STATE OF WASHINGTON
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October 23, 2026

Brandon Smith
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Re: Comments on Supplemental Remedial Investigation Work Plan

- **Site Name**: Hardel Mutual Plywood
- **Site Address**: 1210 W Bay Dr NW, Olympia, Thurston County, WA 98502
- **Cleanup Site ID:** 3704
- **Facility/Site ID:** 75128579
- **Agreed Order No.:** DE 21726

Dear Brandon Smith:

Thank you for submitting the Supplemental Remedial Investigation (RI) Work Plan (plan) to the Washington State Department of Ecology (Ecology).[1] Please revise the plan to incorporate the following comments:

1. **Section 1.2:** Intertidal and subtidal areas are mentioned in this section. Add the definition of intertidal such as the sediment surface or mudline that is higher than -4 feet mean lower low water (MLLW) and lower than +16 feet MLLW.

2. **Section 2.2, Overview of Operational History, last paragraph:** Please replace "there is no evidence based on historical records" with a statement that historical records are limited regarding the type of hog fuel used by Hardel and that there are no records of the type of hog fuel used by pre-Hardel operators. What historical records are available to support statement (1) that the Hardel boiler fuel was most likely not salt-laden and statement (2) that any burning of salt-laden wood waste was de minimus? These statements need to be reworded if there are no historical records in support. Regarding

[1] PIONEER Technologies Corporation, 2026. Supplemental Remedial Investigation Work Plan, Hardel Mutual Plywood Corporation Site. January.

statement (4), additional data gap sampling is needed to complete the investigation of dioxin/furan soil concentrations at the Site.

3. **Section 2.3, page 2-4, 2nd paragraph:** Ecology does not agree that current groundwater monitoring results "remain valid for current conditions." The soil-to-groundwater pathway cannot be eliminated from consideration without the collection of additional groundwater data. Ecology does not agree that the 2020-2021 quarterly groundwater data are sufficient because only the May 5, 2021 sampling event was conducted "during a synoptic event near low tide." Therefore, additional quarterly sampling events are needed because it is uncertain if the data are representative of groundwater without significant contribution from surface water. Also, the May 5, 2021 event did not include samples from wells MW-101 and -104. A tidal study will need to be performed before additional groundwater data are collected.

4. **Tidal Study Requirement:** As mentioned above, a 15-day tidal study similar to Opatz and Dinicola (2018) shall be performed to determine which wells experience tidal influence and the optimal time for groundwater sampling in tidally affected wells.[2] The tidal study shall include:

    a. Determination of the optimal time during the semi-diurnal and the neap-spring tidal cycles to sample groundwater to minimize contributions from Budd Inlet seawater.

    b. Collection of vertical profiles of specific conductance in each well prior to deploying downhole instruments to determine if a freshwater/saltwater interface is present in the well.

    c. Collection of groundwater levels and specific conductance in shoreline and/or tidally influenced groundwater monitoring wells along with marine water-levels (tidal levels) in Budd Inlet. These shall be measured at regular intervals during a period that includes neap and spring tides and during the period that king tides occur. King tides typically occur in the winter months in the Pacific Northwest (between November and February), with the most extreme between December and January.

[2] Opatz, C. and Dinicola, R. 2018. Analysis of Groundwater Response to Tidal Fluctuations, Operable Unit 2, Area 8, Naval Base Kitsap, Keyport, Washington. U.S. Geological Survey, Open-File Report 2018-1082.

d. Determination of lag times between recorded minimum tide level and minimum groundwater levels during the tidal cycles.

e. The revised plan shall include the details of how the tidal study will be performed and the schedule.

5. **Section 2.5, Key Transport and Exposure Pathways:** Please clarify that potential exposure pathways include fish and shellfish consumption, clamming, and beach play.

6. **Section 3.2, Soil Direct Contact Results and Discussion, 2nd bullet:** Delete this bullet because the commercial/industrial land use scenario is not consistent with the future land use at the Site. See also comment 54a below.

7. **Sections 3.3, Soil-to-Groundwater Results and Discussion and 3.4, Groundwater Results and Discussion:** Please revise to incorporate the above comments.

8. **Section 3.3, 3rd paragraph, 1st sentience:** Delete "and do not pose a significant concern." The extent of all screening level and/or preliminary cleanup levels need to be determined during the Supplemental RI.

9. **Section 3.4, Groundwater Results and Discussion:** The need for "a more comprehensive analytical list" is not the only reason that groundwater monitoring is necessary. See also above comments.

10. **Section 3.5, 4th paragraph:** Measured pressure differentials are mentioned but these data are not available in any reports. Please add these data to the plan and add a brief description of how these measurements were collected including the subsurface probe depth. Based on review of the available data, Ecology agrees that no additional methane gas sampling is necessary.

11. **Page 3-5, 1st full paragraph, 1st sentence:** Insert "surface" before "sediment" because deeper sediment samples were collected at other locations in the Hardel vicinity.

12. **Section 3.6, page 3-5, 4th bullet, last sentence:** The property boundary does not define the Site boundary. Please reword accordingly.

13. **Section 3.6, page 3-5:** Please also add a brief discussion in the bullets of the existing sediment data for arsenic, cadmium, and mercury.

14. **Section 3.7.1, 2nd bullet:** Add current trespassers because this pathway is potentially complete.

