	6.0	16.0
Hydrocarbon Identification (detect/non-detect)												
Gasoline	NV	NV	--	--	--	--	--	--	--	--	--	--
Diesel	NV	NV	--	--	--	--	--	--	--	--	--	--
Lube oil	NV	NV	--	--	--	--	--	--	--	--	--	--
TPH (mg/kg)												
Gasoline-range hydrocarbons	30[a]	NV	5 U	5 U	5 U	--	--	2 U	2 U	2 U	2 U	2 U
Diesel-range hydrocarbons	2,000	NV	50 U	50 U	50 U	--	--	25 U	25 U	120	73	25 U
Motor-oil-range hydrocarbons	2,000	NV	250 U	250 U	250 U	--	--	120 U	120 U	600	120 U	120 U
Diesel+Oil[b]	2,000	NV	250 U	250 U	250 U			120 U	120 U	720	130	120 U
Total Metals (mg/kg)												
Arsenic	20	7	1.13	7.83	1.65	--	--	1	2.5	7.7	1.4	2.7
Cadmium	2.0	1	1 U	1 U	1 U	--	--	0.2 U	0.42	5.6	0.42	0.26
Chromium	NV	48	8.6	12.7	8.29	--	--	7.9	17	36	2.1	11
Copper	NV	36	10.4	25.3	10.7	--	--	9.3	16	170	60	28
Lead	1,000	24	1.55	4.75	1.3	--	--	1.2	11	330	23	3.7
Manganese	NV	1,200	58.2	70	57.7	--	--	59	670	340	18 J	140
Mercury	2.0	0.07	0.2 U	0.2 U	0.2 U	--	--	1 U	1 U	1 U	1 U	1 U
Nickel	NV	48	5.9	12.8	10.3	--	--	9.3	22	45	23 J	11
Selenium	NV	NV	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	1 U
Zinc	NV	85	17	26.3	16.4	--	--	20	55	1,100	160 J	31
PCB Aroclors (mg/kg)												
Aroclor 1016	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1221	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1232	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1242	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.23	0.05 U	0.02 U
Aroclor 1248	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1254	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.13	0.54	0.26	0.02 U
Aroclor 1260	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.11	0.38	0.09 U	0.02 U
Aroclor 1262	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1268	NV	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Total PCBs[c]	10.0	NV	0.02 U	0.02 U	0.02 U	--	--	0.02 U	0.24	1.2	0.26	0.02 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-3		TWA-SB-4	TWA-5		TWA-SB-09	TWA-SB-10	TWA-SB-11		
Sample Name:			SB-3-1	SB-3-2	SB-4	TWA-5-30-S	TWA-5-38-S	TWA-SB-09-S-6.0	TWA-SB-10-S-6.5	TWA-SB-11-S-1.7	TWA-SB-11-S-6.0	TWA-SB-11-S-16.0
Sample Date:			09/24/2019	09/24/2019	09/24/2019	09/24/2019	09/24/2019	08/12/2024	08/12/2024	08/12/2024	08/12/2024	08/12/2024
Sample Depth (ft bgs):			6-7	9-10	6.5-7.5	30	38	6.0	6.5	1.7	6.0	16.0
VOCs (mg/kg)												
1,1,1,2-Tetrachloroethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
1,1,1-Trichloroethane	2.0	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,1,2,2-Tetrachloroethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
1,1,2-Trichloroethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,1-Dichloroethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,1-Dichloroethene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,1-Dichloropropene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,3-Trichlorobenzene	NV	NV	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,3-Trichloropropane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,4-Trichlorobenzene	NV	NV	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,4-Trimethylbenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.088	0.005 UJ
1,2-Dibromo-3-chloropropane	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.049 UJ	0.049 UJ	0.049 UJ	0.049 UJ	0.049 UJ
1,2-Dibromoethane	0.0050	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2-Dichloroethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
1,2-Dichloropropane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ
1,3,5-Trimethylbenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.022 J	0.005 UJ
1,3-Dichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,3-Dichloropropane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.007 UJ	0.007 UJ	0.007 UJ	0.007 UJ	0.007 UJ
1,4-Dichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.013 UJ	0.013 UJ	0.013 UJ	0.013 UJ	0.013 UJ
2-Butanone	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.47 UJ	0.47 UJ	0.47 UJ	0.47 UJ	0.47 UJ
2-Chlorotoluene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
2-Hexanone	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.43 UJ	0.43 UJ	0.43 UJ	0.43 UJ	0.43 UJ
4-Chlorotoluene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4-Isopropyltoluene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.0092 J	0.0064 J
4-Methyl-2-pentanone	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ
Acetone	NV	NV	0.5 U	1.9	0.5 U	0.5 U	0.5 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Benzene	0.030	NV	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.002 U	0.002 U	0.002 U	0.012	0.0035
Bromobenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Bromodichloromethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ
Bromoform	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
Bromomethane	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ
Carbon tetrachloride	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ
Chlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Chloroethane	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.07 UJ	0.07 UJ	0.07 UJ	0.07 UJ	0.07 UJ

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-3		TWA-SB-4	TWA-5		TWA-SB-09	TWA-SB-10	TWA-SB-11		
Sample Name:			SB-3-1	SB-3-2	SB-4	TWA-5-30-S	TWA-5-38-S	TWA-SB-09-S-6.0	TWA-SB-10-S-6.5	TWA-SB-11-S-1.7	TWA-SB-11-S-6.0	TWA-SB-11-S-16.0
Sample Date:			09/24/2019	09/24/2019	09/24/2019	09/24/2019	09/24/2019	08/12/2024	08/12/2024	08/12/2024	08/12/2024	08/12/2024
Sample Depth (ft bgs):			6-7	9-10	6.5-7.5	30	38	6.0	6.5	1.7	6.0	16.0
VOCs cont. (mg/kg)												
Chloroform	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ
Chloromethane	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.044 UJ	0.044 UJ	0.044 UJ	0.044 UJ	0.044 UJ
cis-1,2-Dichloroethene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.0017	0.002 U
cis-1,3-Dichloropropene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ
Dibromochloromethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Dibromomethane	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
Dichlorodifluoromethane (Freon 12)	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ
Ethylbenzene	6.0	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.0087	0.002 U
Hexachlorobutadiene	NV	NV	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Isopropylbenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.048 J	0.005 UJ
m,p-Xylene	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.004 U	0.004 U	0.004 U	0.057	0.004 U
Methyl tert-butyl ether	0.10	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methylene chloride	0.020	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ
Naphthalene	5.0	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.043	0.015
n-Hexane	NV	NV	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ
n-Propylbenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.016 J	0.005 UJ
o-Xylene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.035	0.002 U
sec-Butylbenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Styrene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U	0.005 UJ
tert-Butylbenzene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Tetrachloroethene (PCE)	0.050	NV	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Toluene	7.0	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.068	0.014
trans-1,2-Dichloroethene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
trans-1,3-Dichloropropene	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Trichloroethene (TCE)	0.030	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Trichlorofluoromethane (Freon 11)	NV	NV	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Vinyl chloride	NV	NV	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Xylenes (total)[e]	9.0	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.004 U	0.004 U	0.004 U	0.092	0.004 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-3		TWA-SB-4	TWA-5		TWA-SB-09	TWA-SB-10	TWA-SB-11		
Sample Name:			SB-3-1	SB-3-2	SB-4	TWA-5-30-S	TWA-5-38-S	TWA-SB-09-S-6.0	TWA-SB-10-S-6.5	TWA-SB-11-S-1.7	TWA-SB-11-S-6.0	TWA-SB-11-S-16.0
Sample Date:			09/24/2019	09/24/2019	09/24/2019	09/24/2019	09/24/2019	08/12/2024	08/12/2024	08/12/2024	08/12/2024	08/12/2024
Sample Depth (ft bgs):			6-7	9-10	6.5-7.5	30	38	6.0	6.5	1.7	6.0	16.0
SVOCs (mg/kg)												
1,2,4-Trichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
1,2-Dichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
1,2-Diphenylhydrazine	NV	NV	--	--	--	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
1,3-Dichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
1,4-Dichlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
1-Methylnaphthalene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0027	0.0025 U
2,4,5-Trichlorophenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4,6-Trichlorophenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4-Dichlorophenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4-Dimethylphenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4-Dinitrophenol	NV	NV	1.5 U	1.5 U	1.5 U	--	--	1.5 U	1.5 U	7.5 U	1.5 U	1.5 U
2,4-Dinitrotoluene	NV	NV	0.25 U	0.25 U	0.25 U	--	--	0.25 U	0.25 U	1.2 U	0.25 U	0.25 U
2,6-Dinitrotoluene	NV	NV	0.25 U	0.25 U	0.25 U	--	--	0.25 U	0.25 U	1.2 U	0.25 U	0.25 U
2-Chloronaphthalene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
2-Chlorophenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2-Methylnaphthalene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U
2-Methylphenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2-Nitroaniline	NV	NV	0.25 U	0.25 U	0.25 U	--	--	0.25 U	0.25 U	1.2 U	0.25 U	0.25 U
2-Nitrophenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	1 U	1 U	1 U	--	--	1 U	1 U	5 U	1 U	1 U
3,3'-Dichlorobenzidine	NV	NV	--	--	--	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
3-Nitroaniline	NV	NV	5 U	5 U	5 U	--	--	5 U	5 U	25 U	5 U	5 U
4,6-Dinitro-2-methylphenol	NV	NV	1.5 U	1.5 U	1.5 U	--	--	1.5 U	1.5 U	7.5 U	1.5 U	1.5 U
4-Bromophenyl phenyl ether	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
4-Chloro-3-methylphenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
4-Chloroaniline	NV	NV	5 U	5 U	5 U	--	--	5 U	5 U	25 U	5 U	5 U
4-Chlorophenyl phenyl ether	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
4-Nitroaniline	NV	NV	5 U	5 U	5 U	--	--	5 U	5 U	25 U	5 U	5 U
4-Nitrophenol	NV	NV	1.5 U	1.5 U	1.5 U	--	--	1.5 U	1.5 U	7.5 U	1.5 U	1.5 U
Acenaphthene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U
Acenaphthylene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U
Anthracene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U
Benzo(a)anthracene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 U	0.005 U	0.025 U	0.005 U	0.005 U
Benzo(a)pyrene	2.0	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.045	0.0025 U	0.0025 U
Benzo(b)fluoranthene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.003	0.048	0.0025 U	0.0025 U
Benzo(ghi)perylene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 UJ	0.005 UJ	0.1	0.005 UJ	0.005 UJ
Benzo(k)fluoranthene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1]	Washington State Background Metals, Puget Sound[2]	TWA-SB-3		TWA-SB-4	TWA-5		TWA-SB-09	TWA-SB-10	TWA-SB-11		
Sample Name:			SB-3-1	SB-3-2	SB-4	TWA-5-30-S	TWA-5-38-S	TWA-SB-09-S-6.0	TWA-SB-10-S-6.5	TWA-SB-11-S-1.7	TWA-SB-11-S-6.0	TWA-SB-11-S-16.0
Sample Date:	Industrial Properties		09/24/2019	09/24/2019	09/24/2019	09/24/2019	09/24/2019	08/12/2024	08/12/2024	08/12/2024	08/12/2024	08/12/2024
Sample Depth (ft bgs):			6-7	9-10	6.5-7.5	30	38	6.0	6.5	1.7	6.0	16.0
SVOCs cont. (mg/kg)												
Benzoic acid	NV	NV	2.5 U	2.5 U	2.5 U	--	--	2.5 U	2.5 U	12 UJ	2.5 U	2.5 U
Benzyl alcohol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Bis(2-chloro-1-methylethyl) ether	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Bis(2-chloroethoxy)methane	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Bis(2-chloroethyl) ether	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Bis(2-ethylhexyl) phthalate	NV	NV	0.8 U	0.8 U	0.8 U	--	--	0.8 U	0.8 U	17	0.8 U	0.8 U
Butylbenzyl phthalate	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	6.7	0.5 U	0.5 U
Carbazole	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U
Chrysene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0034	0.056	0.0025 U	0.0025 U
Dibenzo(a,h)anthracene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 U	0.005 U	0.025 U	0.005 U	0.005 U
Dibenzofuran	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0027	0.0025 U
Diethyl phthalate	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Dimethyl phthalate	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Di-n-butyl phthalate	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Di-n-octyl phthalate	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Fluoranthene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0054	0.027	0.0028	0.0025 U
Fluorene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0025 U	0.012 U	0.0025 U	0.0025 U
Hexachlorobenzene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Hexachlorobutadiene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Hexachlorocyclopentadiene	NV	NV	0.15 U	0.15 U	0.15 U	--	--	0.15 UJ	0.15 UJ	0.75 U	0.15 UJ	0.15 UJ
Hexachloroethane	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Indeno(1,2,3-cd)pyrene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 U	0.005 U	0.036	0.005 U	0.005 U
Isophorone	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Naphthalene	5.0	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 U	0.005 U	0.025 U	0.0059	0.005 U
Nitrobenzene	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
N-Nitrosodimethylamine	NV	NV	--	--	--	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
N-Nitrosodiphenylamine	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
N-Nitrosodipropylamine	NV	NV	0.05 U	0.05 U	0.05 U	--	--	0.05 U	0.05 U	0.25 U	0.05 U	0.05 U
Pentachlorophenol	NV	NV	0.25 U	0.25 U	0.25 U	--	--	0.25 U	0.25 U	1.2 U	0.25 U	0.25 U
Phenanthrene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0058	0.028	0.0054	0.0025 U
Phenol	NV	NV	0.5 U	0.5 U	0.5 U	--	--	0.25 U	0.25 U	1.2 U	0.25 U	0.25 U
Pyrene	NV	NV	0.01 U	0.01 U	0.01 U	--	--	0.0025 U	0.0066	0.065	0.004	0.0025 U
Naphthalenes, total[f]	5.0	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 U	0.005 U	0.025 U	0.0099	0.005 U
cPAH TEQ[g][3]	2.0	NV	0.01 U	0.01 U	0.01 U	--	--	0.005 U	0.005 U	0.057	0.005 U	0.005 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-12				TWA-SB-13	TWA-SB-14	TWA-SB-15	TWA-SB-16
Sample Name:			TWA-SB-12-S-8.0	TWA-SB-12-S-9.0	TWA-SB-12-S-16.9	TWA-SB-12-S-18.5	TWA-SB-13-S-7.5	TWA-SB-14-S-1.5	TWA-SB-15-S-1.7	TWA-SB-16-S-1.5
Sample Date:			08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/12/2024
Sample Depth (ft bgs):			8.0	9.0	16.9	18.5	7.5	1.5	1.7	1.5
Hydrocarbon Identification (detect/non-detect)										
Gasoline	NV	NV	--	--	ND	--	--	--	--	--
Diesel	NV	NV	--	--	ND	--	--	--	--	--
Lube oil	NV	NV	--	--	DETECT	--	--	--	--	--
TPH (mg/kg)										
Gasoline-range hydrocarbons	30[a]	NV	51	14	--	39	4.6	2 U	2 U	3
Diesel-range hydrocarbons	2,000	NV	2,400	1,500	510	520	25 U	44	25 U	25 U
Motor-oil-range hydrocarbons	2,000	NV	8,300	3,300	1,400	1,100	120 U	120 U	120 U	120 U
Diesel+Oil[b]	2,000	NV	11,000	4,800	1,900	1,600	120 U	100	120 U	120 U
Total Metals (mg/kg)										
Arsenic	20	7	14	12	7.9	11	1.6	6	3.1	3.4
Cadmium	2.0	1	13	11	5.3	6.7	0.2 U	1.2	0.23	0.2 U
Chromium	NV	48	61	29	43	21	6.7	19	11	9.1
Copper	NV	36	140	3,700	100	66	9	36	15	7.9
Lead	1,000	24	1,400	690	350	360	4.1	77	16	2.5
Manganese	NV	1,200	600	290	330	210	52	460	160	60
Mercury	2.0	0.07	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Nickel	NV	48	80	55	55	34	5.3	23	9.8	4.4
Selenium	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Zinc	NV	85	4,000	1,400	1,000	600	18	160	36	18
PCB Aroclors (mg/kg)										
Aroclor 1016	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1221	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1232	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1242	NV	NV	1.8	1.3	0.37	0.61	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1248	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1254	NV	NV	5.3	3.3	1.9	1.6	0.02 U	0.095	0.02 U	0.02 U
Aroclor 1260	NV	NV	3.3	1.7	2.6	2.6	0.02 U	0.11	0.02 U	0.02 U
Aroclor 1262	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Aroclor 1268	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Total PCBs[c]	10.0	NV	10	6.3	4.9	4.8	0.02 U	0.21	0.02 U	0.02 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1]	Washington State Background Metals, Puget Sound[2]	TWA-SB-12				TWA-SB-13	TWA-SB-14	TWA-SB-15	TWA-SB-16
Sample Name:			TWA-SB-12-S-8.0	TWA-SB-12-S-9.0	TWA-SB-12-S-16.9	TWA-SB-12-S-18.5	TWA-SB-13-S-7.5	TWA-SB-14-S-1.5	TWA-SB-15-S-1.7	TWA-SB-16-S-1.5
Sample Date:	Industrial Properties		08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/12/2024
Sample Depth (ft bgs):			8.0	9.0	16.9	18.5	7.5	1.5	1.7	1.5
VOCs (mg/kg)										
1,1,1,2-Tetrachloroethane	NV	NV	0.0065 UJ	0.0065 UJ	--	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
1,1,1-Trichloroethane	2.0	NV	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,1,2,2-Tetrachloroethane	NV	NV	0.0065 UJ	0.0065 UJ	--	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
1,1,2-Trichloroethane	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,1-Dichloroethane	NV	NV	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,1-Dichloroethene	NV	NV	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,1-Dichloropropene	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,3-Trichlorobenzene	NV	NV	0.005 UJ	0.012 J	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,3-Trichloropropane	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,4-Trichlorobenzene	NV	NV	0.016 J	0.02 J	--	0.017 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2,4-Trimethylbenzene	NV	NV	0.92	0.071	--	0.071	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2-Dibromo-3-chloropropane	NV	NV	0.049 UJ	0.049 UJ	--	0.049 UJ	0.049 UJ	0.049 UJ	0.049 UJ	0.049 UJ
1,2-Dibromoethane	0.0050	NV	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichlorobenzene	NV	NV	0.0057 J	0.0053 J	--	0.0059 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,2-Dichloroethane	NV	NV	0.003 U	0.003 U	--	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
1,2-Dichloropropane	NV	NV	0.008 UJ	0.008 UJ	--	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ
1,3,5-Trimethylbenzene	NV	NV	0.41	0.0275 J	--	0.023 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,3-Dichlorobenzene	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,3-Dichloropropane	NV	NV	0.007 UJ	0.007 UJ	--	0.007 UJ	0.007 UJ	0.007 UJ	0.007 UJ	0.007 UJ
1,4-Dichlorobenzene	NV	NV	0.005 UJ	0.0092 J	--	0.0095 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--
2,2-Dichloropropane	NV	NV	0.013 UJ	0.013 UJ	--	0.013 UJ	0.013 UJ	0.013 UJ	0.013 UJ	0.013 UJ
2-Butanone	NV	NV	0.47 UJ	0.47 UJ	--	0.47 UJ	0.47 UJ	0.47 UJ	0.47 UJ	0.47 UJ
2-Chlorotoluene	NV	NV	0.005 UJ	0.021 J	--	0.019 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
2-Hexanone	NV	NV	0.43 UJ	0.43 UJ	--	0.43 UJ	0.43 UJ	0.43 UJ	0.43 UJ	0.43 UJ
4-Chlorotoluene	NV	NV	0.005 UJ	0.0083 J	--	0.012 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
4-Isopropyltoluene	NV	NV	0.089	0.022 J	--	0.019 J	0.005 UJ	0.005 UJ	0.005 UJ	0.0075 J
4-Methyl-2-pentanone	NV	NV	0.24 UJ	0.24 UJ	--	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ
Acetone	NV	NV	1 UJ	1 UJ	--	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Benzene	0.030	NV	0.014	0.012	--	0.024	0.002 U	0.002 U	0.002 U	0.002 U
Bromobenzene	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Bromodichloromethane	NV	NV	0.006 UJ	0.006 UJ	--	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ
Bromoform	NV	NV	0.0065 UJ	0.0065 UJ	--	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
Bromomethane	NV	NV	0.095 UJ	0.095 UJ	--	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ
Carbon tetrachloride	NV	NV	0.008 UJ	0.008 UJ	--	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ	0.008 UJ
Chlorobenzene	NV	NV	0.005 UJ	0.008 J	--	0.025	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Chloroethane	NV	NV	0.07 UJ	0.07 UJ	--	0.07 UJ	0.07 UJ	0.07 UJ	0.07 UJ	0.07 UJ

