May 2019
Shelton Harbor Sediment Cleanup Unit
Oakland Bay and Shelton Harbor Sediments Cleanup Site (Cleanup Site ID: 13007)

Shelton Harbor Interim Action
Basis of Design Report
Addendum No. 1

Prepared for Simpson Timber Company

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Prepared for
Simpson Timber Company
1305 5th Avenue, Suite 2700
Seattle, Washington 98101

Prepared by
Anchor QEA, LLC
1201 3rd Avenue, Suite 2600
Seattle, Washington 98101

Project Number: 110008-01.03
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ABBREVIATIONS

µg/kg	micrograms per kilogram
Addendum 1	*Shelton Harbor Interim Action Basis of Design Report Addendum No. 1*
BODR	*Shelton Harbor Interim Action Basis of Design Report*
cm	centimeter
cPAH	carcinogenic polycyclic aromatic hydrocarbon
Ecology	Washington State Department of Ecology
H:V	horizontal to vertical
H_2S	hydrogen sulfide
IAP	*Shelton Harbor Interim Action Plan*
mg/kg	milligrams per kilogram
MLLW	mean lower low water
ng/kg	nanograms per kilogram
NWP	Nationwide Permit
OC	organic carbon
OMMP	Operations, Maintenance, and Monitoring Plan
RAL	remedial action level
SCL	Sediment Cleanup Level
SCU	Sediment Cleanup Unit
Season 1	2018 through 2019 in-water construction season
Season 2	2019 through 2020 in-water construction season
Simpson	Simpson Timber Company
SMA	sediment management area
SMS	Sediment Management Standards
SWAC	surface weighted average concentration
TBT	tributyltin
TEQ	toxic equivalence quotient

1 Introduction

The *Shelton Harbor Interim Action Basis of Design Report* (BODR; Anchor QEA 2018a) presents the Washington State Department of Ecology (Ecology)-approved engineering basis of design for cleanup of the northern portion of the Shelton Harbor Sediment Cleanup Unit (SCU) within the Oakland Bay and Shelton Harbor Sediments Cleanup Site (Ecology Cleanup Site ID 13007; Figures 1 and 2). The interim cleanup actions described in the BODR, consisting of removal of creosote-treated piling and placement of engineered caps, were completed during the 2018 through 2019 in-water construction season (Season 1) by Simpson Timber Company (Simpson). Simpson is now moving forward with additional interim cleanup actions within the southwestern portion of the SCU, with construction targeted for the 2019 through 2020 in-water construction season (Season 2). The Season 2 cleanup area is referred to as sediment management area (SMA)-3 in the *Shelton Harbor Interim Action Plan* (IAP; Anchor QEA 2018b). This *Shelton Harbor Interim Action Basis of Design Report Addendum No. 1* (Addendum 1) summarizes the elements of the BODR, describes how the design criteria apply to SMA-3, and modifies design criteria for SMA-3 as appropriate. For additional regulatory, permitting, and general site background, see BODR Sections 1.0 and 1.1.

The rest of this Addendum 1 consists of the following sections:

- Section 2: Development of SMA-3 Interim Action Capping Areas
- Section 3: Summary of BODR Design and Applicability to SMA-3
- Section 4: References

Additional detail is presented in the following appendices:

- Appendix A: Pre-Remedial Design Investigation Data Report Addendum No. 1
- Appendix B: Water Quality Monitoring Plan Addendum No. 1
- Appendix C: SMA-3 Drawings

2 Development of SMA-3 Interim Action Capping Areas

2.1 Cleanup Standards and Remedial Action Levels

Consistent with Sediment Management Standards (SMS; Washington Administrative Code 173-204) requirements, the objective of the SMA-3 interim action is to achieve site-specific cleanup standards (i.e., cleanup levels at the point of compliance) throughout the Shelton Harbor SCU within 10 years following completion of remedial construction.

The cleanup standards set forth in the IAP were developed for benthic toxicity, dioxin/furan toxic equivalence quotient (TEQ), carcinogenic polycyclic aromatic hydrocarbon (cPAH) TEQ, copper, and tributyltin (TBT) (Table 1). The vertical point of compliance is the biologically active zone, identified as the upper 10 centimeters (cm) of sediment. Horizontally, compliance is measured based on the exposure area consistent with the exposure pathway for each contaminant. For benthic toxicity, copper, and TBT, compliance is measured based on point concentrations for protection of the benthic community. For dioxin/furan TEQ and cPAH TEQ, compliance is measured based on the SCU-wide surface weighted average concentration (SWAC) for protection of human health and upper-trophic-level wildlife.

Table 1
Shelton Harbor SCU Cleanup Levels, Points of Compliance, and Remedial Action Levels for SMA-3

Site-Specific Sediment Action Levels	Toxicity from Wood Debris Degradation	Dioxin/Furan TEQ ng/kg	cPAH TEQ µg/kg	Copper mg/kg	TBT mg/kg OC
Sediment Cleanup Level (SCL)	SMS Bioassay Criteria[a]	19[b]	52[b]	390[a]	7.5[a]
Post-Construction Target Concentration[c]	Not Targeted by the Interim Action[e]	25[c]	Not Calculated		
Remedial Action Level (RAL) for SMA-3[d]	Not Targeted by the Interim Action[e]	73	Not Required	Not Required (no exceedances)	

Notes:

a. Sample-specific point of compliance in the top 10 cm
b. SWAC-based point of compliance in the top 10 cm
c. Target concentration required to meet the SCL 10 years following construction
d. RALs are designed to be met in sample-specific point locations in the top 10 cm
e. Toxicity exceedances outside of the SMA-3 cap footprint (e.g., at stations SH-13A and SH-19) will be resampled and evaluated as part of the SCU-wide remedial investigation/feasibility study

For copper, TBT, and cPAHs, no remedial action levels (RALs) are necessary for SMA-3 because no exceedances of cleanup levels for these contaminants remain in this area. For benthic toxicity, two sampling stations near SMA-3 (SH-13A and SH-19) exceeded SMS biological criteria during 2017 that were not associated with chemical concentration exceedances. Because sediment profile imaging and visual characterization data revealed that surface sediments in and around SMA-3 contain relatively little wood debris (less than 2% by volume) and are well oxygenated with healthy benthic communities, remediation of benthic toxicity from wood debris degradation is not targeted by this interim action. Stations SH-13A and SH-19 will be resampled and evaluated as part of the SCU-wide remedial investigation/feasibility study to be initiated after completion of interim actions.

A RAL is the chemical concentration above which cleanup action is needed for the overall SCU to meet the SWAC-based cleanup level. For dioxin/furan TEQ, a RAL was calculated as the point-based concentration that will achieve the sediment cleanup level (SCL) throughout the SCU within 10 years following completion of remedial construction. As discussed in Section 2.2, a dioxin/furan RAL of 73 nanograms per kilogram (ng/kg) TEQ is projected to achieve a post-construction SWAC of 25 ng/kg TEQ throughout the SCU, which in turn is projected to be further reduced to 19 ng/kg TEQ following 10 years of post-construction natural recovery. Note that the dioxin/furan TEQ RAL in the northern portion of the SCU (i.e., for Season 1 work) was developed to meet the SCL in a portion of the SCU immediately following construction so that the cleanup would integrate with ongoing habitat restoration work in SMA-1. The RAL for SMA-3 is different (i.e., allowing for 10 years of post-construction natural recovery) consistent with the different land uses and other requirements in the two interim action areas.

2.2 SEDCAM Natural Recovery Model

Ecology's SEDCAM natural recovery model was used to estimate the post-construction SWAC that will meet the dioxin/furan SCL within 10 years following completion of construction. SEDCAM is a one-dimensional analytical model that projects changes in surface sediment concentrations over time based on measured site-specific conditions. The model equation (Equation 1) is as follows:

Equation 1

$$C_t = C_d \cdot \left[1 - e^{\frac{-Rt}{B}}\right] + C_i \cdot e^{\frac{-Rt}{B}}$$

The variables and site-specific input values are as follows:

C_t	=	surface sediment dioxin/furan concentration at time t, which in this application is the SCL of 19 ng/kg TEQ (SCU SWAC basis)
C_d	=	dioxin/furan concentration in newly deposited sediment, which in this application is the natural background concentration of 4 ng/kg TEQ (Anchor QEA 2018b)
C_i	=	the initial post-construction dioxin/furan concentration in surface sediment, calculated using the SEDCAM model as 25 ng/kg TEQ (SCU SWAC basis)
t	=	time, which in this application is 11 years, including 1 year of design/construction and 10 years of follow-on post-construction natural recovery
R	=	net sedimentation rate based on site-specific radioisotope dating, which in this application is the Shelton Harbor subtidal area average of 0.30 cm/year (Anchor QEA 2018b)
B	=	depth of the biologically active zone, which in Shelton Harbor is 10 cm (Anchor QEA 2018b)