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-12				TWA-SB-13	TWA-SB-14	TWA-SB-15	TWA-SB-16
Sample Name:			TWA-SB-12-S-8.0	TWA-SB-12-S-9.0	TWA-SB-12-S-16.9	TWA-SB-12-S-18.5	TWA-SB-13-S-7.5	TWA-SB-14-S-1.5	TWA-SB-15-S-1.7	TWA-SB-16-S-1.5
Sample Date:			08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/12/2024
Sample Depth (ft bgs):			8.0	9.0	16.9	18.5	7.5	1.5	1.7	1.5
VOCs cont. (mg/kg)										
Chloroform	NV	NV	0.006 UJ	0.006 UJ	--	0.0098 J	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ
Chloromethane	NV	NV	0.044 UJ	0.044 UJ	--	0.0074 J	0.044 UJ	0.044 UJ	0.044 UJ	0.044 UJ
cis-1,2-Dichloroethene	NV	NV	0.0097	0.008	--	0.068	0.002 U	0.002 U	0.002 U	0.002 U
cis-1,3-Dichloropropene	NV	NV	0.0055 UJ	0.0055 UJ	--	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ
Dibromochloromethane	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Dibromomethane	NV	NV	0.0065 UJ	0.0065 UJ	--	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ
Dichlorodifluoromethane (Freon 12)	NV	NV	0.01 UJ	0.01 UJ	--	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ
Ethylbenzene	6.0	NV	0.58	0.077	--	0.044	0.002 U	0.002 U	0.002 U	0.002 U
Hexachlorobutadiene	NV	NV	0.005 UJ	0.011 J	--	0.015 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Isopropylbenzene	NV	NV	0.13	0.018 J	--	0.014 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
m,p-Xylene	NV	NV	0.62	0.1	--	0.062	0.004 U	0.004	0.004 U	0.004 U
Methyl tert-butyl ether	0.10	NV	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methylene chloride	0.020	NV	0.11 UJ	0.11 UJ	--	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ
Naphthalene	5.0	NV	0.47	0.19	--	0.23	0.005 UJ	0.0075 J	0.005 UJ	0.005 UJ
n-Hexane	NV	NV	0.25 UJ	0.25 UJ	--	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.25 UJ
n-Propylbenzene	NV	NV	0.17	0.014 J	--	0.014 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
o-Xylene	NV	NV	0.43	0.057	--	0.032	0.002 U	0.0025	0.002 U	0.002 U
sec-Butylbenzene	NV	NV	0.043 J	0.0064 J	--	0.006 J	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Styrene	NV	NV	0.087	0.064	--	0.053	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
tert-Butylbenzene	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Tetrachloroethene (PCE)	0.050	NV	0.0035	0.082	--	0.49	0.002 U	0.002 U	0.002 U	0.002 U
Toluene	7.0	NV	0.13	0.045	--	0.069	0.002 U	0.0046	0.002 U	0.002 U
trans-1,2-Dichloroethene	NV	NV	0.0094	0.002 U	--	0.0024	0.002 U	0.002 U	0.002 U	0.002 U
trans-1,3-Dichloropropene	NV	NV	0.005 UJ	0.005 UJ	--	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Trichloroethene (TCE)	0.030	NV	0.0056	0.028	--	0.64	0.002 U	0.002 U	0.002 U	0.002 U
Trichlorofluoromethane (Freon 11)	NV	NV	0.012 J	0.081 J	--	1.7	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Vinyl chloride	NV	NV	0.002 U	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Xylenes (total)[e]	9.0	NV	1.1	0.16	--	0.094	0.004 U	0.0065	0.004 U	0.004 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-12				TWA-SB-13	TWA-SB-14	TWA-SB-15	TWA-SB-16
Sample Name:			TWA-SB-12-S-8.0	TWA-SB-12-S-9.0	TWA-SB-12-S-16.9	TWA-SB-12-S-18.5	TWA-SB-13-S-7.5	TWA-SB-14-S-1.5	TWA-SB-15-S-1.7	TWA-SB-16-S-1.5
Sample Date:			08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/12/2024
Sample Depth (ft bgs):			8.0	9.0	16.9	18.5	7.5	1.5	1.7	1.5
SVOCs (mg/kg)										
1,2,4-Trichlorobenzene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
1,2-Dichlorobenzene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
1,2-Diphenylhydrazine	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
1,3-Dichlorobenzene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
1,4-Dichlorobenzene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
1-Methylnaphthalene	NV	NV	0.47	0.16	0.24	0.061	0.0025 U	0.012 U	0.0025 U	0.0025 U
2,4,5-Trichlorophenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4,6-Trichlorophenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4-Dichlorophenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4-Dimethylphenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2,4-Dinitrophenol	NV	NV	30 U	7.5 U	7.5 U	7.5 U	1.5 U	7.5 U	1.5 U	1.5 U
2,4-Dinitrotoluene	NV	NV	5 U	1.2 U	1.2 U	1.2 U	0.25 U	1.2 U	0.25 U	0.25 U
2,6-Dinitrotoluene	NV	NV	5 U	1.2 U	1.2 U	1.2 U	0.25 U	1.2 U	0.25 U	0.25 U
2-Chloronaphthalene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
2-Chlorophenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2-Methylnaphthalene	NV	NV	0.74	0.25	0.38	0.095	0.0025 U	0.012 U	0.0025 U	0.0025 U
2-Methylphenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
2-Nitroaniline	NV	NV	5 U	1.2 U	1.2 U	1.2 U	0.25 U	1.2 U	0.25 U	0.25 U
2-Nitrophenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	20 U	5 U	5 U	5 U	1 U	5 U	1 U	1 U
3,3'-Dichlorobenzidine	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
3-Nitroaniline	NV	NV	100 U	25 U	25 U	25 U	5 U	25 U	5 U	5 U
4,6-Dinitro-2-methylphenol	NV	NV	30 U	7.5 U	7.5 U	7.5 U	1.5 U	7.5 U	1.5 U	1.5 U
4-Bromophenyl phenyl ether	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
4-Chloro-3-methylphenol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
4-Chloroaniline	NV	NV	100 U	25 U	25 U	25 U	5 U	25 U	5 U	5 U
4-Chlorophenyl phenyl ether	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
4-Nitroaniline	NV	NV	100 U	25 U	25 U	25 U	5 U	25 U	5 U	5 U
4-Nitrophenol	NV	NV	30 U	7.5 U	7.5 U	7.5 U	1.5 U	7.5 U	1.5 U	1.5 U
Acenaphthene	NV	NV	0.13	0.11	0.062	0.058	0.0025 U	0.027	0.0029	0.0025 U
Acenaphthylene	NV	NV	0.05 U	0.012 U	0.012 U	0.012 U	0.0025 U	0.036	0.0087	0.0025 U
Anthracene	NV	NV	0.057	0.076	0.046	0.098	0.0025 U	0.23	0.031	0.0025 U
Benzo(a)anthracene	NV	NV	0.22	0.2	0.27	0.2	0.005 U	1	0.071	0.005 U
Benzo(a)pyrene	2.0	NV	0.23	0.14	0.3	0.17	0.0025 U	1.1	0.11	0.0025 U
Benzo(b)fluoranthene	NV	NV	0.28	0.19	0.36	0.23	0.0025 U	2.3	0.21	0.0025 U
Benzo(ghi)perylene	NV	NV	0.4	0.18	0.3	0.12	0.005 UJ	0.47	0.072 J	0.005 UJ
Benzo(k)fluoranthene	NV	NV	0.07	0.047	0.13	0.086	0.0025 U	0.75	0.071	0.0025 U

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Location:	MTCA Method A[1] Industrial Properties	Washington State Background Metals, Puget Sound[2]	TWA-SB-12				TWA-SB-13	TWA-SB-14	TWA-SB-15	TWA-SB-16
Sample Name:			TWA-SB-12-S-8.0	TWA-SB-12-S-9.0	TWA-SB-12-S-16.9	TWA-SB-12-S-18.5	TWA-SB-13-S-7.5	TWA-SB-14-S-1.5	TWA-SB-15-S-1.7	TWA-SB-16-S-1.5
Sample Date:			08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/13/2024	08/12/2024
Sample Depth (ft bgs):			8.0	9.0	16.9	18.5	7.5	1.5	1.7	1.5
SVOCs cont. (mg/kg)										
Benzoic acid	NV	NV	50 UJ	12 UJ	12 U	12 UJ	2.5 U	12 UJ	2.5 U	2.5 U
Benzyl alcohol	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Bis(2-chloro-1-methylethyl) ether	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Bis(2-chloroethoxy)methane	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Bis(2-chloroethyl) ether	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Bis(2-ethylhexyl) phthalate	NV	NV	320	9.1	100	11	0.8 U	4 U	0.8 U	0.8 U
Butylbenzyl phthalate	NV	NV	29	2.9	5.7	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Carbazole	NV	NV	0.05 U	0.042	0.033	0.039	0.0025 U	0.031	0.0072	0.0025 U
Chrysene	NV	NV	0.45	0.39	0.46	0.28	0.0025 U	1.9	0.18	0.0056
Dibenzo(a,h)anthracene	NV	NV	0.1 U	0.031	0.051	0.025 U	0.005 U	0.12	0.015	0.005 U
Dibenzofuran	NV	NV	0.05 U	0.069	0.035	0.052	0.0025 U	0.013	0.0032	0.0025 U
Diethyl phthalate	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Dimethyl phthalate	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Di-n-butyl phthalate	NV	NV	10 U	2.5 U	2.5 U	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Di-n-octyl phthalate	NV	NV	19	2.5 U	6.7	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U
Fluoranthene	NV	NV	0.35	0.36	0.34	0.36	0.0025 U	1.6	0.067	0.0025 U
Fluorene	NV	NV	0.12	0.14	0.077	0.092	0.0025 U	0.023	0.0051	0.0025 U
Hexachlorobenzene	NV	NV	1 U	0.28	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Hexachlorobutadiene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Hexachlorocyclopentadiene	NV	NV	3 U	0.75 U	0.75 UJ	0.75 U	0.15 UJ	0.75 U	0.15 UJ	0.15 UJ
Hexachloroethane	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Indeno(1,2,3-cd)pyrene	NV	NV	0.16	0.085	0.17	0.093	0.005 U	0.49	0.073	0.005 U
Isophorone	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Naphthalene	5.0	NV	0.36	0.18	0.18	0.092	0.005 U	0.025 U	0.0072	0.005 U
Nitrobenzene	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
N-Nitrosodimethylamine	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
N-Nitrosodiphenylamine	NV	NV	1 U	0.25 U	0.28	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
N-Nitrosodipropylamine	NV	NV	1 U	0.25 U	0.25 U	0.25 U	0.05 U	0.25 U	0.05 U	0.05 U
Pentachlorophenol	NV	NV	5 U	1.2 U	1.2 U	1.2 U	0.25 U	1.2 U	0.25 U	0.25 U
Phenanthrene	NV	NV	0.48	0.56	0.3	0.44	0.0025 U	0.18	0.03	0.0025 U
Phenol	NV	NV	5 U	1.2 U	1.2 U	1.2 U	0.25 U	1.2 U	0.25 U	0.25 U
Pyrene	NV	NV	0.85	0.79	0.53	0.52	0.0025 U	3.8	0.057	0.0025 U
Naphthalenes, total[f]	5.0	NV	1.6	0.59	0.8	0.25	0.005 U	0.025 U	0.0097	0.005 U
cPAH TEQ[g][3]	2.0	NV	0.31	0.20	0.40	0.23	0.005 U	1.6	0.16	0.0023

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Table 2-2
Summary of Soil Analytical Data
Hylebos Marsh Interim Action, Port of Tacoma

Notes

Data summation rules are as follows: non-detect results are multiplied by one-half (except for PCB Aroclors) when used for sums or TEQ calculations. When all results are non-detect, the highest reporting limit is provided as the sum or TEQ.

Shading (color key below) indicates values that exceed screening criteria; non-detects (U, UJ) were not compared with screening criteria. Values that exceeded background metals values were only shaded if a corresponding Method A value was not available.

MTCA Method A, Industrial Properties

Washington State Background Metals, Puget Sound

-- = not analyzed.

cPAH = carcinogenic polycyclic aromatic hydrocarbon.

ft bgs = feet below ground surface.

J = result is estimated.

mg/kg = milligrams per kilogram.

MTCA = Model Toxics Control Act.

ND = not detected.

NV = no value.

PCB = polychlorinated biphenyl.

SVOC = semivolatile organic compound.

TEQ = toxicity equivalency.

TPH = total petroleum hydrocarbons.

U = result is non-detect at the method reporting limit.

UJ = result is non-detect with an estimated method reporting limit.

VOC = volatile organic compound.

[a]Screening levels for gasoline-range hydrocarbons with detectable benzene.

[b]Diesel+Oil is the sum of diesel- and oil-range hydrocarbons.

[c]Total PCBs is the sum of all PCB Aroclors. Non-detect results are not included in the sum.

[d]Reporting limit is unknown.

[e]Total xylenes is the sum of m,p-xylene and o-xylene.

[f]Total naphthalenes is the sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene.

[g]cPAH TEQ calculated as the sum of each cPAH concentration multiplied by the corresponding toxic equivalent factor.

References

[1]Ecology. 2025. *Cleanup Levels and Risk Calculation (CLARC) table.* Washington State Department of Ecology, Toxics Cleanup Program. February.

[2]Ecology. 1994. *Natural Background Soil Metals Concentrations in Washington State.* Publication 94-115. Washington State Department of Ecology. October.

[3]Ecology. 2015. *Implementation Memorandum #10: Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs)* . Publication No. 15-09-049. Washington State Department of Ecology, Toxics Cleanup Program. April 20.