As described in Equation 1, the SEDCAM model projected that an initial dioxin/furan surface sediment concentration (C_i; SCU SWAC basis) of 25 ng/kg TEQ would achieve the 19 ng/kg TEQ within 10 years following the completion of remedial construction.

2.3 Pre-Design Investigation Results and Capping Area Determination

The RAL for dioxin/furan TEQ was determined by first developing an interpolated dioxin/furan TEQ surface for surface sediments (Figure 3). Because the Season 1 capping areas have already been remediated, these areas currently have low dioxin/furan TEQ levels (assumed to be 2.5 ng/kg; 1/2 of the practical quantitation limit), consistent with non-detect concentrations in quarry sand used for placement. Next, a "hill-topping" analysis was conducted in which interpolated surface sediment concentrations in the Shelton Harbor SCU were ranked from highest to lowest, and the areas with the highest values were sequentially replaced with post-remedy "clean" sediment (again, at 1/2 of the practical quantitation limit) until the SWAC concentration was reduced to 25 ng/kg TEQ. The original data used for the hill-topping analysis is presented in Appendix A of the BODR (Anchor QEA 2018a). The hill-topping calculations revealed that a dioxin/furan TEQ RAL of approximately 73 ng/kg would achieve a dioxin/furan surface sediment SWAC (C_i) of 25 ng/kg TEQ across the Shelton Harbor SCU immediately after completion of SMA-3 remedial construction.

To better delineate the RAL exceedance area in SMA-3, the existing SCU dataset was augmented with two previously archived samples (SMA3-SG12 and SG-13). Laboratory results for these two samples are presented in Appendix A. The RAL exceedance area and capping extent is shown in Figure 3 and in the drawing set (Appendix C). The offshore boundaries of the SMA-3 cap were delineated based on the interpolated footprint of sediment exceeding the dioxin/furan RAL of 73 ng/kg TEQ. The boundaries were squared off for constructability such that the cap footprint extended beyond the interpolated footprint. The northwestern extent of the cap coincides with a historical dock structure.

Along the shoreline, the cap was extended up the bank to the extent of soft sediment, estimated as the point where the bank becomes steeper than a 6 horizontal to 1 vertical (6H:1V) slope. Above that point, the bank becomes riprap, gravel, or bulkhead with characteristic low sediment contaminant concentrations. The elevation of the shoreline extent of the cap ranged from +2 feet mean lower low water (MLLW) to +10 feet MLLW, depending on the location along the shoreline.

As discussed in the BODR, post-construction monitoring of interim action caps will include sampling and chemical analysis of surface sediments within the capping area to verify cap protectiveness and to verify that SWAC objectives throughout the SCU have been achieved (Table 1). Contingency actions will be performed as needed based on the results of the monitoring. A post-construction Operations, Maintenance, and Monitoring Plan (OMMP) describing long-term physical and chemical monitoring and potential contingency measures will be prepared as part of the interim action construction completion report.

2.4 Wood Debris

The IAP and BODR summarize wood debris percentages in surface sediment samples, as well as surface sediment porewater hydrogen sulfide (H_2S) concentrations within SMA-3. As discussed earlier, 2017 sediment profile imaging and visual characterization data reveal that surface sediments in SMA-3 have less than 2% wood debris by volume and suggest that surface sediments in this area of Shelton Harbor are well oxygenated and indicative of healthy benthic communities. Relatively low (generally undetected) 2018 porewater H_2S concentrations in SMA-3 corroborated these findings. Thus, wood debris and toxicity from wood debris degradation is not targeted by this interim action. Nevertheless, the granular cap to be placed in SMA-3 will provide an additional barrier between the biologically active zone at the top of the cap and underlying sediments below the cap, further reducing porewater H_2S concentrations.

3 Summary of BODR Design and Applicability to SMA-3

This section summarizes the BODR design criteria (Anchor QEA 2018a) and discusses the applicability of these criteria to SMA-3.

3.1 Capping Design

As discussed in the BODR, the Season 1 cap design was developed considering the following:

- Chemical isolation and bioturbation
- Erosion protection
- Consolidation (geotechnical evaluation)
- Cap monitoring and maintenance

The major cap design criteria (i.e., grain size, thickness, and maximum slope angle requirements) in the BODR have not been modified for SMA-3 because of the similarity in the conditions in the capping areas. The total cap thickness is 24 to 30 inches considering armoring, chemical isolation, winnowing of fine-grained material, and an overplacement allowance. The following text documents the review of the BODR criteria as applied to SMA-3.

For chemical isolation, the assumptions incorporated into the BODR contaminant transport model (e.g., relatively low total organic carbon [OC] content in sand/gravel cap materials [0.1%], high advection rate [Darcy flux (1 cm per day)], and an underlying sediment dioxin/furan concentration of 287 ng/kg TEQ) are conservative relative to the conditions in SMA-3 (i.e., the assumptions would tend to overestimate the rate of contaminant breakthrough). Therefore, the BODR chemical isolation criteria apply to SMA-3.

The erosion protection analysis considered wind-wave forces, surface water flows, and vessel scour, as described in the following paragraphs.

In the wind-wave analysis, the wind direction and fetch distance used in the BODR analysis also apply to SMA-3. SMA-3 has more subtidal area than the Season 1 capping areas; subtidal areas (e.g., below -5 feet MLLW) experience reduced wind-wave forces because there are few to no breaking waves. Therefore, there is no thickened edge to the SMA-3 cap as there was for the Season 1 capping areas, and the cap thickness is conservative in deeper areas.

The Season 1 cap design considered surface water flows from Shelton Creek and an outfall. However, there are no known surface water flows or active outfalls in the SMA-3 capping footprint, so no design details were included to account for surface water flows.

In addition, the potential for vessel scour is similar in both areas. While SMA-3 is adjacent to a historical dock, the dock is no longer in use, and there are no plans to redevelop the dock in this location.

Like the chemical isolation and the wind-wave analysis, the BODR geotechnical analysis also applies to SMA-3 because sediments have similar geotechnical characteristics throughout Shelton Harbor. As discussed in the BODR, the geotechnical engineering design addresses placing aggregate material over native soft sediments. Placing material in a controlled manner ensures the stability of underlying soft sediment, minimizing the potential for mud wave formation and enhancing the strength of the subgrade sediments. The shear strength and compaction of underlying native sediments were evaluated in BODR Appendix B, with the finding that placing material in maximum 18-inch-thick lifts will minimize the potential for disturbance of native material.

Finally, cap monitoring and maintenance are incorporated into the SMA-3 cap design, which will be detailed in the forthcoming OMMP.

3.2 Pile Removal Design

There is no pile removal within SMA-3.

3.3 Site Preparation, Staging/Stockpiling Areas, Other Construction Elements, Compliance Monitoring, Construction Quality Assurance Plan, and Water Quality Monitoring Plan

All construction criteria identified in the BODR (including appendices) apply to SMA-3. The same contractor who performed the Season 1 work (Quigg Bros, Inc.) will perform the SMA-3 work, subject to final contract negotiations with Simpson. Construction will proceed under the same permits, contractor work plans, and means and methods (including transload procedures) as the Season 1 work.

As described in the BODR, the work has been permitted under a Nationwide Permit (NWP) 38 administered by U.S. Army Corps of Engineers and meets the requirements of SMS as well as other state and local applicable or relevant and appropriate requirements. The NWP 38 application included the SMA-3 capping area, and a pre-construction notification has been submitted that applies to the SMA-3 work as a continuation of the same project. The NWP 38 is valid until March 18, 2022.

The transload site complies with an Ecology Construction Stormwater General Permit and a site-specific, Ecology-approved Stormwater Pollution Prevention Plan that will remain valid throughout the duration of the project.

Contractor work plans have been developed to meet the requirements of the project Specifications included in the BODR and have been reviewed by Ecology. Contractor work plans include the Construction Quality Control Plan; Environmental Protection Plan; Contractor Health and Safety Plan; Spill Prevention, Control, and Countermeasures Plan; Survey Control Plan; Temporary Facilities and Control Plan; and Waste Management Plan.