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-1A									SB-2A					
Location Type:			MW									MW					
Sample Name:			--	--	SB-1A-1219	SB-1A-0320	SB-1A-0122	SB-1A-0522	SB-1A-0822	SB-1A-1222	SB-1A-1223	--	--	SB-2A-1219	SB-2A-0320	SB-2A-0122	SB-2A-0522
Collection Date:			04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/24/2022	05/03/2022	08/23/2022	12/06/2022	12/12/2023	04/01/1991	09/21/2000	12/11/2019	03/10/2020	01/25/2022	05/03/2022
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			5	--	--	--	7.5	--	9	8	--	6	--	--	--	8.5	--
TPH (ug/L)																	
Gasoline-range hydrocarbons	1,000[a]	NV	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	--	100 U	100 U	100 U	100 U	100 U
Diesel-range hydrocarbons	500	NV	--	250 U	50 U	50 U	50 U	110	54	50 U	--	--	340	50 U	70	50 U	76
Motor oil-range hydrocarbons	500	NV	--	--	250 U	250 U	250 U	300 U	250 U	250 U	--	--	--	250 U	250 U	250 U	250 U
Diesel+Oil[b]	500	NV	--	--	250 U	250 U	250 U	260	179	250 U	--	--	--	250 U	195	250 U	201
TPH with Silica-Gel Treatment (ug/L)																	
Diesel-range hydrocarbons	500	NV	--	--	50 U	50 U	50 U	60 U	--	--	--	--	--	50 U	50 U	50 U	50 U
Motor oil-range hydrocarbons	500	NV	--	--	250 U	250 U	250 U	300 U	--	--	--	--	--	250 U	250 U	250 U	250 U
Diesel+Oil[b]	500	NV	--	--	250 U	250 U	250 U	300 U	--	--	--	--	--	250 U	250 U	250 U	250 U
EPH (ug/L)																	
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VPH (ug/L)																	
C5-C6 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C6-C8 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C13 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dissolved Metals (ug/L)																	
Aluminum	NV	NV	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Arsenic	5.0	8.0	--	--	1.82	1 U	--	--	--	--	2.13	--	--	3.54	2.09	--	--
Cadmium	5.0	NV	--	--	1 U	1 U	--	--	--	--	--	--	--	1 U	1 U	--	--
Chromium	50	NV	--	--	1 U	5 U	--	--	--	--	--	--	--	1 U	5 U	--	--
Copper	NV	NV	--	--	2.4 U	2.4 U	--	--	--	--	2.4 U	--	--	2.4 U	2.4 U	--	--
Iron	NV	NV	--	--	--	--	--	--	--	--	2,220	--	--	--	--	--	--
Lead	15	NV	--	--	1 U	1 U	--	--	--	--	--	--	--	1 U	1 U	--	--
Manganese	NV	NV	--	--	284	257	--	--	--	--	141	--	--	367	430	--	--
Mercury	2.0	NV	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--
Nickel	NV	NV	--	--	4.74	4.56	--	--	--	--	--	--	--	4.03	3.76	--	--
Selenium	NV	NV	--	--	30 U	1 U	--	--	--	--	--	--	--	30 U	1 U	--	--
Zinc	NV	NV	--	--	5 U	5 U	--	--	--	--	--	--	--	5 U	5 U	--	--
Total Metals (ug/L)																	
Aluminum	NV	NV	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Antimony	NV	NV	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	1 U
Arsenic	5.0	8.0	5	3.87	1.79	1.28	1.37	1.08	2.71	2.27	2.41	48	27.6	3.38	2.27	2.31	2.6
Barium	NV	NV	--	--	--	--	--	3.9	7.12	--	--	--	--	--	--	--	4.44
Beryllium	NV	NV	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	1 U
Cadmium	5.0	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-1A									SB-2A					
Location Type:			MW									MW					
Sample Name:			--	--	SB-1A-1219	SB-1A-0320	SB-1A-0122	SB-1A-0522	SB-1A-0822	SB-1A-1222	SB-1A-1223	--	--	SB-2A-1219	SB-2A-0320	SB-2A-0122	SB-2A-0522
Collection Date:			04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/24/2022	05/03/2022	08/23/2022	12/06/2022	12/12/2023	04/01/1991	09/21/2000	12/11/2019	03/10/2020	01/25/2022	05/03/2022
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			5	--	--	--	7.5	--	9	8	--	6	--	--	--	8.5	--
Total Metals cont. (ug/L)																	
Chromium	50	NV	--	--	1 U	5 U	1 U	1 U	1 U	1 U	--	--	--	1 U	5 U	1 U	1 U
Cobalt	NV	NV	--	--	--	--	--	1 U	1.11	--	--	--	--	--	--	--	1 U
Copper	NV	NV	--	2.41	23.1	2.42	3.23 U	2.85 J+	2.4 U	3.45 J+	2.57 J+	--	22.1	10.3	2.4 U	0.4 U	1 U
Iron	NV	NV	--	--	--	--	--	1,320	3,170	--	2,720	--	--	--	--	--	1,720
Lead	15	NV	6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	5	1 U	1 U	1 U	1 U	1 U
Manganese	NV	NV	--	1,460	213	227	154	169	316	153	147	--	8,140	330	417	359	454
Mercury	2.0	NV	5 U	1 U	0.2 U	0.2 U	0.02 U	0.02 U	0.02 U	0.02 U	--	5 U	1 U	0.2 U	0.2 U	0.02 U	0.02 U
Nickel	NV	NV	--	--	3.63	4.55	4.35	4.19	4.44	2.73	--	--	--	3.22	3.65	4.37	4.91
Selenium	NV	NV	--	--	1 U	1 U	--	1 U	1 U	--	--	--	--	1 U	1 U	--	1 U
Silver	NV	NV	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	1 U
Thallium	NV	NV	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	1 U
Vanadium	NV	NV	--	--	--	--	--	4.07	2.69	--	--	--	--	--	--	--	1.29
Zinc	NV	NV	39	12.4	5 U	5 U	5 U	5 U	5 U	5 U	--	62	59.7	5 U	5 U	5 U	5 U
PCB Aroclors (ug/L)			--	--								--	--				
Aroclor 1016	NV	NV	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.0058 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1221	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0058 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1232	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0058 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1242	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0058 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1248	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0083 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1254	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0083 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1260	NV	NV	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0083 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1262	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0083 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Aroclor 1268	NV	NV	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0083 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Total PCBs[c]	0.10	NV	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0083 UJ	0.0035 UJ	--	--	--	0.1 U	0.1 U	0.0035 UJ	0.0035 U
Permanent Gases (ug/L)																	
Methane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFAS (ug/L)																	
3:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9Cl-PF3ONS (F-53B Major)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11Cl-PF3OUdS (F-53B Minor)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ADONA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HFPO-DA (GenX)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NFDHA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFBS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-1A									SB-2A					
Location Type:			MW									MW					
Sample Name:			--	--	SB-1A-1219	SB-1A-0320	SB-1A-0122	SB-1A-0522	SB-1A-0822	SB-1A-1222	SB-1A-1223	--	--	SB-2A-1219	SB-2A-0320	SB-2A-0122	SB-2A-0522
Collection Date:			04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/24/2022	05/03/2022	08/23/2022	12/06/2022	12/12/2023	04/01/1991	09/21/2000	12/11/2019	03/10/2020	01/25/2022	05/03/2022
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			5	--	--	--	7.5	--	9	8	--	6	--	--	--	8.5	--
PFAS cont. (ug/L)																	
PFDoA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDoS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFEESA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHpA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHpS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHxA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHxS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFMBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFMPA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFNA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFNS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFPeA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFPeS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFTeDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFTrDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFUnA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs by EPA 8021B (ug/L)																	
Benzene	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	20	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (total)[d]	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (ug/L)																	
1,1,1,2-Tetrachloroethane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	NV	NV	--	--	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	1 U	1 U	0.2 U	0.2 U
1,1,2-Trichloroethane	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,1-Dichloroethene	NV	NV	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	NV	NV	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U
1,2-Dibromoethane	0.010	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5.0	NV	--	--	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	1 U	1 U	0.2 U	0.2 U
1,2-Dichloropropane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U

Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-1A									SB-2A					
Location Type:			MW									MW					
Sample Name:			--	--	SB-1A-1219	SB-1A-0320	SB-1A-0122	SB-1A-0522	SB-1A-0822	SB-1A-1222	SB-1A-1223	--	--	SB-2A-1219	SB-2A-0320	SB-2A-0122	SB-2A-0522
Collection Date:			04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/24/2022	05/03/2022	08/23/2022	12/06/2022	12/12/2023	04/01/1991	09/21/2000	12/11/2019	03/10/2020	01/25/2022	05/03/2022
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			5	--	--	--	7.5	--	9	8	--	6	--	--	--	8.5	--
VOCs cont. (ug/L)																	
1,3-Dichloropropane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U
1,4-Dioxane	NV	NV	--	--	0.4 U	0.5 U	--	0.4 U	0.4 U	0.4 U	--	--	--	0.4 U	0.5 U	--	0.4 U
2,2-Dichloropropane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
2-Butanone	NV	NV	--	--	10 U	10 U	20 U	20 U	20 U	20 U	--	--	--	10 U	10 U	20 U	20 U
2-Chlorotoluene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
2-Hexanone	NV	NV	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U
4-Chlorotoluene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
4-Isopropyltoluene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	NV	NV	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U
Acetone	NV	NV	--	--	50 U	50 U	50 U	50 U	50 U	50 U	--	--	--	50 U	50 U	50 U	50 U
Benzene	5.0	NV	--	1 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	--	--	1 U	0.35 U	0.35 U	0.35 U	0.35 U
Bromobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Bromodichloromethane	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
Bromoform	NV	NV	--	--	1 U	1 U	5 U	5 U	5 U	5 U	--	--	--	1 U	1 U	5 U	5 U
Bromomethane	NV	NV	--	--	1 U	1 U	5 U	5 U	5 U	5 U	--	--	--	1 U	1 U	5 U	5 U
Carbon tetrachloride	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
Chlorobenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Chloroethane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Chloroform	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Chloromethane	NV	NV	--	--	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	NV	NV	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	NV	NV	--	--	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	1 U	1 U	0.4 U	0.4 U
Dibromochloromethane	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
Dibromomethane	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon 12)	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Ethylbenzene	700	NV	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U
Isopropylbenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
m,p-Xylene	NV	NV	--	--	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	2 U	2 U	2 U	2 U
Methyl tert-butyl ether	20	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Methylene chloride	5.0	NV	--	--	5 U	5 U	8.6 U	11 UJ	5 U	5 U	--	--	--	5 U	5 U	5.9 U	5 U
Naphthalene	160	NV	--	--	1 U	1 U	1 U	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U
n-Hexane	NV	NV	--	--	1 U	1 U	5 U	5 U	5 U	5 U	--	--	--	1 U	1 U	5 U	5 U
n-Propylbenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
o-Xylene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
sec-Butylbenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Styrene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
tert-Butylbenzene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	5.0	NV	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	NV	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	NV	NV	--	--	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	1 U	1 U	0.4 U	0.4 U
Trichloroethene (TCE)	5.0	NV	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	1 U	1 U	1 U	0.5 U	0.5 U
Trichlorofluoromethane (Freon 11)	NV	NV	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U
Vinyl chloride	0.20	NV	--	1 U	0.2 U	0.1 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	1 U	0.2 U	0.1 U	0.02 U	0.02 U
Xylenes (total)[d]	1,000	NV	--	--	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	2 U	2 U	2 U	2 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-1A									SB-2A					
Location Type:			MW									MW					
Sample Name:			--	--	SB-1A-1219	SB-1A-0320	SB-1A-0122	SB-1A-0522	SB-1A-0822	SB-1A-1222	SB-1A-1223	--	--	SB-2A-1219	SB-2A-0320	SB-2A-0122	SB-2A-0522
Collection Date:			04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/24/2022	05/03/2022	08/23/2022	12/06/2022	12/12/2023	04/01/1991	09/21/2000	12/11/2019	03/10/2020	01/25/2022	05/03/2022
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			5	--	--	--	7.5	--	9	8	--	6	--	--	--	8.5	--
PAHs, Low-Level (ug/L)																	
Acenaphthene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Acenaphthylene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Anthracene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Benzo(a)anthracene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Benzo(a)pyrene	0.20(e)(3)	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Benzo(b)fluoranthene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Benzo(k)fluoranthene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Chrysene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Dibenzo(a,h)anthracene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Fluoranthene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Fluorene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Naphthalene	160	NV	--	--	0.2 U	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Phenanthrene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
Pyrene	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
cPAH TEQ(f)(4)	0.20(e)(3)	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	0.02 U	--	--	--
SVOCs (ug/L)																	
1,2,4-Trichlorobenzene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
1,2-Dichlorobenzene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 UJ	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
1,3-Dichlorobenzene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 UJ	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
1,4-Dichlorobenzene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 UJ	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
2,4,5-Trichlorophenol	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
2,4,6-Trichlorophenol	NV	NV	--	--	2 U	2 U	1 UJ	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
2,4-Dichlorophenol	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
2,4-Dimethylphenol	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
2,4-Dinitrophenol	NV	NV	--	--	6 U	6 U	3 UJ	3 U	3 U	3 U	--	--	--	6 U	6 U	3 U	3 U
2,4-Dinitrotoluene	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
2,6-Dinitrotoluene	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
2-Chloronaphthalene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
2-Chlorophenol	NV	NV	--	--	2 U	2 U	1 R	1 U	1 U	1 U	--	--	--	2 U	2 U	1 R	1 U
2-Methylnaphthalene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
2-Methylphenol	NV	NV	--	--	2 U	2 U	1 R	1 U	1 U	1 U	--	--	--	2 U	2 U	1 R	1 U
2-Nitroaniline	NV	NV	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
2-Nitrophenol	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	--	--	4 U	4 U	2 R	2 U	2 U	2 U	--	--	--	4 U	4 U	2 R	2 U
3-Nitroaniline	NV	NV	--	--	20 U	20 U	10 U	10 U	10 U	10 U	--	--	--	20 U	20 U	10 U	10 U
4,6-Dinitro-2-methylphenol	NV	NV	--	--	6 U	6 U	3 UJ	3 U	3 U	3 U	--	--	--	6 U	6 U	3 U	3 U
4-Bromophenyl phenyl ether	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
4-Chloro-3-methylphenol	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
4-Chloroaniline	NV	NV	--	--	20 U	20 U	10 U	10 U	10 U	10 U	--	--	--	20 U	20 U	10 U	10 U
4-Chlorophenyl phenyl ether	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
4-Nitroaniline	NV	NV	--	--	20 U	20 U	10 U	10 U	10 U	10 U	--	--	--	20 U	20 U	10 U	10 U
4-Nitrophenol	NV	NV	--	--	6 U	6 U	3 R	3 UJ	3 U	3 U	--	--	--	6 U	6 U	3 U	3 U
Acenaphthene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.016	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-1A									SB-2A					
Location Type:			MW									MW					
Sample Name:			--	--	SB-1A-1219	SB-1A-0320	SB-1A-0122	SB-1A-0522	SB-1A-0822	SB-1A-1222	SB-1A-1223	--	--	SB-2A-1219	SB-2A-0320	SB-2A-0122	SB-2A-0522
Collection Date:			04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/24/2022	05/03/2022	08/23/2022	12/06/2022	12/12/2023	04/01/1991	09/21/2000	12/11/2019	03/10/2020	01/25/2022	05/03/2022
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			5	--	--	--	7.5	--	9	8	--	6	--	--	--	8.5	--
SVOCs cont. (ug/L)																	
Acenaphthylene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Anthracene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Benzo(a)anthracene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Benzo(a)pyrene	0.20[e][3]	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Benzo(b)fluoranthene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.018	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Benzo(ghi)perylene	NV	NV	--	--	0.04 U	0.04 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	0.04 U	0.04 U	0.02 U	0.02 U
Benzo(k)fluoranthene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.015	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Benzoic acid	NV	NV	--	--	10 U	10 U	5 R	5 UJ	5 U	5 U	--	--	--	10 U	10 U	5 R	5 UJ
Benzyl alcohol	NV	NV	--	--	2 U	2 U	1 R	1 U	1 U	1 U	--	--	--	2 U	2 U	1 R	1 U
Bis(2-chloro-1-methylethyl) ether	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Bis(2-chloroethoxy)methane	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Bis(2-chloroethyl) ether	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Bis(2-ethylhexyl) phthalate	NV	NV	--	--	3.2 U	3.2 U	1.6 U	1.9 J+	1.6 U	1.6 U	--	--	--	3.2 U	3.2 U	1.6 U	1.8 J+
Butylbenzyl phthalate	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 UJ	--	--	--	2 U	2 U	1 U	1 U
Carbazole	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Chrysene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.016	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Dibenzo(a,h)anthracene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.014	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Dibenzofuran	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Diethyl phthalate	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
Dimethyl phthalate	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 U	--	--	--	2 U	2 U	1 U	1 U
Di-n-butyl phthalate	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 UJ	--	--	--	2 U	2 U	1 U	1 U
Di-n-octyl phthalate	NV	NV	--	--	2 U	2 U	1 U	1 U	1 U	1 UJ	--	--	--	2 U	2 U	1 U	1 U
Fluoranthene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.031	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Fluorene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.02	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Hexachlorobenzene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Hexachlorobutadiene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Hexachlorocyclopentadiene	NV	NV	--	--	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U	0.3 U	--	--	--	0.6 U	0.6 U	0.3 U	0.3 U
Hexachloroethane	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 UJ	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.014	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Isophorone	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Naphthalene	160	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Nitrobenzene	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
N-Nitrosodiphenylamine	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
N-Nitrosodipropylamine	NV	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
Pentachlorophenol	NV	NV	--	--	1 U	1 U	0.5 UJ	0.5 U	0.5 U	0.5 U	--	--	--	1 U	1 U	0.5 U	0.5 U
Phenanthrene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.012 J+	0.058 J+	--	--	--	0.02 U	0.02 U	0.01 U	0.011
Phenol	NV	NV	--	--	2 U	2 U	1 R	1 UJ	1 U	1 U	--	--	--	2 U	2 U	1 R	1 J+
Pyrene	NV	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.037	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U
Naphthalenes, total[h]	160	NV	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U
cPAH TEQ[f][4]	0.20[e][3]	NV	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.023	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U

Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-2A (continued)			SB-3 (deeper)	SB-3A										SRI-16
Location Type:			MW			Unknown	MW										Boring
Sample Name:			SB-2A-0822	SB-2A-1222	SB-2A-1223				SB-3A-1219	SB-3A-0320	SB-3A-0122	SB-9-3A-0122	SB-3A-0522	SB-3A-0822	SB-3A-1222	SB-3A-1223	--
Collection Date:			08/23/2022	12/05/2022	12/12/2023	04/01/1991	04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/25/2022	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	01/18/2002
Sample Type:			N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
Collection Depth (ft bgs):			8.5	9	--	21	6	--	--	--	7.5	7.5	--	9.5	8	--	12
TPH (ug/L)																	
Gasoline-range hydrocarbons	1,000[a]	NV	100	100 U	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	50 U
Diesel-range hydrocarbons	500	NV	110	50 U	--	--	--	640	1,900	950	670	560	990	750	910	--	250 U
Motor oil-range hydrocarbons	500	NV	250 U	250 U	--	--	--	--	1,200	440	380	300	620	520	940	--	500 U
Diesel+Oil[b]	500	NV	235	250 U	--	--	--	--	3,100	1,390	1,050	860	1,610	1,270	1,850	--	500 U
TPH with Silica-Gel Treatment (ug/L)																	
Diesel-range hydrocarbons	500	NV	--	--	--	--	--	--	50 U	50 U	50 U	50 U	50 U	--	--	--	--
Motor oil-range hydrocarbons	500	NV	--	--	--	--	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--
Diesel+Oil[b]	500	NV	--	--	--	--	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--
EPH (ug/L)																	
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VPH (ug/L)																	
C5-C6 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C6-C8 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C13 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dissolved Metals (ug/L)																	
Aluminum	NV	NV	--	--	11.1 J+	--	--	--	--	--	--	--	--	--	--	10 U	--
Arsenic	5.0	8.0	--	--	2.61	--	--	--	2.84	1.88	--	--	--	--	--	1.89	--
Cadmium	5.0	NV	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--
Chromium	50	NV	--	--	--	--	--	--	1 U	5 U	--	--	--	--	--	--	--
Copper	NV	NV	--	--	2.4 U	--	--	--	2.4 U	2.4 U	--	--	--	--	--	2.4 U	--
Iron	NV	NV	--	--	1,770	--	--	--	--	--	--	--	--	--	--	2,600	--
Lead	15	NV	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--
Manganese	NV	NV	--	--	510	--	--	--	194	268	--	--	--	--	--	118	--
Mercury	2.0	NV	--	--	--	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--	--
Nickel	NV	NV	--	--	--	--	--	--	3.28	2.79	--	--	--	--	--	--	--
Selenium	NV	NV	--	--	--	--	--	--	30 U	5.48	--	--	--	--	--	--	--
Zinc	NV	NV	--	--	--	--	--	--	5 U	5 U	--	--	--	--	--	--	--
Total Metals (ug/L)																	
Aluminum	NV	NV	--	--	49.9 J+	--	--	--	--	--	--	--	--	--	--	10 U	--
Antimony	NV	NV	1 U	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--
Arsenic	5.0	8.0	5.62	2.31	2.47	5 U	6	2.14	2.19	1.8	1.54	1.51	1.16	1.23	1.24	1.8	6.72
Barium	NV	NV	5.18	--	--	--	--	--	--	--	--	--	25.9	20.5	--	--	--
Beryllium	NV	NV	1 U	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--
Cadmium	5.0	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SB-2A (continued)			SB-3 (deeper)	SB-3A										SRI-16
Location Type:			MW			Unknown	MW										Boring
Sample Name:			SB-2A-0822	SB-2A-1222	SB-2A-1223				SB-3A-1219	SB-3A-0320	SB-3A-0122	SB-9-3A-0122	SB-3A-0522	SB-3A-0822	SB-3A-1222	SB-3A-1223	--
Collection Date:			08/23/2022	12/05/2022	12/12/2023	04/01/1991	04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/25/2022	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	01/18/2002
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
Collection Depth (ft bgs):		Basin	8.5	9	--	21	6	--	--	--	7.5	7.5	--	9.5	8	--	12
Total Metals cont. (ug/L)																	
Chromium	50	NV	1 U	1 U	--	--	--	--	1 U	5 U	1 U	1 U	1 U	1 U	1 U	--	--
Cobalt	NV	NV	1 U	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--
Copper	NV	NV	2.4 U	1 U	2.4 U	--	--	6.58	3.28	2.4 U	0.4 U	0.4 U	1 U	2.4 U	1 U	2.4 U	48 J
Iron	NV	NV	1,340	--	2,060	--	--	--	--	--	--	--	3,810	3,190	--	2,940	--
Lead	15	NV	1 U	1 U	--	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	7.77
Manganese	NV	NV	425	552	528	--	--	20	173	264	206	205	241	201	167	121	1,790
Mercury	2.0	NV	0.02 U	0.02 U	--	5 U	5 U	1 U	0.2 U	0.2 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	1 U
Nickel	NV	NV	4.11	2.53	--	--	--	--	2.65	2.95	2.86	2.88	3.55	2.23	1.98	--	--
Selenium	NV	NV	1 U	--	--	--	--	--	7.17	5.19	--	--	3.97	3.41	--	--	--
Silver	NV	NV	1 U	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--
Thallium	NV	NV	1 U	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--
Vanadium	NV	NV	1.07	--	--	--	--	--	--	--	--	--	1.97	2.16	--	--	--
Zinc	NV	NV	5 U	5 U	--	38	63	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	48.7
PCB Aroclors (ug/L)						--	--	--									--
Aroclor 1016	NV	NV	0.005 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.005 UJ	0.0035 UJ	--	--
Aroclor 1221	NV	NV	0.005 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.005 UJ	0.0035 UJ	--	--
Aroclor 1232	NV	NV	0.005 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.005 UJ	0.0035 UJ	--	--
Aroclor 1242	NV	NV	0.005 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.005 UJ	0.0035 UJ	--	--
Aroclor 1248	NV	NV	0.007 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.007 UJ	0.0035 UJ	--	--
Aroclor 1254	NV	NV	0.007 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.007 UJ	0.0035 UJ	--	--
Aroclor 1260	NV	NV	0.007 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.007 UJ	0.0035 UJ	--	--
Aroclor 1262	NV	NV	0.007 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.007 UJ	0.0035 UJ	--	--
Aroclor 1268	NV	NV	0.007 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.007 UJ	0.0035 UJ	--	--
Total PCBs[c]	0.10	NV	0.007 UJ	0.0035 UJ	--	--	--	--	0.1 U	0.1 U	0.0035 U	0.0035 U	0.0035 U	0.007 UJ	0.0035 UJ	--	--
Permanent Gases (ug/L)																	
Methane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFAS (ug/L)																	
3:3 FTCA	NV	NV	--	--	0.01 U	--	--	--	--	--	--	--	--	--	--	--	--
4:2 FTSA	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
5:3 FTCA	NV	NV	--	--	0.051 U	--	--	--	--	--	--	--	--	--	--	--	--
6:2 FTSA	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
7:3 FTCA	NV	NV	--	--	0.051 U	--	--	--	--	--	--	--	--	--	--	--	--
8:2 FTSA	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
9Cl-PF3ONS (F-53B Major)	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
11Cl-PF3OUdS (F-53B Minor)	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
ADONA	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSAA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSE	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--
HFPO-DA (GenX)	NV	NV	--	--	0.0081 U	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSAA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSE	NV	NV	--	--	0.02 U	--	--	--	--	--	--	--	--	--	--	--	--
NFDHA	NV	NV	--	--	0.0041 U	--	--	--	--	--	--	--	--	--	--	--	--
PFBA	NV	NV	--	--	0.023	--	--	--	--	--	--	--	--	--	--	--	--
PFBS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFDA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--

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Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-2A (continued)			SB-3 (deeper)	SB-3A										SRI-16
Location Type:			MW			Unknown	MW										Boring
Sample Name:			SB-2A-0822	SB-2A-1222	SB-2A-1223				SB-3A-1219	SB-3A-0320	SB-3A-0122	SB-9-3A-0122	SB-3A-0522	SB-3A-0822	SB-3A-1222	SB-3A-1223	--
Collection Date:			08/23/2022	12/05/2022	12/12/2023	04/01/1991	04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/25/2022	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	01/18/2002
Sample Type:			N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
Collection Depth (ft bgs):			8.5	9	--	21	6	--	--	--	7.5	7.5	--	9.5	8	--	12
PFAS cont. (ug/L)																	
PFDoA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFDoS	NV	NV	--	--	0.002 UJ	--	--	--	--	--	--	--	--	--	--	--	--
PFDS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFEESA	NV	NV	--	--	0.0041 U	--	--	--	--	--	--	--	--	--	--	--	--
PFHpA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFHpS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFHxA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFHxS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFMBA	NV	NV	--	--	0.0041 U	--	--	--	--	--	--	--	--	--	--	--	--
PFMPA	NV	NV	--	--	0.0041 U	--	--	--	--	--	--	--	--	--	--	--	--
PFNA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFNS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFOA	NV	NV	--	--	0.0041	--	--	--	--	--	--	--	--	--	--	--	--
PFOS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFOSA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFPeA	NV	NV	--	--	0.0041 U	--	--	--	--	--	--	--	--	--	--	--	--
PFPeS	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFTeDA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFTrDA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
PFUnA	NV	NV	--	--	0.002 U	--	--	--	--	--	--	--	--	--	--	--	--
VOCs by EPA 8021B (ug/L)																	
Benzene	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	20	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (total)[d]	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (ug/L)																	
1,1,1,2-Tetrachloroethane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,1,1-Trichloroethane	200	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,1,2,2-Tetrachloroethane	NV	NV	0.2 U	0.2 U	--	--	--	--	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--
1,1,2-Trichloroethane	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
1,1-Dichloroethane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,1-Dichloroethene	NV	NV	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U
1,1-Dichloropropene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2,3-Trichlorobenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2,3-Trichloropropane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2,4-Trichlorobenzene	NV	NV	1 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--
1,2,4-Trimethylbenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2-Dibromo-3-chloropropane	NV	NV	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--
1,2-Dibromoethane	0.010	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2-Dichlorobenzene	NV	NV	1 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--
1,2-Dichloroethane	5.0	NV	0.2 U	0.2 U	--	--	--	--	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--
1,2-Dichloropropane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,3,5-Trimethylbenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,3-Dichlorobenzene	NV	NV	1 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SB-2A (continued)			SB-3 (deeper)	SB-3A										SRI-16
Location Type:			MW			Unknown	MW										Boring
Sample Name:			SB-2A-0822	SB-2A-1222	SB-2A-1223				SB-3A-1219	SB-3A-0320	SB-3A-0122	SB-9-3A-0122	SB-3A-0522	SB-3A-0822	SB-3A-1222	SB-3A-1223	--
Collection Date:			08/23/2022	12/05/2022	12/12/2023	04/01/1991	04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/25/2022	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	01/18/2002
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
Collection Depth (ft bgs):		Basin	8.5	9	--	21	6	--	--	--	7.5	7.5	--	9.5	8	--	12
VOCs cont. (ug/L)																	
1,3-Dichloropropane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,4-Dichlorobenzene	NV	NV	1 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--
1,4-Dioxane	NV	NV	0.4 U	0.4 U	--	--	--	--	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--
2,2-Dichloropropane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
2-Butanone	NV	NV	20 U	20 U	--	--	--	--	10 U	10 U	20 U	20 U	20 U	20 U	20 U	--	--
2-Chlorotoluene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
2-Hexanone	NV	NV	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--
4-Chlorotoluene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
4-Isopropyltoluene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
4-Methyl-2-pentanone	NV	NV	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--
Acetone	NV	NV	50 U	50 U	--	--	--	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	--	--
Benzene	5.0	NV	0.35 U	0.35 U	--	--	--	1 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	--	0.5 U
Bromobenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Bromodichloromethane	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
Bromoform	NV	NV	5 U	5 U	--	--	--	--	1 U	1 U	5 U	5 U	5 U	5 U	5 U	--	--
Bromomethane	NV	NV	5 U	5 U	--	--	--	--	1 U	1 U	5 U	5 U	5 U	5 U	5 U	--	--
Carbon tetrachloride	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
Chlorobenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Chloroethane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Chloroform	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Chloromethane	NV	NV	10 U	10 U	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--
cis-1,2-Dichloroethene	NV	NV	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U
cis-1,3-Dichloropropene	NV	NV	0.4 U	0.4 U	--	--	--	--	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--
Dibromochloromethane	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
Dibromomethane	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Dichlorodifluoromethane (Freon 12)	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Ethylbenzene	700	NV	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U
Hexachlorobutadiene	NV	NV	0.5 U	--	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--	--
Isopropylbenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
m,p-Xylene	NV	NV	2 U	2 U	--	--	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--
Methyl tert-butyl ether	20	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Methylene chloride	5.0	NV	5 U	5 U	--	--	--	--	5 U	5 U	8.5 U	8.7 U	5 U	5 U	5 U	--	--
Naphthalene	160	NV	1 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--
n-Hexane	NV	NV	5 U	5 U	--	--	--	--	1 U	1 U	5 U	5 U	5 U	5 U	5 U	--	--
n-Propylbenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
o-Xylene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
sec-Butylbenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Styrene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
tert-Butylbenzene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Tetrachloroethene (PCE)	5.0	NV	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U
Toluene	1,000	NV	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U
trans-1,2-Dichloroethene	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
trans-1,3-Dichloropropene	NV	NV	0.4 U	0.4 U	--	--	--	--	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--
Trichloroethene (TCE)	5.0	NV	0.5 U	0.5 U	--	--	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U
Trichlorofluoromethane (Freon 11)	NV	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
Vinyl chloride	0.20	NV	0.02 U	0.02 U	--	--	--	1 U	0.2 U	0.1 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	1 U
Xylenes (total)[d]	1,000	NV	2 U	2 U	--	--	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SB-2A (continued)			SB-3 (deeper)	SB-3A										SRI-16
Location Type:			MW			Unknown	MW										Boring
Sample Name:			SB-2A-0822	SB-2A-1222	SB-2A-1223				SB-3A-1219	SB-3A-0320	SB-3A-0122	SB-9-3A-0122	SB-3A-0522	SB-3A-0822	SB-3A-1222	SB-3A-1223	--
Collection Date:			08/23/2022	12/05/2022	12/12/2023	04/01/1991	04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/25/2022	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	01/18/2002
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
Collection Depth (ft bgs):		Basin	8.5	9	--	21	6	--	--	--	7.5	7.5	--	9.5	8	--	12
PAHs, Low-Level (ug/L)																	
Acenaphthene	NV	NV	--	--	--	--	--	--	0.059	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Anthracene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Benzo(a)anthracene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.20[e][3]	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Chrysene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Fluoranthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Fluorene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Naphthalene	160	NV	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
Pyrene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
cPAH TEQ[f][4]	0.20[e][3]	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--
SVOCs (ug/L)																	
1,2,4-Trichlorobenzene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
1,2-Dichlorobenzene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
1,3-Dichlorobenzene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
1,4-Dichlorobenzene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND[g]
1-Methylnaphthalene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
2,4,5-Trichlorophenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
2,4,6-Trichlorophenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
2,4-Dichlorophenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
2,4-Dimethylphenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
2,4-Dinitrophenol	NV	NV	3 U	3 U	--	--	--	--	6 U	6 U	3 U	3 U	3 U	3 U	3 U	--	--
2,4-Dinitrotoluene	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
2,6-Dinitrotoluene	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
2-Chloronaphthalene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
2-Chlorophenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 R	1 R	1 U	1 U	1 U	--	--
2-Methylnaphthalene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
2-Methylphenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 R	1 R	1 U	1 U	1 U	--	--
2-Nitroaniline	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
2-Nitrophenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	2 U	2 U	--	--	--	--	4 U	4 U	2 R	2 R	2 U	2 U	2 U	--	--
3-Nitroaniline	NV	NV	10 U	10 U	--	--	--	--	20 U	20 U	10 U	10 U	10 U	10 U	10 U	--	--
4,6-Dinitro-2-methylphenol	NV	NV	3 U	3 U	--	--	--	--	6 U	6 U	3 U	3 U	3 U	3 U	3 U	--	--
4-Bromophenyl phenyl ether	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
4-Chloro-3-methylphenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
4-Chloroaniline	NV	NV	10 U	10 U	--	--	--	--	20 U	20 U	10 U	10 U	10 U	10 U	10 U	--	--
4-Chlorophenyl phenyl ether	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
4-Nitroaniline	NV	NV	10 U	10 U	--	--	--	--	20 U	20 U	10 U	10 U	10 U	10 U	10 U	--	--
4-Nitrophenol	NV	NV	3 U	3 U	--	--	--	--	6 U	6 U	3 U	3 U	3 U	3 U	3 U	--	--
Acenaphthene	NV	NV	0.01 U	0.01 U	--	--	--	--	0.072	0.074	0.068	0.064	0.058	0.047	0.014	--	--

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Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SB-2A (continued)			SB-3 (deeper)	SB-3A										SRI-16
Location Type:			MW			Unknown	MW										Boring
Sample Name:			SB-2A-0822	SB-2A-1222	SB-2A-1223				SB-3A-1219	SB-3A-0320	SB-3A-0122	SB-9-3A-0122	SB-3A-0522	SB-3A-0822	SB-3A-1222	SB-3A-1223	--
Collection Date:			08/23/2022	12/05/2022	12/12/2023	04/01/1991	04/01/1991	09/21/2000	12/11/2019	03/09/2020	01/25/2022	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	01/18/2002
Sample Type:			N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
Collection Depth (ft bgs):			8.5	9	--	21	6	--	--	--	7.5	7.5	--	9.5	8	--	12
SVOCs cont. (ug/L)																	
Acenaphthylene	NV	NV	0.01 U	0.014	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--
Anthracene	NV	NV	0.01 U	0.01 U	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.031	0.032	0.01 U	--	--
Benzo(a)anthracene	NV	NV	0.01 U	0.01 U	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--
Benzo(a)pyrene	0.20[e][3]	NV	0.01 U	0.01 U	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--
Benzo(b)fluoranthene	NV	NV	0.01 U	0.011	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.017	--	--
Benzo(ghi)perylene	NV	NV	0.02 U	0.02 U	--	--	--	--	0.04 U	0.04 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--
Benzo(k)fluoranthene	NV	NV	0.01 U	0.011	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.018	--	--
Benzoic acid	NV	NV	5 U	5 U	--	--	--	--	10 U	10 U	5 R	5 R	5 UJ	5 U	5 U	--	--
Benzyl alcohol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 R	1 R	1 U	1 U	1 U	--	--
Bis(2-chloro-1-methylethyl) ether	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Bis(2-chloroethoxy)methane	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Bis(2-chloroethyl) ether	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Bis(2-ethylhexyl) phthalate	NV	NV	1.6 J+	1.6 U	--	--	--	--	3.2 U	3.2 U	1.6 U	1.6 U	3.1 J+	1.6 U	1.6 U	--	--
Butylbenzyl phthalate	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
Carbazole	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Chrysene	NV	NV	0.01 U	0.01 U	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011	--	--
Dibenzo(a,h)anthracene	NV	NV	0.01 U	0.011	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.015	--	--
Dibenzofuran	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Diethyl phthalate	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
Dimethyl phthalate	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
Di-n-butyl phthalate	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1.6 J	1 U	1 U	--	--
Di-n-octyl phthalate	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 U	1 U	1 U	1 U	1 U	--	--
Fluoranthene	NV	NV	0.01 U	0.01 U	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01	0.01 U	0.01 U	--	--
Fluorene	NV	NV	0.01 U	0.01 U	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--
Hexachlorobenzene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Hexachlorobutadiene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Hexachlorocyclopentadiene	NV	NV	0.3 U	0.3 U	--	--	--	--	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	--	--
Hexachloroethane	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	0.01 U	0.011	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.016	--	--
Isophorone	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Naphthalene	160	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Nitrobenzene	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
N-Nitrosodiphenylamine	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
N-Nitrosodipropylamine	NV	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
Pentachlorophenol	NV	NV	0.5 U	0.5 U	--	--	--	--	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	--
Phenanthrene	NV	NV	0.01 U	0.012 J+	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.028	0.012 J+	0.012 J+	--	--
Phenol	NV	NV	1 U	1 U	--	--	--	--	2 U	2 U	1 R	1 R	1 U	1 U	1 U	--	--
Pyrene	NV	NV	0.01 U	0.01	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01	0.01 U	0.01 U	--	--
Naphthalenes, total[h]	160	NV	0.1 U	0.1 U	--	--	--	--	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--
cPAH TEQ[f][4]	0.20[e][3]	NV	0.01 U	0.019	--	--	--	--	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.024	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SRI-16D	SRI-17	SRI-17D	SRI-18	SRI-18D	SRI-19	SRI-19D	SRI-32	SRI-32D	SRI-33	SRI-33D	SRI-34	SRI-34D	TWA-SB-1	TWA-SB-2
Location Type:			Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
Sample Name:			--	--	--	--	--	--	--	--	--	--	--	--	--	SB-1-0919	SB-2-0919
Collection Date:			01/18/2002	01/16/2002	01/16/2002	01/16/2002	01/17/2002	01/17/2002	01/17/2002	02/03/2002	02/03/2002	02/02/2002	02/02/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	27	9	24	8	21	36	34.5	9	26	9	23	9	24	--	
TPH (ug/L)																	
Gasoline-range hydrocarbons	1,000[a]	NV	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U
Diesel-range hydrocarbons	500	NV	479	250 U	608	479	2,340	2,030	250 U	419	436	473	2,090	281 U	678	230	180
Motor oil-range hydrocarbons	500	NV	500 U	500 U	500 U	500 U	795	610	500 U	500 U	500 U	500 U	1,200	50,062 U	500 U	500 U	330 U
Diesel+Oil[b]	500	NV	729	500 U	858	729	3,135	2,640	500 U	669	686	723	3,290	50,062 U	928	480	345
TPH with Silica-Gel Treatment (ug/L)																	
Diesel-range hydrocarbons	500	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil-range hydrocarbons	500	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel+Oil[b]	500	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EPH (ug/L)																	
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VPH (ug/L)																	
C5-C6 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C6-C8 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C13 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dissolved Metals (ug/L)																	
Aluminum	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5.0	8.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.49
Cadmium	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
Chromium	50	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.63
Copper	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4 U
Iron	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	15	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
Manganese	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	635
Mercury	2.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U
Nickel	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.47
Selenium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.76
Zinc	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25 U
Total Metals (ug/L)																	
Aluminum	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5.0	8.0	2.68	5.66	11	2.9	9.6	7.01	7.06	9.47	12	4.44	6.61	6.31	10.1	4.95	2.18
Barium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U

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Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SRI-16D	SRI-17	SRI-17D	SRI-18	SRI-18D	SRI-19	SRI-19D	SRI-32	SRI-32D	SRI-33	SRI-33D	SRI-34	SRI-34D	TWA-SB-1	TWA-SB-2
Location Type:			Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
Sample Name:			--	--	--	--	--	--	--	--	--	--	--	--	--	SB-1-0919	SB-2-0919
Collection Date:			01/18/2002	01/16/2002	01/16/2002	01/16/2002	01/17/2002	01/17/2002	01/17/2002	02/03/2002	02/03/2002	02/02/2002	02/02/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	27	9	24	8	21	36	34.5	9	26	9	23	9	24	--	
Total Metals cont. (ug/L)																	
Chromium	50	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	4.33	4.94
Cobalt	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	NV	NV	5.44 J	29	49.3	12	61.5 J	33.6 J	13.6 J	38.6	41.8	18	47.7	20.4	56	6.8	3.81
Iron	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	15	NV	1.37	10.4	10.3	2.16	12.5	7.83	2.03	17.4	8.08	3.68	8.06	10.9	13	3.59	1 U
Manganese	NV	NV	155	1,920	1,350	953	1,180	1,970	94.4	2,480	430	2,280	198	776	683	2,990	665
Mercury	2.0	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.01 U	1.02 U	1.03 U	0.2 U	0.2 U
Nickel	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	7.15	5.48
Selenium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3	1.41
Silver	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	NV	NV	11.2	53.8	86.1	19.2	97.2	51.2	22.4	56.4	44.6	44	38.9	26.4	53.4	11.1	6.01
PCB Aroclors (ug/L)			--	--	--	--	--	--	--	--	--	--	--	--	--		
Aroclor 1016	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1221	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1232	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1242	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1248	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1254	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1260	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1262	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Aroclor 1268	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Total PCBs[c]	0.10	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U
Permanent Gases (ug/L)																	
Methane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	8.63 U	1,210
PFAS (ug/L)																	
3:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9Cl-PF3ONS (F-53B Major)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11Cl-PF3OUdS (F-53B Minor)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ADONA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HFPO-DA (GenX)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NFDHA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFBS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SRI-16D	SRI-17	SRI-17D	SRI-18	SRI-18D	SRI-19	SRI-19D	SRI-32	SRI-32D	SRI-33	SRI-33D	SRI-34	SRI-34D	TWA-SB-1	TWA-SB-2
Location Type:			Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
Sample Name:			--	--	--	--	--	--	--	--	--	--	--	--	--	SB-1-0919	SB-2-0919
Collection Date:			01/18/2002	01/16/2002	01/16/2002	01/16/2002	01/17/2002	01/17/2002	01/17/2002	02/03/2002	02/03/2002	02/02/2002	02/02/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	27	9	24	8	21	36	34.5	9	26	9	23	9	24	--	
PFAS cont. (ug/L)																	
PFDoA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDoS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFEESA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHpA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHpS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHxA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHxS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFMBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFMPA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFNA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFNS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFPeA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFPeS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFTeDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFTrDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFUnA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs by EPA 8021B (ug/L)																	
Benzene	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	20	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (total)[d]	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (ug/L)																	
1,1,1,2-Tetrachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,1,1-Trichloroethane	200	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,1,2,2-Tetrachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,1,2-Trichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,1-Dichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,1-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2,3-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2,3-Trichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2,4-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2,4-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2-Dibromo-3-chloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U
1,2-Dibromoethane	0.010	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2-Dichloroethane	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,3,5-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U

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Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SRI-16D	SRI-17	SRI-17D	SRI-18	SRI-18D	SRI-19	SRI-19D	SRI-32	SRI-32D	SRI-33	SRI-33D	SRI-34	SRI-34D	TWA-SB-1	TWA-SB-2
Location Type:			Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
Sample Name:			--	--	--	--	--	--	--	--	--	--	--	--	--	SB-1-0919	SB-2-0919
Collection Date:			01/18/2002	01/16/2002	01/16/2002	01/16/2002	01/17/2002	01/17/2002	01/17/2002	02/03/2002	02/03/2002	02/02/2002	02/02/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Type:		Puget Sound Basin	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			27	9	24	8	21	36	34.5	9	26	9	23	9	24	--	
VOCs cont. (ug/L)																	
1,3-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
2-Butanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U
2-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
2-Hexanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U
4-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
4-Isopropyltoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
4-Methyl-2-pentanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U
Acetone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	320	50 U
Benzene	5.0	NV	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	0.5 U	0.35 U	0.35 U
Bromobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Bromodichloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Bromoform	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Bromomethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Carbon tetrachloride	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Chlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Chloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Chloroform	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Chloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U
cis-1,2-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Dibromochloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Dibromomethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Dichlorodifluoromethane (Freon 12)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Ethylbenzene	700	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Isopropylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U
Methyl tert-butyl ether	20	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Methylene chloride	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2	5 U
Naphthalene	160	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
n-Hexane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
n-Propylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
sec-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Styrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
tert-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Tetrachloroethene (PCE)	5.0	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
trans-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Trichloroethene (TCE)	5.0	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane (Freon 11)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U
Vinyl chloride	0.20	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U
Xylenes (total)[d]	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	SRI-16D	SRI-17	SRI-17D	SRI-18	SRI-18D	SRI-19	SRI-19D	SRI-32	SRI-32D	SRI-33	SRI-33D	SRI-34	SRI-34D	TWA-SB-1	TWA-SB-2
Location Type:			Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
Sample Name:			--	--	--	--	--	--	--	--	--	--	--	--	--	SB-1-0919	SB-2-0919
Collection Date:			01/18/2002	01/16/2002	01/16/2002	01/16/2002	01/17/2002	01/17/2002	01/17/2002	02/03/2002	02/03/2002	02/02/2002	02/02/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Type:			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			27	9	24	8	21	36	34.5	9	26	9	23	9	24	--	
PAHs, Low-Level (ug/L)																	
Acenaphthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.20[e][3]	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	160	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cPAH TEQ[f][4]	0.20[e][3]	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/L)																	
1,2,4-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
1,2-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
1,4-Dioxane	NV	NV	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	ND[g]	--	--
1-Methylnaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.22
2,4,5-Trichlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
2,4,6-Trichlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
2,4-Dichlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
2,4-Dimethylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
2,4-Dinitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	9 UJ	6 UJ
2,4-Dinitrotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1 U
2,6-Dinitrotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1 U
2-Chloronaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
2-Chlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
2-Methylnaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
2-Methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
2-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1 U
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	6 U	4 U
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	30 U	20 U
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	9 U	6 U
4-Bromophenyl phenyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
4-Chloroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	30 U	20 U
4-Chlorophenyl phenyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	30 U	20 U
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	9 U	6 U
Acenaphthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	9.1