3.3.1 Marine Water Quality Protection and Water Quality Monitoring

The SMA-3 work will comply with Sections 5.1 and 6.1 of the BODR. Appendix B presents the Water Quality Monitoring Plan Addendum No. 1, which provides example water quality monitoring station locations relevant to the SMA-3 cap configuration. The water quality monitoring requirements (e.g., compliance distances, exceedance procedures, and monitoring frequencies) will be the same for Season 1 and 2 work. Additional best management practices will be added to the contractor Water Quality Work Plan (to be reviewed by Ecology) to further address the potential for sediment to be disturbed by equipment or propeller wash (e.g., limited vessel maneuvering in shallow water).

3.3.2 Upland Staging and Stockpiling Areas, Temporary Site Controls, Construction Stormwater Management

The SMA-3 work will comply with Sections 5.2 through 5.4 of the BODR. The upland transload facility operations from Season 1 will be replicated for SMA-3 work. The Simpson Former Log Handling Facility will be used for stockpiling clean sand and transloading to a material barge. Construction stormwater management will be performed under the same Construction Stormwater General Permit obtained by the contractor for Season 1 work in accordance with their site-specific Stormwater Pollution Prevention Plan. Temporary site controls implemented in Season 1 will be replicated for SMA-3 work.

3.3.3 In-Water Work Window, Hours of Operation, and Haul Routes

The SMA-3 work will comply with Sections 5.5 through 5.7 of the BODR. The in-water work window for this project is July 16 to February 14.

City of Shelton ordinances (Chapter 9.18) require no construction noise between 10:00 p.m. and 7:00 a.m. on weekdays and 10:00 p.m. and 9:00 a.m. on weekends. If it becomes necessary to work later or earlier than these hours to accommodate project schedule or tidal factors, Simpson will work with the City of Shelton to determine potential mitigating measures.

Haul routes have been developed by Simpson. The City of Shelton has determined that a Right of Way – Heavy Haul Permit is not required for this interim action.

3.3.4 Construction Quality Assurance Monitoring

The SMA-3 work will comply with Section 6.2 and Appendix D of the BODR. Cap material thickness will be verified with the following four lines of evidence:

- The contractor will be required to track the volume and/or weight of cap material placed daily and make this information available to Simpson as part of their daily reports.
- The contractor will be required to conduct bathymetric surveys before and after cap construction to assess material coverage across the area.

- For in-water placement, the contractor will use an electronic tracking method (e.g., bucket maps) to assess material coverage across the placement area. The contractor will be required to make this information available to Simpson.
- Simpson will perform cap probing and/or coring, if needed, to verify that the cap has been placed to the specified thickness.

During the Season 1 work, cap probing and electronic tracking were the most reliable methods for cap thickness verification, due to the compaction of underlying sediment during cap placement, which affected bathymetric survey results.

3.4 Completion of Season 1 Capping Area

A portion of the Season 1 Capping Area B was not completed (approximately 0.9 acre) in order to provide enough water depth for navigation during transloading for Season 2 work. The area remaining to be capped is shown in Figure 3 of Anchor QEA's March 11, 2019 memorandum to Ecology (Anchor QEA 2019). The area will be capped as a final project phase after the SMA-3 cap has been constructed and transloading and transport to SMA-3 is no longer needed.

As part of final construction quality assurance monitoring, the monitoring team will ensure that the offshore low-lying sheetpile wall within Season 1 Area B is fully covered by placement material. If sheetpile is showing, additional material will be added to cover the sheetpile.

3.5 Demobilization and Project Closeout

After the cap thickness has been verified, the contractor will demobilize from the SCU. The transload site will be restored to pre-construction conditions per the Specifications. Temporary piling will be removed. Demobilization requirements in the Specifications include the following:

- Remove from the work site all tools, surplus materials, equipment, scrap, debris, and waste.
- Clean exterior exposed-to-view surfaces.
- Regrade unpaved staging areas as necessary to restore original grades and a level area.
- Remove waste, debris, and surplus materials from the work site. Clean grounds; remove stains, spills, and foreign substances from paved areas and sweep clean. Rake other exterior surfaces clean.

3.6 Implementation Schedule

The capping activities described in this Addendum 1 are anticipated to be completed in the Season 2 in-water construction season. The in-water work windows will govern most work activities. However, some work within the site may be appropriately performed prior to the opening or after the closure of these in-water work windows, such as preparation of upland staging and stockpile areas. In-water capping is expected to require several months of construction.

4 References

Anchor QEA, 2018a. *Shelton Harbor Interim Action Basis of Design Report.* Shelton Harbor Sediment Cleanup Unit. Oakland Bay and Shelton Harbor Sediments Cleanup Site (Cleanup Site ID: 13007). Prepared for Simpson Timber Company and Washington State Department of Ecology. July 2018.

Anchor QEA, 2018b. *Shelton Harbor Interim Action Plan.* Shelton Harbor Sediment Cleanup Unit. Oakland Bay and Shelton Harbor Sediments Cleanup Site (Cleanup Site ID: 13007). Prepared for Simpson Timber Company and Washington State Department of Ecology. January 2018.

Anchor QEA, 2019. Memorandum to: Joyce Mercuri, Washington State Department of Ecology. Regarding: Northern Shelton Harbor Interim Action: Water Quality Monitoring and Cap Construction Status. Oakland Bay and Shelton Harbor Sediments Cleanup Site (Cleanup Site ID: 13007). March 11, 2019.

Figures

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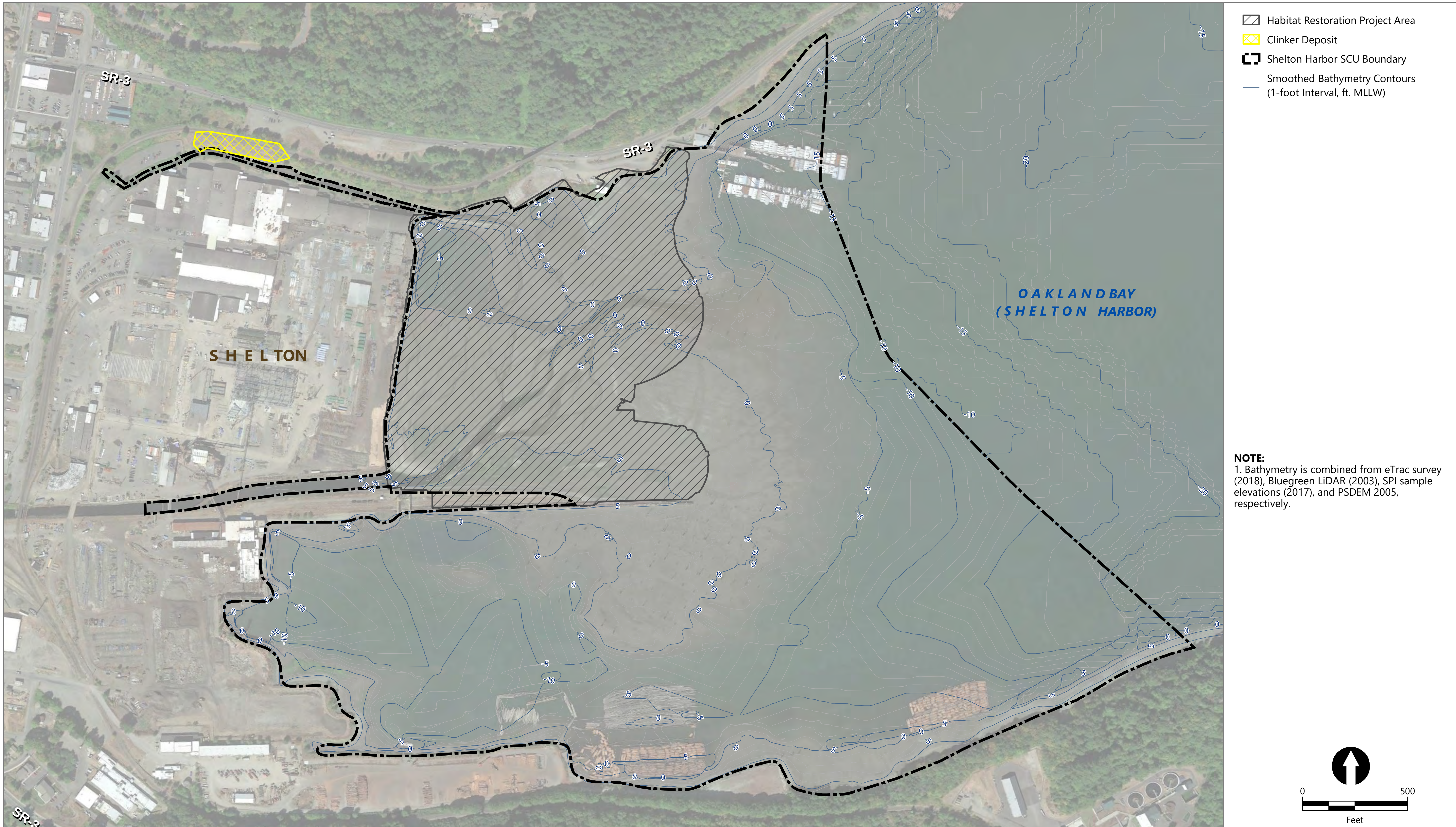
Figure 1
Oakland Bay and Shelton Harbor Sediments Cleanup Site
Shelton Harbor Interim Action Basis of Design Report Addendum No. 1
Oakland Bay and Shelton Harbor Sediments Cleanup Site