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	SRI-16D	SRI-17	SRI-17D	SRI-18	SRI-18D	SRI-19	SRI-19D	SRI-32	SRI-32D	SRI-33	SRI-33D	SRI-34	SRI-34D	TWA-SB-1	TWA-SB-2
Location Type:			Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring	Boring
Sample Name:			--	--	--	--	--	--	--	--	--	--	--	--	--	SB-1-0919	SB-2-0919
Collection Date:			01/18/2002	01/16/2002	01/16/2002	01/16/2002	01/17/2002	01/17/2002	01/17/2002	02/03/2002	02/03/2002	02/02/2002	02/02/2002	02/02/2002	02/02/2002	09/24/2019	09/24/2019
Sample Type:		Puget Sound Basin	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Collection Depth (ft bgs):			27	9	24	8	21	36	34.5	9	26	9	23	9	24	--	
SVOCs cont. (ug/L)																	
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.029
Anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Benzo(a)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Benzo(a)pyrene	0.20[e][3]	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Benzo(b)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06 U	0.04 U
Benzo(k)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Benzoic acid	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	15 UJ	10 UJ
Benzyl alcohol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Bis(2-chloro-1-methylethyl) ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Bis(2-chloroethyl) ether	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Bis(2-ethylhexyl) phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 U	3.2 U
Butylbenzyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Carbazole	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Chrysene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Dibenzo(a,h)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Dibenzofuran	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Diethyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Di-n-butyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Di-n-octyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.068
Fluorene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.052
Hexachlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Hexachlorobutadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Hexachlorocyclopentadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.9 U	0.6 U
Hexachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Isophorone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Naphthalene	160	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Nitrobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
N-Nitrosodiphenylamine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
N-Nitrosodipropylamine	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.2 U
Pentachlorophenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5 U	1 U
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U
Phenol	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	3 U	2 U
Pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.16
Naphthalenes, total[h]	160	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 U	0.42
cPAH TEQ[f][4]	0.20[e][3]	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03 U	0.02 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-SB-3	TWA-SB-4	TWA-5				TWA-5D								TWA-6	
Location Type:			Boring	Boring	Boring				MW								Boring	
Sample Name:			SB-3-0919	SB-4-0919	TWA-5-1	TWA-5-2	TWA-5-3	TWA-5-3	TWA-5	TWA-5-0320	SB-105-0320	TWA-5-0122	TWA-5D-0522	TWA-5D-0822	TWA-5D-1222	TWA-5D-1223	TWA-6-1	TWA-6-2
Collection Date:			09/24/2019	09/24/2019	09/24/2019	09/25/2019	09/25/2019	09/26/2019	12/10/2019	03/09/2020	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	09/26/2019	09/26/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	--	--	25	35	45	45	--	--	--	27.5	--	27.5	28	--	15	25
TPH (ug/L)																		
Gasoline-range hydrocarbons	1,000[a]	NV	100 U	100 U	100 U	100 U	100 U	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	100 U	100 U
Diesel-range hydrocarbons	500	NV	6,800	300	410	400	560	--	500	610	680	4,900	700	570	1,000	--	97	380
Motor oil-range hydrocarbons	500	NV	1,800	330 U	330 U	300 U	300 U	--	430	360	350	3,500	480	300	1,100	--	250 U	250 U
Diesel+Oil[b]	500	NV	8,600	465	575	550	710	--	930	970	1,030	8,400	1,180	870	2,100	--	222	505
TPH with Silica-Gel Treatment (ug/L)																		
Diesel-range hydrocarbons	500	NV	70 U	--	--	--	--	--	50 U	50 U	50 U	50 U	50 U	--	--	--	--	--
Motor oil-range hydrocarbons	500	NV	330 U	--	--	--	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--	--
Diesel+Oil[b]	500	NV	330 U	--	--	--	--	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--	--
EPH (ug/L)																		
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	78.5 UJ	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C12-C16 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C16-C21 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C21-C34 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	78.5 UJ	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C12-C16 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C16-C21 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
C21-C34 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	39.3 UJ	--	--	--
VPH (ug/L)																		
C5-C6 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
C6-C8 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
C12-C13 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--	--
Dissolved Metals (ug/L)																		
Aluminum	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	11.4 J+	--	--
Arsenic	5.0	8.0	1.94	1.07	--	--	--	--	9.08	7.1	7.04	--	--	--	--	5.26	--	--
Cadmium	5.0	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	--	--	--	--	--	--	--
Chromium	50	NV	1.43	1 U	--	--	--	--	8.39	7.57	6.99 J	--	--	--	--	--	--	--
Copper	NV	NV	2.4 U	2.4 U	--	--	--	--	7.6	2.4 U	2.4 U	--	--	--	--	2.4 U	--	--
Iron	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	1,780	--	--
Lead	15	NV	1 U	1 U	--	--	--	--	1 U	1 U	1 U	--	--	--	--	--	--	--
Manganese	NV	NV	832	631	--	--	--	--	262	180	173	--	--	--	--	181	--	--
Mercury	2.0	NV	0.2 U	0.2 U	--	--	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--	--	--	--
Nickel	NV	NV	9.44	5.12	--	--	--	--	4.24	1.71	1.81 J	--	--	--	--	--	--	--
Selenium	NV	NV	3.36	1.95	--	--	--	--	30 U	17.9	16.9	--	--	--	--	--	--	--
Zinc	NV	NV	25 U	25 U	--	--	--	--	5 U	5 U	5 U	--	--	--	--	--	--	--
Total Metals (ug/L)																		
Aluminum	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	19.7 J+	--	--
Antimony	NV	NV	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	--	--
Arsenic	5.0	8.0	1.77	5.66	53.9	25.4	14.9	--	6.97	7.22	6.84	6.77	10 U	5.66	6.27	5.16	6.39	20.7
Barium	NV	NV	--	--	--	--	--	--	--	--	--	--	20.9	20.3	--	--	--	--
Beryllium	NV	NV	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	--	--
Cadmium	5.0	NV	1 U	1 U	10 U	1 U	10 U	--	2 U	1 U	1 U	10 U	10 U	1 U	1 U	--	1 U	1 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-SB-3	TWA-SB-4	TWA-5				TWA-5D								TWA-6	
Location Type:			Boring	Boring	Boring				MW								Boring	
Sample Name:			SB-3-0919	SB-4-0919	TWA-5-1	TWA-5-2	TWA-5-3	TWA-5-3	TWA-5	TWA-5-0320	SB-105-0320	TWA-5-0122	TWA-5D-0522	TWA-5D-0822	TWA-5D-1222	TWA-5D-1223	TWA-6-1	TWA-6-2
Collection Date:			09/24/2019	09/24/2019	09/24/2019	09/25/2019	09/25/2019	09/26/2019	12/10/2019	03/09/2020	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	09/26/2019	09/26/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	--	--	25	35	45	45	--	--	--	27.5	--	27.5	28	--	15	25
Total Metals cont. (ug/L)																		
Chromium	50	NV	3	15.6	137	54.4	14.6	--	8.23	7.17	7.06	6.46	10 U	5.98 J+	6.02 J+	--	37.6	89.1
Cobalt	NV	NV	--	--	--	--	--	--	--	--	--	--	10 U	1.35	--	--	--	--
Copper	NV	NV	3.78 J	22	368	61.6	50 U	--	35.4	2.4 U	2.4 U	1.08 U	10 U	2.4 U	2.82 J+	2.4 U	50 U	118
Iron	NV	NV	--	--	--	--	--	--	--	--	--	--	1,560	1,650	--	2,010	--	--
Lead	15	NV	1 U	4.31	114	8.09	1.32	--	2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	4.68	15
Manganese	NV	NV	892	614	1,640	252	76.2	--	259	175	175	170	152	179	176	182	716	1,480
Mercury	2.0	NV	0.2 U	0.2 U	2 U	1 U	1 U	--	0.2 U	0.2 U	0.2 U	0.02 U	0.02 U	0.02 U	0.02 U	--	1 U	1 U
Nickel	NV	NV	8.85	17.7	123	50 U	50 U	--	2 U	5 U	5 U	1.59	10 U	2.04	1.83	--	50 U	50
Selenium	NV	NV	2.33	1.44	14.9	21.3	--	35.3	15.8	18.1	16.9	--	17.4	9.8	--	--	10 U	21.6
Silver	NV	NV	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	--	--
Thallium	NV	NV	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--
Vanadium	NV	NV	--	--	--	--	--	--	--	--	--	--	18.2	17.6	--	--	--	--
Zinc	NV	NV	7.53	26.2	488	76.6	50 U	--	10 U	5 U	5 U	5 U	50 U	5 U	5 U	--	50 U	105
PCB Aroclors (ug/L)																		
Aroclor 1016	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.005 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1221	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.005 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1232	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.005 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1242	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.005 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1248	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0071 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1254	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0071 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1260	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0071 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1262	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0071 UJ	0.0035 UJ	--	0.1 U	0.1 U
Aroclor 1268	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.0071 UJ	0.0035 UJ	--	0.1 U	0.1 U
Total PCBs[c]	0.10	NV	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U	0.0035 UJ	0.0035 U	0.005 UJ	0.0035 UJ	--	0.1 U	0.1 U
Permanent Gases (ug/L)																		
Methane	NV	NV	1,480	3,530	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFAS (ug/L)																		
3:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9Cl-PF3ONS (F-53B Major)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11Cl-PF3OUdS (F-53B Minor)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ADONA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EtFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HFPO-DA (GenX)	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MeFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NFDHA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFBS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-SB-3	TWA-SB-4	TWA-5				TWA-5D								TWA-6	
Location Type:			Boring	Boring	Boring				MW								Boring	
Sample Name:			SB-3-0919	SB-4-0919	TWA-5-1	TWA-5-2	TWA-5-3	TWA-5-3	TWA-5	TWA-5-0320	SB-105-0320	TWA-5-0122	TWA-5D-0522	TWA-5D-0822	TWA-5D-1222	TWA-5D-1223	TWA-6-1	TWA-6-2
Collection Date:			09/24/2019	09/24/2019	09/24/2019	09/25/2019	09/25/2019	09/26/2019	12/10/2019	03/09/2020	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	09/26/2019	09/26/2019
Sample Type:		Puget Sound Basin	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
Collection Depth (ft bgs):			--	--	25	35	45	45	--	--	--	27.5	--	27.5	28	--	15	25
PFAS cont. (ug/L)																		
PFDoA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDoS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFDS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFEESA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHpA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHpS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHxA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFHxS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFMBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFMPA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFNA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFNS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFPeA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFPeS	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFTeDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFTrDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PFUnA	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs by EPA 8021B (ug/L)																		
Benzene	5.0	NV	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Ethylbenzene	700	NV	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Methyl tert-butyl ether	20	NV	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Toluene	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Xylenes (total)[d]	1,000	NV	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
VOCs (ug/L)																		
1,1,1,2-Tetrachloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,1,1-Trichloroethane	200	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,1,2,2-Tetrachloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	--	1 U	1 U
1,1,2-Trichloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
1,1-Dichloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,1-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,1-Dichloropropene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,2,3-Trichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,2,3-Trichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,2,4-Trichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U
1,2,4-Trimethylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,2-Dibromo-3-chloropropane	NV	NV	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
1,2-Dibromoethane	0.010	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,2-Dichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U
1,2-Dichloroethane	5.0	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	--	1 U	1 U
1,2-Dichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,3,5-Trimethylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,3-Dichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-SB-3	TWA-SB-4	TWA-5				TWA-5D								TWA-6	
Location Type:			Boring	Boring	Boring				MW								Boring	
Sample Name:			SB-3-0919	SB-4-0919	TWA-5-1	TWA-5-2	TWA-5-3	TWA-5-3	TWA-5	TWA-5-0320	SB-105-0320	TWA-5-0122	TWA-5D-0522	TWA-5D-0822	TWA-5D-1222	TWA-5D-1223	TWA-6-1	TWA-6-2
Collection Date:			09/24/2019	09/24/2019	09/24/2019	09/25/2019	09/25/2019	09/26/2019	12/10/2019	03/09/2020	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	09/26/2019	09/26/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	--	--	25	35	45	45	--	--	--	27.5	--	27.5	28	--	15	25
VOCs cont. (ug/L)																		
1,3-Dichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
1,4-Dichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U
1,4-Dioxane	NV	NV	--	--	--	--	--	--	0.52	0.6	0.65	0.72	0.64	0.65	0.5	--	--	--
2,2-Dichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
2-Butanone	NV	NV	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	20 U	20 U	20 U	20 U	--	10 U	10 U
2-Chlorotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
2-Hexanone	NV	NV	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
4-Chlorotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
4-Isopropyltoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
4-Methyl-2-pentanone	NV	NV	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
Acetone	NV	NV	50 U	50 U	50 U	50 U	50 U	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	--	50 U	50 U
Benzene	5.0	NV	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	--	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	--	0.35 U	0.35 U
Bromobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Bromodichloromethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
Bromoform	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--	1 U	1 U
Bromomethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--	1 U	1 U
Carbon tetrachloride	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
Chlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Chloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Chloroform	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Chloromethane	NV	NV	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
cis-1,2-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
cis-1,3-Dichloropropene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	--	1 U	1 U
Dibromochloromethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
Dibromomethane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Dichlorodifluoromethane (Freon 12)	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Ethylbenzene	700	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Hexachlorobutadiene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	--	--	1 U	1 U
Isopropylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
m,p-Xylene	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
Methyl tert-butyl ether	20	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Methylene chloride	5.0	NV	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	10 U	7.3 U	5 U	5 U	--	5 U	5 U
Naphthalene	160	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U
n-Hexane	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--	1 U	1 U
n-Propylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
o-Xylene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
sec-Butylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Styrene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
tert-Butylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Tetrachloroethene (PCE)	5.0	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Toluene	1,000	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
trans-1,2-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
trans-1,3-Dichloropropene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	--	1 U	1 U
Trichloroethene (TCE)	5.0	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
Trichlorofluoromethane (Freon 11)	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
Vinyl chloride	0.20	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.1 U	0.1 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.2 U	0.2 U
Xylenes (total)[d]	1,000	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-SB-3	TWA-SB-4	TWA-5				TWA-5D								TWA-6	
Location Type:			Boring	Boring	Boring				MW								Boring	
Sample Name:			SB-3-0919	SB-4-0919	TWA-5-1	TWA-5-2	TWA-5-3	TWA-5-3	TWA-5	TWA-5-0320	SB-105-0320	TWA-5-0122	TWA-5D-0522	TWA-5D-0822	TWA-5D-1222	TWA-5D-1223	TWA-6-1	TWA-6-2
Collection Date:			09/24/2019	09/24/2019	09/24/2019	09/25/2019	09/25/2019	09/26/2019	12/10/2019	03/09/2020	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	09/26/2019	09/26/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	--	--	25	35	45	45	--	--	--	27.5	--	27.5	28	--	15	25
PAHs, Low-Level (ug/L)																		
Acenaphthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Anthracene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.20[e][3]	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Chrysene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Fluoranthene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Fluorene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Naphthalene	160	NV	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
Pyrene	NV	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
cPAH TEQ[f][4]	0.20[e][3]	NV	--	--	--	--	--	--	0.02 U	--	--	--	--	--	--	--	--	--
SVOCs (ug/L)																		
1,2,4-Trichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
1,2-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
1,3-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
1,4-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	NV	NV	0.7	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
2,4,5-Trichlorophenol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
2,4,6-Trichlorophenol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
2,4-Dichlorophenol	NV	NV	2 U	2 U	2 U	2 UJ	2 UJ	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 UJ	2 UJ
2,4-Dimethylphenol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
2,4-Dinitrophenol	NV	NV	6 UJ	6 UJ	6 UJ	6 U	6 U	--	6 U	6 U	6 U	3 U	3 U	3 U	3 UJ	--	6 U	6 U
2,4-Dinitrotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
2,6-Dinitrotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
2-Chloronaphthalene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
2-Chlorophenol	NV	NV	2 U	2 U	2 U	2 UJ	2 UJ	--	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--	2 UJ	2 UJ
2-Methylnaphthalene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
2-Methylphenol	NV	NV	2 U	2 U	2 U	2 UJ	2 UJ	--	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--	2 UJ	2 UJ
2-Nitroaniline	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
2-Nitrophenol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	4 U	4 U	4 U	4 UJ	4 UJ	--	4 U	4 U	4 U	2 R	2 U	2 U	2 U	--	4 UJ	4 UJ
3-Nitroaniline	NV	NV	20 U	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	10 U	10 U	10 U	10 U	--	20 U	20 U
4,6-Dinitro-2-methylphenol	NV	NV	6 U	6 U	6 U	6 U	6 U	--	6 U	6 U	6 U	3 U	3 U	3 U	3 U	--	6 U	6 U
4-Bromophenyl phenyl ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
4-Chloro-3-methylphenol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
4-Chloroaniline	NV	NV	20 U	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	10 U	10 U	10 U	10 U	--	20 U	20 U
4-Chlorophenyl phenyl ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
4-Nitroaniline	NV	NV	20 U	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	10 U	10 U	10 U	10 U	--	20 U	20 U
4-Nitrophenol	NV	NV	6 U	6 U	6 U	6 U	6 U	--	6 U	6 U	6 U	3 U	3 U	3 U	3 U	--	6 U	6 U
Acenaphthene	NV	NV	1.9	0.26	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.022	--	0.02 U	0.02 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-SB-3	TWA-SB-4	TWA-5				TWA-5D								TWA-6	
Location Type:			Boring	Boring	Boring				MW								Boring	
Sample Name:			SB-3-0919	SB-4-0919	TWA-5-1	TWA-5-2	TWA-5-3	TWA-5-3	TWA-5	TWA-5-0320	SB-105-0320	TWA-5-0122	TWA-5D-0522	TWA-5D-0822	TWA-5D-1222	TWA-5D-1223	TWA-6-1	TWA-6-2
Collection Date:			09/24/2019	09/24/2019	09/24/2019	09/25/2019	09/25/2019	09/26/2019	12/10/2019	03/09/2020	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023	09/26/2019	09/26/2019
Sample Type:		Puget Sound	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	--	--	25	35	45	45	--	--	--	27.5	--	27.5	28	--	15	25
SVOCs cont. (ug/L)																		
Acenaphthylene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.02 U	0.02 U
Anthracene	NV	NV	0.036	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.032	--	0.02 U	0.02 U
Benzo(a)anthracene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.05	--	0.02 U	0.02 U
Benzo(a)pyrene	0.20[e][3]	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.047	--	0.02 U	0.02 U
Benzo(b)fluoranthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.062	--	0.02 U	0.02 U
Benzo(ghi)perylene	NV	NV	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	--	0.04 U	0.04 U	0.04 U	0.02 U	0.02 U	0.02 U	0.05	--	0.04 U	0.04 U
Benzo(k)fluoranthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.057	--	0.02 U	0.02 U
Benzoic acid	NV	NV	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	--	10 U	10 U	10 U	5 R	5 UJ	5 U	5 U	--	10 UJ	10 UJ
Benzyl alcohol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--	2 U	2 U
Bis(2-chloro-1-methylethyl) ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Bis(2-chloroethoxy)methane	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Bis(2-chloroethyl) ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Bis(2-ethylhexyl) phthalate	NV	NV	3.2 U	3.2 U	4.3	3.2 U	3.2 U	--	3.2 U	3.2 U	3.2 U	1.6 U	1.7 J+	1.6 U	1.6 U	--	3.2 U	3.2 U
Butylbenzyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
Carbazole	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Chrysene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.058	--	0.02 U	0.02 U
Dibenzo(a,h)anthracene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.052	--	0.02 U	0.02 U
Dibenzofuran	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Diethyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
Dimethyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
Di-n-butyl phthalate	NV	NV	2 U	2 U	3.5	2.5	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
Di-n-octyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--	2 U	2 U
Fluoranthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.055	--	0.02 U	0.02 U
Fluorene	NV	NV	0.02 U	0.048	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.036	--	0.02 U	0.02 U
Hexachlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Hexachlorobutadiene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Hexachlorocyclopentadiene	NV	NV	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	--	0.6 U	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U	0.3 UJ	--	0.6 U	0.6 U
Hexachloroethane	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Indeno(1,2,3-cd)pyrene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.052	--	0.02 U	0.02 U
Isophorone	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Naphthalene	160	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Nitrobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
N-Nitrosodiphenylamine	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
N-Nitrosodipropylamine	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
Pentachlorophenol	NV	NV	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	1 U
Phenanthrene	NV	NV	0.042	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.014 J+	0.054 J+	--	0.02 U	0.02 U
Phenol	NV	NV	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	1 R	1.2 J+	1 U	1 U	--	2 U	2 U
Pyrene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.06	--	0.02 U	0.02 U
Naphthalenes, total[h]	160	NV	0.9	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.2 U	0.2 U
cPAH TEQ[f][4]	0.20[e][3]	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.12	--	0.02 U	0.02 U

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-6 (continued)			TWA-6D							
Location Type:			Boring			MW							
Sample Name:			TWA-6-2-R	TWA-6-3	TWA-6-4	TWA-6	TWA-1120	TWA-6-0320	TWA-6-0122	TWA-6D-0522	TWA-6D-0822	TWA-6D-1222	TWA-6D-1223
Collection Date:			09/26/2019	09/27/2019	09/27/2019	12/10/2019	12/10/2019	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023
Sample Type:		Puget Sound	FD	N	N	N	FD	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	25	35	45	--	--	--	27.5	--	27.5	25	--
TPH (ug/L)													
Gasoline-range hydrocarbons	1,000[a]	NV	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--
Diesel-range hydrocarbons	500	NV	560	320	190	710	710	50 U	390	450	440	600 J-	--
Motor oil-range hydrocarbons	500	NV	250 U	320 U	320 U	470	400	250 U	250 U	250 U	250 U	660 J-	--
Diesel+Oil[b]	500	NV	685	480	350	1,180	1,110	250 U	515	575	565	1,260 J-	--
TPH with Silica-Gel Treatment (ug/L)													
Diesel-range hydrocarbons	500	NV	--	--	--	50 U	50 U	50 U	50 UJ	50 U	--	--	--
Motor oil-range hydrocarbons	500	NV	--	--	--	250 U	250 U	250 U	250 UJ	250 U	--	--	--
Diesel+Oil[b]	500	NV	--	--	--	250 U	250 U	250 U	250 UJ	250 U	--	--	--
EPH (ug/L)													
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	78.2 UJ	90.4 UJ	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C12-C16 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C16-C21 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C21-C34 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	78.2 UJ	90.4 UJ	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C12-C16 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C16-C21 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
C21-C34 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	39.1 UJ	45.2 UJ	--
VPH (ug/L)													
C5-C6 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
C6-C8 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
C8-C10 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
C10-C12 Aliphatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
C8-C10 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
C10-C12 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
C12-C13 Aromatic hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	50 U	--
Dissolved Metals (ug/L)													
Aluminum	NV	NV	--	--	--	--	--	--	--	--	--	--	49.9 J+
Arsenic	5.0	8.0	--	--	--	9.19	8.82	9.05	--	--	--	--	6.68
Cadmium	5.0	NV	--	--	--	1 U	1 U	1 U	--	--	--	--	--
Chromium	50	NV	--	--	--	24.8	19.3	45.3	--	--	--	--	21
Copper	NV	NV	--	--	--	2.4 U	2.4 U	3.73	--	--	--	--	2.4 U
Iron	NV	NV	--	--	--	--	--	--	--	--	--	--	2,950
Lead	15	NV	--	--	--	1 U	1 U	1 U	--	--	--	--	--
Manganese	NV	NV	--	--	--	944	938	1,070	--	--	--	--	753
Mercury	2.0	NV	--	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--	--
Nickel	NV	NV	--	--	--	2.56	2.3	5 U	--	--	--	--	--
Selenium	NV	NV	--	--	--	30 U	30 U	16.4	--	--	--	--	--
Zinc	NV	NV	--	--	--	5 U	5 U	5 U	--	--	--	--	--
Total Metals (ug/L)													
Aluminum	NV	NV	--	--	--	--	--	--	--	--	--	--	75.6 J+
Antimony	NV	NV	--	--	--	--	--	--	--	10 U	1 U	--	--
Arsenic	5.0	8.0	20.4	7.56	10.1	7.84	7.34	8.74	10.1	10 U	7.77	9.49	7.26
Barium	NV	NV	--	--	--	--	--	--	--	16.3	16.3	--	--
Beryllium	NV	NV	--	--	--	--	--	--	--	10 U	1 U	--	--
Cadmium	5.0	NV	1 U	1 U	1 U	2 U	1 U	1 U	1 U	10 U	1 U	1 U	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2] Puget Sound Basin	TWA-6 (continued)			TWA-6D							
Location Type:			Boring			MW							
Sample Name:			TWA-6-2-R	TWA-6-3	TWA-6-4	TWA-6	TWA-1120	TWA-6-0320	TWA-6-0122	TWA-6D-0522	TWA-6D-0822	TWA-6D-1222	TWA-6D-1223
Collection Date:			09/26/2019	09/27/2019	09/27/2019	12/10/2019	12/10/2019	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023
Sample Type:			FD	N	N	N	FD	N	N	N	N	N	N
Collection Depth (ft bgs):			25	35	45	--	--	--	27.5	--	27.5	25	--
Total Metals cont. (ug/L)													
Chromium	50	NV	84.8	12.1	9.87	24.8	23.1	45.1	29.1	27.8	29.8	29.2	24.4
Cobalt	NV	NV	--	--	--	--	--	--	--	10 U	1.16	--	--
Copper	NV	NV	113	11	9.55	42.8	69	4.32	2.4 U	10 U	2.4 U	3.95 J+	2.97 J+
Iron	NV	NV	--	--	--	--	--	--	--	2,680	2,730	--	3,030
Lead	15	NV	14.8	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Manganese	NV	NV	1,420	132	67.5	970	868	1,050	811	763	793	806	749
Mercury	2.0	NV	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Nickel	NV	NV	50 U	5 U	5 U	2 U	2.37	5 U	2.75	10 U	3.08	3.01	--
Selenium	NV	NV	22.1	10.4	1 U	20.6	18.1	16	--	18.5	2.57	--	--
Silver	NV	NV	--	--	--	--	--	--	--	10 U	1 U	--	--
Thallium	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
Vanadium	NV	NV	--	--	--	--	--	--	--	107	116	--	--
Zinc	NV	NV	101	7.64	5.95	10 U	5 U	25 U	5 U	50 U	5 U	5 U	--
PCB Aroclors (ug/L)													
Aroclor 1016	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.005 UJ	0.0035 UJ	--
Aroclor 1221	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.005 UJ	0.0035 UJ	--
Aroclor 1232	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.005 UJ	0.0035 UJ	--
Aroclor 1242	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.005 UJ	0.0035 UJ	--
Aroclor 1248	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.007 UJ	0.0035 UJ	--
Aroclor 1254	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.007 UJ	0.0035 UJ	--
Aroclor 1260	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.007 UJ	0.0035 UJ	--
Aroclor 1262	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.007 UJ	0.0035 UJ	--
Aroclor 1268	NV	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.007 UJ	0.0035 UJ	--
Total PCBs[c]	0.10	NV	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.0035 UJ	0.0035 UJ	0.007 UJ	0.0035 UJ	--
Permanent Gases (ug/L)													
Methane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFAS (ug/L)													
3:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
4:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
5:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
6:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
7:3 FTCA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
8:2 FTSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
9Cl-PF3ONS (F-53B Major)	NV	NV	--	--	--	--	--	--	--	--	--	--	--
11Cl-PF3OUdS (F-53B Minor)	NV	NV	--	--	--	--	--	--	--	--	--	--	--
ADONA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
EtFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
EtFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
EtFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--
HFPO-DA (GenX)	NV	NV	--	--	--	--	--	--	--	--	--	--	--
MeFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
MeFOSAA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
MeFOSE	NV	NV	--	--	--	--	--	--	--	--	--	--	--
NFDHA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFBS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-6 (continued)			TWA-6D							
Location Type:			Boring			MW							
Sample Name:			TWA-6-2-R	TWA-6-3	TWA-6-4	TWA-6	TWA-1120	TWA-6-0320	TWA-6-0122	TWA-6D-0522	TWA-6D-0822	TWA-6D-1222	TWA-6D-1223
Collection Date:			09/26/2019	09/27/2019	09/27/2019	12/10/2019	12/10/2019	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023
Sample Type:		Puget Sound	FD	N	N	N	FD	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	25	35	45	--	--	--	27.5	--	27.5	25	--
PFAS cont. (ug/L)													
PFDoA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFDoS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFDS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFEESA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFHpA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFHpS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFHxA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFHxS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFMBA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFMPA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFNA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFNS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFOA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFOS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFOSA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFPeA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFPeS	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFTeDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFTrDA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
PFUnA	NV	NV	--	--	--	--	--	--	--	--	--	--	--
VOCs by EPA 8021B (ug/L)													
Benzene	5.0	NV	--	--	--	--	--	--	--	--	--	1 U	--
Ethylbenzene	700	NV	--	--	--	--	--	--	--	--	--	1 U	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	1 U	--
Methyl tert-butyl ether	20	NV	--	--	--	--	--	--	--	--	--	10 U	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	1 U	--
Toluene	1,000	NV	--	--	--	--	--	--	--	--	--	1 U	--
Xylenes (total)[d]	1,000	NV	--	--	--	--	--	--	--	--	--	1 U	--
VOCs (ug/L)													
1,1,1,2-Tetrachloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,1,1-Trichloroethane	200	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,1,2,2-Tetrachloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	--
1,1,2-Trichloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
1,1-Dichloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,1-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,1-Dichloropropene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,2,3-Trichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,2,3-Trichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,2,4-Trichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2,4-Trimethylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,2-Dibromo-3-chloropropane	NV	NV	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
1,2-Dibromoethane	0.010	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,2-Dichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,2-Dichloroethane	5.0	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	--
1,2-Dichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,3,5-Trimethylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,3-Dichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