NOTE:
1. Bathymetry is combined from eTrac survey (2018), Bluegreen LiDAR (2003), SPI sample elevations (2017), and PSDEM 2005, respectively.

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Figure 2
Shelton Harbor Sediment Cleanup Unit and Bathymetry
Shelton Harbor Interim Action Basis of Design Report Addendum No. 1
Oakland Bay and Shelton Harbor Sediments Cleanup Site

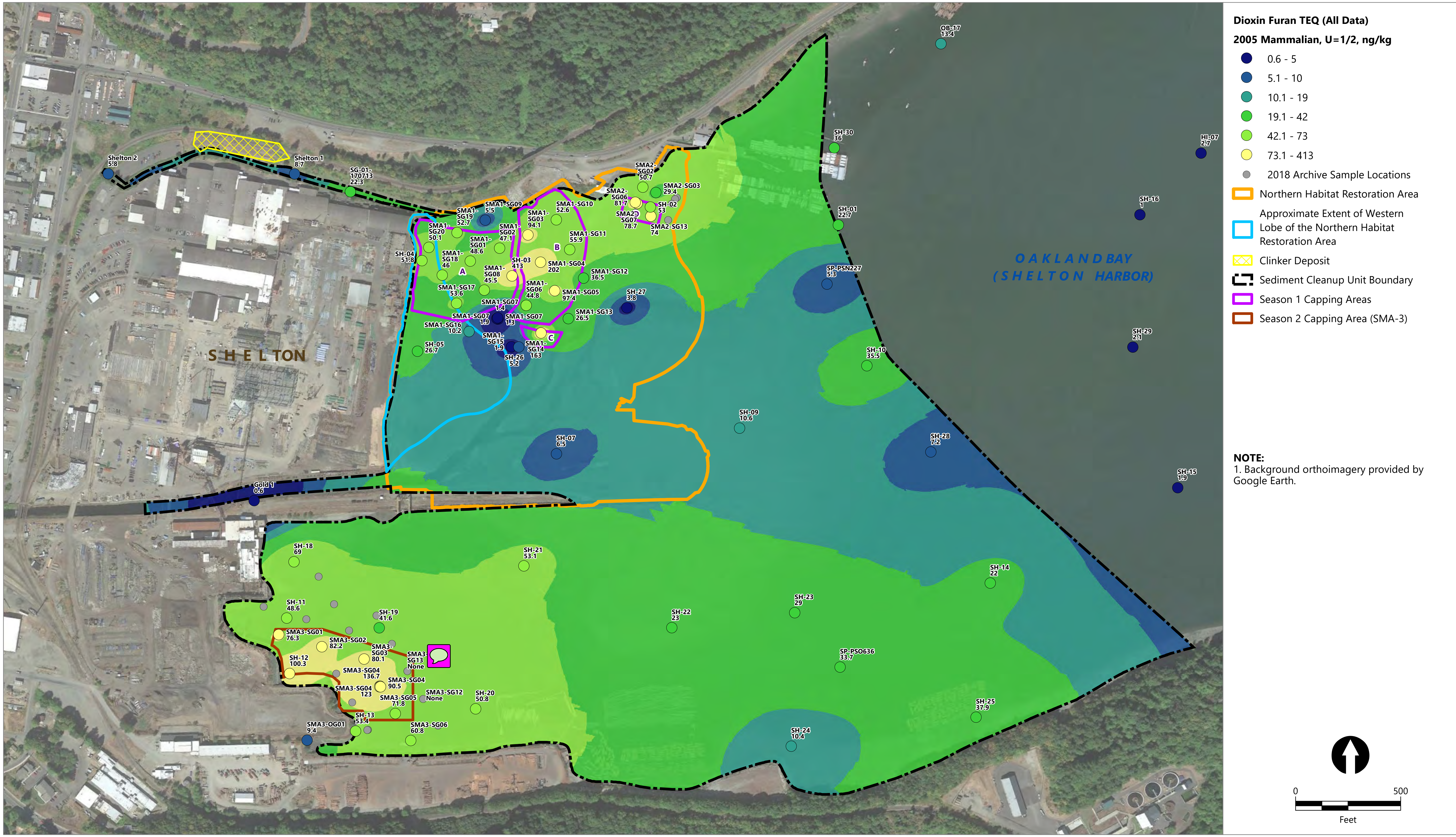

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Figure 3
Interim Action Capping Areas
Shelton Harbor Interim Action Basis of Design Report Addendum No. 1
Oakland Bay and Shelton Harbor Sediments Cleanup Site

Appendix A
Pre-Remedial Design Investigation Data Report
Addendum No. 1

Table A-1
Archived Sample Stations and Dioxin/Furan Results

Station	PDI-SMA3-SG12	PDI-SMA3-SG13
Collection Date	4/26/2018	4/26/2018
Analysis Date	4/2/2019	4/2/2019
X	996392.264	996317.023
Y	693858.527	693990.551
Dioxin/Furan (ng/kg)		
1,2,3,4,6,7,8-HpCDD	**1,110**	**1,440**
1,2,3,4,7,8-HxCDD	**11.5**	**15.5**
1,2,3,6,7,8-HxCDD	**45.2**	**64**
1,2,3,7,8,9-HxCDD	**20.4**	**29.8**
1,2,3,7,8-PeCDD	**8.21**	**11.6**
2,3,7,8-TCDD	**1.22**	**1.76**
OCDD	**10,600 J**	**12,100 J**
1,2,3,4,6,7,8-HpCDF	**352**	**461**
1,2,3,4,7,8,9-HpCDF	**16.8**	**21.5**
1,2,3,4,7,8-HxCDF	**24**	**35.1**
1,2,3,6,7,8-HxCDF	**8.54**	**10.5**
1,2,3,7,8,9-HxCDF	**3.85**	**4.89**
1,2,3,7,8-PeCDF	**4.25**	**5.85**
2,3,4,6,7,8-HxCDF	**6.21**	**8.46**
2,3,4,7,8-PeCDF	**5.66**	**7.91**