MAUL FOSTER ALONGI

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-6 (continued)			TWA-6D							
Location Type:			Boring			MW							
Sample Name:			TWA-6-2-R	TWA-6-3	TWA-6-4	TWA-6	TWA-1120	TWA-6-0320	TWA-6-0122	TWA-6D-0522	TWA-6D-0822	TWA-6D-1222	TWA-6D-1223
Collection Date:			09/26/2019	09/27/2019	09/27/2019	12/10/2019	12/10/2019	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023
Sample Type:		Puget Sound	FD	N	N	N	FD	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	25	35	45	--	--	--	27.5	--	27.5	25	--
VOCs cont. (ug/L)													
1,3-Dichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
1,4-Dichlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
1,4-Dioxane	NV	NV	--	--	--	6.6	6.4	2.2	6	4.1	4.6	5.3	--
2,2-Dichloropropane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
2-Butanone	NV	NV	10 U	10 U	10 U	10 U	10 U	10 U	20 U	20 U	20 U	20 U	--
2-Chlorotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
2-Hexanone	NV	NV	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
4-Chlorotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
4-Isopropyltoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
4-Methyl-2-pentanone	NV	NV	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
Acetone	NV	NV	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	--
Benzene	5.0	NV	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	--
Bromobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Bromodichloromethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Bromoform	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--
Bromomethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--
Carbon tetrachloride	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Chlorobenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Chloroethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Chloroform	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Chloromethane	NV	NV	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
cis-1,2-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
cis-1,3-Dichloropropene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	--
Dibromochloromethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Dibromomethane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Dichlorodifluoromethane (Freon 12)	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Ethylbenzene	700	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Hexachlorobutadiene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	--	--
Isopropylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
m,p-Xylene	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--
Methyl tert-butyl ether	20	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Methylene chloride	5.0	NV	5 U	5 U	5 U	5 U	5 U	5 U	10 U	8.3 U	5 U	5 U	--
Naphthalene	160	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--
n-Hexane	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--
n-Propylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
o-Xylene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
sec-Butylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Styrene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
tert-Butylbenzene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Tetrachloroethene (PCE)	5.0	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Toluene	1,000	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
trans-1,2-Dichloroethene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
trans-1,3-Dichloropropene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.4 U	0.4 U	0.4 U	0.4 U	--
Trichloroethene (TCE)	5.0	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Trichlorofluoromethane (Freon 11)	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Vinyl chloride	0.20	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Xylenes (total)[d]	1,000	NV	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-6 (continued)			TWA-6D							
Location Type:			Boring			MW							
Sample Name:			TWA-6-2-R	TWA-6-3	TWA-6-4	TWA-6	TWA-1120	TWA-6-0320	TWA-6-0122	TWA-6D-0522	TWA-6D-0822	TWA-6D-1222	TWA-6D-1223
Collection Date:			09/26/2019	09/27/2019	09/27/2019	12/10/2019	12/10/2019	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023
Sample Type:		Puget Sound	FD	N	N	N	FD	N	N	N	N	N	N
Collection Depth (ft bgs):		Basin	25	35	45	--	--	--	27.5	--	27.5	25	--
PAHs, Low-Level (ug/L)													
Acenaphthene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Anthracene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Benzo(a)anthracene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Benzo(a)pyrene	0.20[(e)(3)]	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Chrysene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Fluoranthene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Fluorene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Naphthalene	160	NV	--	--	--	0.2 U	0.2 U	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
Pyrene	NV	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
cPAH TEQ[(f)(4)]	0.20[(e)(3)]	NV	--	--	--	0.02 U	0.02 U	--	--	--	--	--	--
SVOCs (ug/L)													
1,2,4-Trichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
1,2-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
1,3-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
1,4-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
1,4-Dioxane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
2,4,5-Trichlorophenol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
2,4,6-Trichlorophenol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
2,4-Dichlorophenol	NV	NV	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
2,4-Dimethylphenol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
2,4-Dinitrophenol	NV	NV	6 U	6 U	6 U	6 U	6 U	6 U	3 U	3 U	3 U	3 UJ	--
2,4-Dinitrotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
2,6-Dinitrotoluene	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
2-Chloronaphthalene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
2-Chlorophenol	NV	NV	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--
2-Methylnaphthalene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
2-Methylphenol	NV	NV	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--
2-Nitroaniline	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
2-Nitrophenol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
3- & 4-Methylphenol (m,p-Cresol)	NV	NV	4 UJ	4 UJ	4 UJ	4 U	4 U	4 U	2 R	2 U	2 U	2 U	--
3-Nitroaniline	NV	NV	20 U	20 U	20 U	20 U	20 U	20 U	10 U	10 U	10 U	10 U	--
4,6-Dinitro-2-methylphenol	NV	NV	6 U	6 U	6 U	6 U	6 U	6 U	3 U	3 U	3 U	3 U	--
4-Bromophenyl phenyl ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
4-Chloro-3-methylphenol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
4-Chloroaniline	NV	NV	20 U	20 U	20 U	20 U	20 U	20 U	10 U	10 U	10 U	10 U	--
4-Chlorophenyl phenyl ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
4-Nitroaniline	NV	NV	20 U	20 U	20 U	20 U	20 U	20 U	10 U	10 U	10 U	10 U	--
4-Nitrophenol	NV	NV	6 U	6 U	6 U	6 U	6 U	6 U	3 U	3 U	3 U	3 U	--
Acenaphthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--

Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Location:	MTCA Method A[1]	WA Natural Background Arsenic[2]	TWA-6 (continued)			TWA-6D							
Location Type:			Boring			MW							
Sample Name:			TWA-6-2-R	TWA-6-3	TWA-6-4	TWA-6	TWA-1120	TWA-6-0320	TWA-6-0122	TWA-6D-0522	TWA-6D-0822	TWA-6D-1222	TWA-6D-1223
Collection Date:			09/26/2019	09/27/2019	09/27/2019	12/10/2019	12/10/2019	03/09/2020	01/25/2022	05/03/2022	08/23/2022	12/06/2022	12/13/2023
Sample Type:		Puget Sound Basin	FD	N	N	N	FD	N	N	N	N	N	N
Collection Depth (ft bgs):			25	35	45	--	--	--	27.5	--	27.5	25	--
SVOCs cont. (ug/L)													
Acenaphthylene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--
Anthracene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(a)anthracene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.03	--
Benzo(a)pyrene	0.20[e][3]	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.028	--
Benzo(b)fluoranthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.059	--
Benzo(ghi)perylene	NV	NV	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.02 U	0.02 U	0.02 U	0.044	--
Benzo(k)fluoranthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.061	--
Benzoic acid	NV	NV	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	5 R	5 UJ	5 U	5 U	--
Benzyl alcohol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--
Bis(2-chloro-1-methylethyl) ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Bis(2-chloroethoxy)methane	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Bis(2-chloroethyl) ether	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Bis(2-ethylhexyl) phthalate	NV	NV	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	1.6 U	1.6 U	1.6 U	5.8	--
Butylbenzyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
Carbazole	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Chrysene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.04	--
Dibenzo(a,h)anthracene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.049	--
Dibenzofuran	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Diethyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
Dimethyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
Di-n-butyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1.2 J	1 U	1 U	--
Di-n-octyl phthalate	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	--
Fluoranthene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.025	--
Fluorene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.02	--
Hexachlorobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Hexachlorobutadiene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Hexachlorocyclopentadiene	NV	NV	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U	0.3 UJ	--
Hexachloroethane	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Indeno(1,2,3-cd)pyrene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.045	--
Isophorone	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Naphthalene	160	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Nitrobenzene	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
N-Nitrosodiphenylamine	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
N-Nitrosodipropylamine	NV	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
Pentachlorophenol	NV	NV	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	--
Phenanthrene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.012 J+	0.06	--
Phenol	NV	NV	2 U	2 U	2 U	2 U	2 U	2 U	1 R	1 U	1 U	1 U	--
Pyrene	NV	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.02	--
Naphthalenes, total[h]	160	NV	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	--
cPAH TEQ[f][4]	0.20[e][3]	NV	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.091	--

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Table 2-3
Summary of Groundwater Analytical Data
Hylebos Marsh Interim Action, Tacoma, Washington

Notes

Data summation rules are as follows: non-detect results are multiplied by one-half (except for PCB Aroclors) when used for sums or TEQs. When all results are non-detect, the highest reporting limit is provided as the sum or TEQ.

Sample results were compared to screening criteria based on the significant figures of the screening criteria.

Shading (color key below) indicates values that exceed screening criteria; non-detects (U, UJ) and rejected results (R) were not compared with screening criteria. When multiple criteria are exceeded, results are shaded based on the highest criteria. Arsenic results were not shaded for MTCA Method A exceedances when results were below natural background.

MTCA Method A

WA Natural Background Arsenic Concentration, Puget Sound Basin

-- = not analyzed or not available.
cPAH = carcinogenic polycyclic aromatic hydrocarbon.
EPA =U.S. Environmental Protection Agency.
EPH = extractable petroleum hydrocarbons.
FD = field duplicate sample.
ft bgs = feet below ground surface.
J = result is estimated.
J+ = result is estimated, but the result may be biased high.
J- = result is estimated, but the result may be biased low.
MW = monitoring well.
MTCA = Model Toxics Control Act.
N = normal environmental sample.
NV = no value.
PAH = polycyclic aromatic hydrocarbon.
PCB = polychlorinated biphenyl.
PFAS = per- and polyfluoroalkyl substances.
R = result is rejected. The analyte may or may not be present in the sample.
SVOC = semivolatile organic compound.
TEQ = toxicity equivalency.
TPH = total petroleum hydrocarbons.
U = result is non-detect at the method reporting limit.
ug/L = micrograms per liter.
UJ = result is non-detect with an estimated method reporting limit.
VOC = volatile organic compound.
VPH = volatile petroleum hydrocarbons.
[a]Screening levels for gasoline-range hydrocarbons without detectable benzene.
[b]Diesel+Oil is the sum of diesel- and oil-range hydrocarbons.
[c]Total PCBs is the sum of all PCB Aroclors. Non-detect results are not included in the sum.
[d]Total xylenes is the sum of m,p-xylene and o-xylene.
[e]MTCA Method A value for benzo(a)pyrene and cPAH TEQ is outdated. The maximum contaminant level is provided, which is considered sufficiently protective.
[f]cPAH TEQ calculated as the sum of each cPAH concentration multiplied by the corresponding toxic equivalent factor.
[g]Reporting limit is unknown.
[h]Total naphthalenes is the sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene.

References

[1]Ecology. 2025. *Cleanup Levels and Risk Calculation (CLARC) table* . Washington State Department of Ecology, Toxics Cleanup Program. January.
[2]Ecology. 2022. *Natural Background Groundwater Arsenic Concentrations in Washington State* . Publication No. 14-09-044. Washington State Department of Ecology, Toxics Cleanup Program. January.
[3]Ecology. 2021. *Polycyclic Aromatic Hydrocarbons and Benzo[a]pyrene: Changes to MTCA Default Cleanup Levels for 2017.* Supporting material for Cleanup Levels and Risk Calculation (CLARC). Washington State Department of Ecology, Toxics Cleanup Program. July.
[4]Ecology. 2015. *Implementation Memorandum #10: Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs)* . Publication No. 15-09-049. Washington State Department of Ecology, Toxics Cleanup Program. April 20.

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Table 3-1
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 1

Project:	Hylebos Marsh Interim Action		MAUL FOSTER ALONGI 2815 2nd Avenue, Suite 540 Seattle, WA 98121 206-858-7620 www.maulfoster.com
Client:	Port of Tacoma		
Project No./Task:	M0615.20.015	Initial	
Prepared By:	A. Hand	ACH	
Checked By:	J. Elliott	JCE	
Date:	1/22/2026		
Revision No.:	3		

Cost Estimate Summary—Feasibility Level		
Schedule A—	Pre-Design Test Pitting	$ 26,000
Schedule B—	Mobilization and Preconstruction Survey	$ 369,000
Schedule C—	Temporary Erosion and Sediment Control	$ 36,000
Schedule D—	Sheet Pile Wall, Excavation, and Offsite Disposal	$ 5,982,000
Schedule E—	Backfill and Restoration	$ 44,000
Schedule F—	Construction Management, Administrative Costs, Permitting, and Contingency	$ 1,970,000
	Total:	**$ 8,427,000**

Assumptions:

1 This estimate is based on a conceptual-level design. Approaches to retaining wall construction, site layout, and staging made during final design may significantly alter project cost.

2 The cost assumes that the extent of auto fluff fill is limited to the extents defined during 2024 investigation activities (MFA 2024).

3 The cost for transport and disposal assumes all auto fluff-containing fill will be excavated and disposed of at a hazardous waste incineration facility due to the presence of putrescible waste (i.e., invasive snail species present at the site).

4 Portions of the site will require placement of roadway fabric and quarry spalls (site improvements) to facilitate the loading of trucks and staging equipment.

5 Wetland compensatory mitigation costs are not included in this estimate.

6 A 20% contingency is included.

Table 3-1
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 1

Schedule A					
Pre-Design Test Pitting		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
A.1	Excavation Contractor	1	LS	$ 17,000	$ 17,000
A.2	Laboratory Analysis	1	LS	$ 5,000	$ 5,000
A.3	Field Staff	1	LS	$ 3,500	$ 3,500
				Subtotal Schedule A:	**$ 25,500**

Schedule B					
Mobilization and Preconstruction Survey		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
B.1	Mobilization (5% of Capital Cost)	1	LS	$ 306,000	$ 306,000
B.2	Pre-design Survey	1	LS	$ 10,000	$ 10,000
B.3	Install Temporary Fencing	2,700	LF	$ 5	$ 13,500
B.4	Site Improvements	1	LS	$ 30,000	$ 30,000
B.5	Clearing and Grubbing	1	LS	$ 8,800	$ 9,000
				Subtotal Schedule B:	**$ 368,500**

Schedule C					
Temporary Erosion and Sediment Control		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
C.1	Wheel Wash	1	LS	$ 18,000	$ 18,000
C.2	Silt Fencing	1,000	LF	$ 4	$ 4,000
C.3	Plastic Sheeting	2,700	LF	$ 5	$ 13,500
				Subtotal Schedule C:	**$ 35,500**

Schedule D					
Sheet Pile Wall, Excavation, and Offsite Disposal		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
D.1	Permanent Sheet Pile Wall	11,445	SF	$ 40	$ 458,000
D.2	Excavation and Handling	7,700	BCY	$ 20	$ 154,000
D.3	Transportation and Disposal	10,700	Tons	$ 500	$ 5,360,000
D.4	APHIS-Certified Driver	1	LS	$ 10,000	$ 10,000
				Subtotal Schedule D:	**$ 5,982,000**

Schedule E					
Backfill and Restoration		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
E.1	Topsoil import and placement	690	LCY	$ 37	$ 26,000
E.2	Hydroseed	118,865	SF	$ 0.15	$ 18,000
				Subtotal Schedule E:	**$ 44,000**

Schedule F					
Construction Management, Administrative Costs, Permitt		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
F.1	Permitting	1	LS	$ 30,000	$ 30,000
F.2	Project Management (6% of Capital Cost)	1	LS	$ 386,000	$ 386,000
F.3	Remedial Design	1	LS	$ 50,000	$ 50,000
F.4	Construction Management	1	LS	$ 100,000	$ 100,000
F.5	Contingency (20%)	1	LS	$ 1,404,000	$ 1,404,000
				Subtotal Schedule F:	**$ 1,970,000**

Notes:
bcy = bank cubic yards
LCY = loose cubic yards
LF = linear feet
LS = lump sum
SF = square feet

Table 3-2
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 2

Project:	Hylebos Marsh Interim Action		MAUL FOSTER ALONGI 2815 2nd Avenue, Suite 540 Seattle, WA 98121 206-858-7620 www.maulfoster.com
Client:	Port of Tacoma		
Project No./Task:	M0615.20.015	Initial	
Prepared By:	A. Hand	ACH	
Checked By:	J. Elliott	JCE	
Date:	1/22/2026		
Revision No.:	3		

Cost Estimate Summary—Feasibility Level		
Schedule A—	Mobilization and Site Preparation	$ 107,000
Schedule B—	Temporary Erosion and Sediment Control	$ 36,000
Schedule C—	Containment Wall Installation and Grading	$ 288,000
Schedule D—	Cap Installation	$ 501,000
Schedule E—	Construction Management, Administrative Costs, Permitting, and Contingency	$ 503,000
	Total:	**$ 1,435,000**

Assumptions:

1 This estimate is based on a conceptual-level design. Approaches to retaining wall construction, dewatering, site layout, cap installation, and staging made during final design may significantly alter project cost.

2 The cost assumes that the extent of auto fluff fill is limited to the extents defined during 2024 investigation activities (MFA 2024).

3 Portions of the site will require placement of roadway fabric and quarry spalls (site improvements) to facilitate the loading of trucks and staging equipment.