2,3,7,8-TCDF	**4.85**	**6.86**
OCDF	**1,350**	**1,650**
Total HpCDD	**2,600**	**3,200**
Total HxCDD	**842**	**1,150**
Total PeCDD	**340**	**470**
Total TCDD	**324**	**569**
Total HpCDF	**1,390**	**1,680**
Total HxCDF	**468**	**787**
Total PeCDF	**127**	**178**
Total TCDF	**121**	**144**
Dioxin/Furan TEQ (WHO2005; U=1/2)	**42.1 J**	**56.7 J**

Notes:
bold: result is detected
J: result is estimated
Horizontal datum is Washington State Plane South, North American Datum of 1983, U.S. Feet.
Elevation is mean lower low water (feet).
1. Results are undergoing validation and will be uploaded to the Washington State Department of Ecology's Enviromental Management System when complete.
ng/kg: nanograms per kilogram dry weight
PDI: pre-remedial design investigation
SMA: sediment management area
TEQ: toxicity equivalence quotient

Appendix B
Water Quality Monitoring Plan
Addendum No. 1

NOTES:

1. The location of the Background Station will be determined in the field based on the following considerations:
   - The location should be unaffected by the active work.
   - The location should be of a similar water depth to the compliance monitoring station to the extent practicable.
2. Background orthoimagery provided by Google Earth.

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Figure B-1
Water Quality Monitoring Station Diagram
Appendix B: Water Quality Monitoring Plan Addendum No. 1
Oakland Bay and Shelton Harbor Sediments Cleanup Site