4 Wetland compensatory mitigation and sheet pile wall construction costs are not included in this estimate.

5 A 20% contingency is included.

Table 3-2
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 2

Schedule A							
Mobilization and Site Preparation		*Quantity*	*Unit*		*Unit Cost*		*Total Cost*
A.1	Mobilization (5% of Capital Cost)	1	LS	$	44,000	$	44,000
A.2	Pre-design Survey	1	LS	$	10,000	$	10,000
A.3	Install Temporary Fencing	2,700	FL	$	5	$	13,500
A.4	Site Improvements	1	LS	$	30,000	$	30,000
A.5	Clearing and Grubbing	1	LS	$	8,800	$	9,000
					Subtotal Schedule A:	**$**	**106,500**
Schedule B							
Temporary Erosion and Sediment Control		*Quantity*	*Unit*		*Unit Cost*		*Total Cost*
B.1	Wheel Wash	1	LS	$	18,000	$	18,000
B.2	Silt Fencing	1,000	LF	$	4	$	4,000
B.3	Plastic Sheeting	2,700	LF	$	5	$	13,500
					Subtotal Schedule B:	**$**	**35,500**
Schedule C							
Containment Wall Installation and Grading		*Quantity*	*Unit*		*Unit Cost*		*Total Cost*
C.1	Pre-construction Staking	1	LS	$	2,000	$	2,000
C.2	Excavation and Handling	373	BCY	$	20	$	8,000
C.3	Backfill	124	CY	$	128	$	16,000
C.4	Ecology Blocks (Material)	1	LS	$	96,000	$	96,000
C.5	Ecology Blocks (Placement/Installation)	1	LS	$	35,000	$	35,000
C.6	Fill, Compaction, & Grading	1	LS	$	106,000	$	106,000
C.7	Dewatering	1	LS	$	25,000	$	25,000
					Subtotal Schedule C:	**$**	**288,000**
Schedule D							
Cap Installation		*Quantity*	*Unit*		*Unit Cost*		*Total Cost*
D.1	Excavation and Handling	850	BCY	$	20	$	17,000
D.2	Soil import and placement	5,900	LCY	$	37	$	219,000
D.3	Gravel import and placement	1,008	TON	$	49	$	50,000
D.4	Compaction & Grading	1	LS	$	7,000	$	7,000
D.5	Asphalt placement	640	TON	$	325	$	208,000
					Subtotal Schedule D:	**$**	**501,000**
Schedule E							
Construction Management, Administrative Costs, Permitting, and Contingency		*Quantity*	*Unit*		*Unit Cost*		*Total Cost*
E.1	Permitting	1	LS	$	30,000	$	30,000
E.2	Project Management (6% of Capital Cost)	1	LS	$	56,000	$	56,000
E.3	Remedial Design	1	LS	$	50,000	$	50,000
E.4	Construction Management	1	LS	$	120,000	$	120,000
E.5	Environmental Covenant and Recording	1	LS	$	10,000	$	10,000
E.6	Contingency (20%)	1	LS	$	237,000	$	237,000
					Subtotal Schedule E:	**$**	**503,000**

Notes:
bcy = bank cubic yards
LCY = loose cubic yards
LF = linear feet
LS = lump sum
SF = square feet

Table 3-3
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 3A

Project:	Hylebos Marsh Interim Action	
Client:	Port of Tacoma	
Project No./Task:	M0615.20.015	Initial
Prepared By:	A. Hand	ACH
Checked By:	J. Elliott	JCE
Date:	1/22/2026	
Revision No.:	2	

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Cost Estimate Summary—Feasibility Level			
Schedule A—	Mobilization and Site Preparation	$	329,000
Schedule B—	Temporary Erosion and Sediment Control	$	36,000
Schedule C—	Containment Wall Installation and Grading	$	288,000
Schedule D—	Cap Installation	$	501,000
Schedule E—	Pre-Design Test Pitting, Sheet Pile Wall Installation, Excavation and Offsite Disposal	$	4,379,500
Schedule F—	Backfill and Restoration	$	44,000
Schedule G—	Construction Management, Administrative Costs, Permitting, and Contingency	$	1,823,000
	Total:	**$**	**7,400,500**

Assumptions:

1. This estimate is based on a conceptual-level design. Approaches to retaining wall construction, dewatering, site layout, cap installation, and staging made during final design may significantly alter project cost.
2. The cost assumes that the extent of auto fluff fill is limited to the extents defined during 2024 investigation activities (MFA 2024).
3. All auto fluff-containing fill will be excavated.
4. The cost for waste disposal assumes that the cap material can be disposed of at a non-hazardous waste landfill.
5. The cost for waste disposal assumes that the auto fluff and contaminated soil will be disposed of at a hazardous waste landfill.
6. The cost for transport and disposal assumes all contaminated and cap material will be disposed of offsite. This cost may be reduced if the cap material can be reused as excavation backfill and will be confirmed during final design.
7. Portions of the site will require placement of roadway fabric and quarry spalls (site improvements) to facilitate the loading of trucks and staging equipment.
8. Wetland compensatory mitigation is not included in this estimate.
9. A 20% contingency is included.

Table 3-3
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 3A

Schedule A					
Mobilization and Site Preparation		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
A.1	Mobilization (5% of Capital Cost)	1	LS	$ 266,000	$ 266,000
A.2	Pre-Design Survey	1	LS	$ 10,000	$ 10,000
A.3	Install Temporary Fencing	2,700	LF	$ 5	$ 13,500
A.4	Site Improvements	1	LS	$ 30,000	$ 30,000
A.5	Clearing and Grubbing	1	LS	$ 8,800	$ 9,000
				Subtotal Schedule A:	**$ 328,500**
Schedule B					
Temporary Erosion and Sediment Control		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
B.1	Wheel Wash	1	LS	$ 18,000	$ 18,000
B.2	Silt Fencing	1,000	LF	$ 4	$ 4,000
B.3	Plastic Sheeting	2,700	LF	$ 5	$ 13,500
				Subtotal Schedule B:	**$ 35,500**
Schedule C					
Containment Wall Installation and Grading		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
C.1	Pre-construction Staking	1	LS	$ 2,000	$ 2,000
C.2	Excavation and Handling	373	BCY	$ 20	$ 8,000
C.3	Backfill	124	CY	$ 128	$ 16,000
C.4	Ecology Blocks (Material)	1	LS	$ 96,000	$ 96,000
C.5	Ecology Blocks (Placement/Installation)	1	LS	$ 35,000	$ 35,000
C.6	Fill, Compaction, & Grading	1	LS	$ 106,000	$ 106,000
C.7	Dewatering	1	LS	$ 25,000	$ 25,000
				Subtotal Schedule C:	**$ 288,000**
Schedule D					
Cap Installation		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
D.1	Excavation and Handling	850	BCY	$ 20	$ 17,000
D.2	Soil import and placement	5,900	LCY	$ 37	$ 219,000
D.3	Gravel import and placement	1,008	TON	$ 49	$ 50,000
D.4	Compaction & Grading	1	LS	$ 7,000	$ 7,000
D.5	Asphalt placement	640	TON	$ 325	$ 208,000
				Subtotal Schedule D:	**$ 501,000**
Schedule E					
Pre-Design Test Pitting, Sheet Pile Wall Installation, Excavation and Offsite Disposal		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
E.1	Excavation Contractor (for Test Pits)	1	LS	$ 17,000	$ 17,000
E.2	Laboratory Analysis (for Test Pits)	1	LS	$ 5,000	$ 5,000
E.3	Field Staff (for Test Pits)	1	LS	$ 3,500	$ 3,500
E.4	Permanent Sheet Pile Wall	11,445	SF	$ 40	$ 458,000
E.5	Excavation and Handling	12,600	BCY	$ 20	$ 252,000
E.6	Transportation and Disposal - Hazardous Waste	10,700	Tons	$ 316	$ 3,382,000
E.7	Transportation and Disposal - Clean Fill	7,900	Tons	$ 30	$ 237,000
E.8	Ecology Block Wall Removal	1	LS	$ 25,000	$ 25,000
				Subtotal Schedule E:	**$ 4,379,500**
Schedule F					
Backfill and Restoration		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
F.1	Topsoil import and placement	690	LCY	$ 37	$ 26,000
F.2	Hydroseed	118,865	SF	$ 0.15	$ 18,000
				Subtotal Schedule E:	**$ 44,000**

Table 3-3
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 3A

Schedule G					
Construction Management, Administrative Costs, Perm		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
G.1	Permitting	1	LS	$ 30,000	$ 30,000
G.2	Project Management (6% of Capital Cost)	1	LS	$ 335,000	$ 335,000
G.3	Remedial Design	1	LS	$ 75,000	$ 75,000
G.4	Construction Management	1	LS	$ 150,000	$ 150,000
G.5	Contingency (20%)	1	LS	$ 1,233,000	$ 1,233,000
				Subtotal Schedule F:	**$ 1,823,000**

Notes:
bcy = bank cubic yards
LCY = loose cubic yards
LF = linear feet
LS = lump sum
SF = square feet

Table 3-4

ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 3B

Project:	Hylebos Marsh Interim Action	
Client:	Port of Tacoma	
Project No./Task:	M0615.20.015	Initial
Prepared By:	A. Hand	ACH
Checked By:	J. Elliott	JCE
Date:	2/19/2026	
Revision No.:	1	

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Cost Estimate Summary—Feasibility Level			
Schedule A—	Mobilization and Site Preparation	$	240,000
Schedule B—	Temporary Erosion and Sediment Control	$	36,000
Schedule C—	Containment Wall Installation and Grading	$	288,000
Schedule D—	Cap Installation	$	501,000
Schedule E—	Pre-Design Test Pitting, Sheet Pile Wall Installation, Excavation and Offsite Disposal	$	2,602,500
Schedule F—	Backfill and Restoration	$	44,000
Schedule G—	Construction Management, Administrative Costs, Permitting, and Contingency	$	1,316,000
	Total:	**$**	**5,027,500**

Assumptions:

1 This estimate is based on a conceptual-level design. Approaches to retaining wall construction, dewatering, site layout, cap installation, and staging made during final design may significantly alter project cost.

2 The cost assumes that the extent of auto fluff fill is limited to the extents defined during 2024 investigation activities (MFA 2024).

3 All auto fluff-containing fill will be excavated.

4 The cost for waste disposal assumes that the cap material can be disposed of at a non-hazardous waste landfill.

5 The cost for waste disposal assumes that the auto fluff and contaminated soil will be disposed of at a non-hazardous waste landfill.

6 The cost for transport and disposal assumes all contaminated and cap material will be disposed of offsite. This cost may be reduced if the cap material can be reused as excavation backfill and will be confirmed during final design.

7 Portions of the site will require placement of roadway fabric and quarry spalls (site improvements) to facilitate the loading of trucks and staging equipment.

8 Wetland compensatory mitigation is not included in this estimate.

9 A 20% contingency is included.

Table 3-4
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 3B

Schedule A					
Mobilization and Site Preparation		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
A.1	Mobilization (5% of Capital Cost)	1	LS	$ 177,000	$ 177,000
A.2	Pre-Design Survey	1	LS	$ 10,000	$ 10,000
A.3	Install Temporary Fencing	2,700	LF	$ 5	$ 13,500
A.4	Site Improvements	1	LS	$ 30,000	$ 30,000
A.5	Clearing and Grubbing	1	LS	$ 8,800	$ 9,000
				Subtotal Schedule A:	**$ 239,500**
Schedule B					
Temporary Erosion and Sediment Control		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
B.1	Wheel Wash	1	LS	$ 18,000	$ 18,000
B.2	Silt Fencing	1,000	LF	$ 4	$ 4,000
B.3	Plastic Sheeting	2,700	LF	$ 5	$ 13,500
				Subtotal Schedule B:	**$ 35,500**
Schedule C					
Containment Wall Installation and Grading		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
C.1	Pre-construction Staking	1	LS	$ 2,000	$ 2,000
C.2	Excavation and Handling	373	BCY	$ 20	$ 8,000
C.3	Backfill	124	CY	$ 128	$ 16,000
C.4	Ecology Blocks (Material)	1	LS	$ 96,000	$ 96,000
C.5	Ecology Blocks (Placement/Installation)	1	LS	$ 35,000	$ 35,000
C.6	Fill, Compaction, & Grading	1	LS	$ 106,000	$ 106,000
C.7	Dewatering	1	LS	$ 25,000	$ 25,000
				Subtotal Schedule C:	**$ 288,000**
Schedule D					
Cap Installation		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
D.1	Excavation and Handling	850	BCY	$ 20	$ 17,000
D.2	Soil import and placement	5,900	LCY	$ 37	$ 219,000
D.3	Gravel import and placement	1,008	TON	$ 49	$ 50,000
D.4	Compaction & Grading	1	LS	$ 7,000	$ 7,000
D.5	Asphalt placement	640	TON	$ 325	$ 208,000
				Subtotal Schedule D:	**$ 501,000**
Schedule E					
Pre-Design Test Pitting, Sheet Pile Wall Installation, Excavation and Offsite Disposal		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
E.1	Excavation Contractor (for Test Pits)	1	LS	$ 17,000	$ 17,000
E.2	Laboratory Analysis (for Test Pits)	1	LS	$ 5,000	$ 5,000
E.3	Field Staff (for Test Pits)	1	LS	$ 3,500	$ 3,500
E.4	Permanent Sheet Pile Wall	11,445	SF	$ 40	$ 458,000
E.5	Excavation and Handling	12,600	BCY	$ 20	$ 252,000
E.6	Transportation and Disposal - Hazardous Waste	10,700	Tons	$ 150	$ 1,605,000
E.7	Transportation and Disposal - Clean Fill	7,900	Tons	$ 30	$ 237,000
E.8	Ecology Block Wall Removal	1	LS	$ 25,000	$ 25,000
				Subtotal Schedule E:	**$ 2,602,500**
Schedule F					
Backfill and Restoration		*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
F.1	Topsoil import and placement	690	LCY	$ 37	$ 26,000
F.2	Hydroseed	118,865	SF	$ 0.15	$ 18,000
				Subtotal Schedule E:	**$ 44,000**

Table 3-4
ENGINEER'S PRELIMINARY OPINION OF PROBABLE COST - ALTERNATIVE 3B

Schedule G					
	Construction Management, Administrative Costs, Perr	*Quantity*	*Unit*	*Unit Cost*	*Total Cost*
G.1	Permitting	1	LS	$ 30,000	$ 30,000
G.2	Project Management (6% of Capital Cost)	1	LS	$ 223,000	$ 223,000
G.3	Remedial Design	1	LS	$ 75,000	$ 75,000
G.4	Construction Management	1	LS	$ 150,000	$ 150,000
G.5	Contingency (20%)	1	LS	$ 838,000	$ 838,000
				Subtotal Schedule F:	**$ 1,316,000**

Notes:
bcy = bank cubic yards
LCY = loose cubic yards
LF = linear feet
LS = lump sum
SF = square feet

Table 3-5
Interim Action Alternatives Disproportionate Cost Analysis
Hylebos Marsh Interim Action
Tacoma, Washington

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Alternative	Protectiveness	Permanence	Long-term effectiveness	Implementation Risk Management	Implementability	Total Weighted Benefits	Cost: Total Estimated Cost	Cost: Cost Effectiveness[(a)]	Cost: Total Benefit per $1 Million Cost	Comments
Weighting	20%	20%	20%	20%	20%	100%				
Alternative 1: Excavation and Off-Site Disposal	5	5	5	3	1	3.80	$8,427,000	$2,217,632	0.45	Alternative achieves permanent remedy, but waste disposal facilities that can accept the material are minimal; requires transport of material great distances, which increases risk for public and may not be technically implementable due to risk of spreading snails beyond the Property.
Alternative 2: Containment and Capping	3	2	3	4	5	3.40	$1,435,000	$422,059	2.37	Alternative is non-permanent, as material will remain in-place and will require long-term monitoring if final remedy. Eliminates potential risk of transporting snails beyond the Property, which considers public concerns and vulnerable populations.
Alternative 3a: Containment, Capping, and Post-Eradication Excavation	5	4.9	5	3	3	4.18	$7,400,500	$1,770,455	0.56	Alternative is permanent, but short-term and implementability risks are associated with excavation and assumption that snail eradication efforts will be certified within three years and excavated soil will be disposed of as hazardous waste. Reduces potential risk of transporting snails beyond Property, which considers public concerns and vulnerable populations.
Alternative 3b: Containment, Capping, and Post-Eradication Excavation	5	4.9	5	3	3	4.18	$5,027,500	$1,202,751	0.83	Alternative is permanent, but short-term and implementability risks are associated with excavation and assumption that snail eradication efforts will be certified within three years and excavated soil will be disposed of as non-hazardous waste. Reduces potential risk of transporting snails beyond Property, which considers public concerns and vulnerable populations.

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Table 3-5
Interim Action Alternatives Disproportionate Cost Analysis
Hylebos Marsh Interim Action
Tacoma, Washington

NOTES:

Preferred Alternative.

The benefits for each alternative were ranked on a linear numerical scale from 1 to 5 with the higher score indicating a higher degree of benefit.

The following factors relative to each criteria were considered to determine ranking:

Protectiveness = The degree to which the alternative reduces existing risks, the time required for alternative to reduce risks at the site and attain cleanup standards, the on-site and offsite risks remaining after implementing the alternative, and improvement of the overall environmental quality.

Permanence = The adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous substance releases and sources of releases, the degree of irreversibility of waste treatment process, and the characteristics and quantity of treatment residuals generated.

Long-term effectiveness = The degree of certainty that the alternative will be successful, the reliability of the alternative during the period of time hazardous substances are expected to remain on-site at concentrations that exceed cleanup levels, the resilience of the alternative to climate change impacts, the magnitude of residual risk with the alternative in place, the effectiveness of controls required to manage treatment residues or remaining wastes.

Implementation Risk Management = The risks to human health and the environment, including likely vulnerable populations and overburdened communities, associated with the alternative during construction and implementation, the effectiveness of the alternative to manage such risks.

Implementability = The technical difficulty of designing, constructing, and otherwise implementing the alternative in a reliable and effective manner, regardless of cost, the availability of necessary off-site facilities, services, and materials, administrative and regulatory requirements, scheduling, size, and complexity, monitoring requirements, access for construction operations and monitoring (this may require cooperation of property owners other than the person conducting the cleanup), and integration with existing facility operations and other current or potential remedial actions.

N = no.

NA = not applicable.

Y = yes.

[a] Million dollars per total weighted degrees of benefit.

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