15. **Section 3.7.1, 6th bullet:** Remove the statement that inhalation of indoor air vapors is limited to the first floor of occupied spaces. While the risk will be highest on the first floor, there is also risk to upper levels with air movement upwards from the first floor.

16. **Section 3.7.2, 2nd bullet:** Remove "current trespassers" and change "do" to "will".

17. **Section 3.7.2, 3rd bullet:** Remove "essentially impossible" and replace with "unlikely".

18. **Section 4.2, 1st sentence:** Add "and/or hog fuel burners operated by pre-Hardel wood mill facilities (such as McCleary Timber Company)" after "the former Hardel boiler". Also, the Refuse Fire Area is a potential source of dioxins/furans. The area east of proposed soil sample locations B303 and B304 also needs to be sampled for the presence of ash and other contaminants. Part of this area was originally under water and later filled in (see notched areas on the 1924 Sanborn map below and on the 1968 Sanborn map).

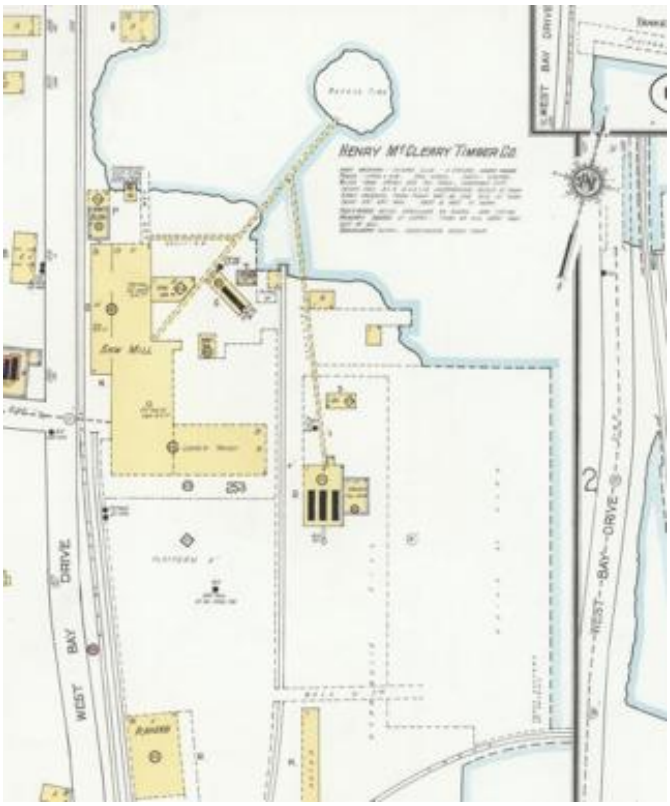
19. **Section 4.3:** It is Ecology's opinion that additional data need to be collected to support the statement that the groundwater screening level exceedances in borings B5 and B6 are attributable to the Reliable Steel site.

20. **Section 4.4, last paragraph:** Ecology agrees that additional investigation is warranted to document the extent of wood waste debris. However, the wood waste investigation extent is not limited to the Hardel Property because the Site area is not limited to property boundaries but is the area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located from historical facility operations. Additionally, the wood waste investigation area shall include the area surrounding the entire length of the former logway rail spur because this area was part of the original facility.

21. **Section 5.1.1, Comprehensive Site Inspection and Figure 15:**

    a. Add the historical McCleary Timber Company Refuse Fire Area as a Site inspection key area. The location of the Refuse Fire Area shown on Figures 4, 11-15, and 18 does not appear to match the location shown on Sanborn Fire Insurance Maps (see below figure). The Sanborn Maps show this area further offshore. Add to the plan the task of carefully inspecting the sediment surface to determine the historical footprint of the Refuse Fire Area. Sediment sample locations shall include at least two locations within the area footprint plus a minimum of four locations around the perimeter. Sediment samples shall also include locations along the conveyors that fed the Refuse Fire Area. Figure 3 from Tetra Tech (1999) shows an "area of old pilings" that may correspond to the Refuse Fire Area.[3] This piling area should be examined to see if this correspondence appears to be correct.

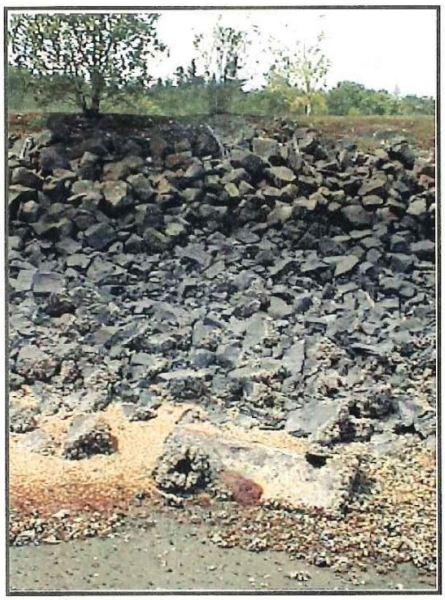
[3] Tetra Tech EM Inc. 1999. Phase I Environmental Site Assessment, Hardel Mutual Plywood Waterfront Property, 1210 N.W. West Bay Drive, Olympia, Washington. July.



Refuse Fire Area Location (from 1924 Sanborn Fire Insurance Map[4])

b. The empty 100- to- 200-gallon tank in the intertidal zone noted by Tetra Tech (1999) shall also be included as a site inspection key area (see below photo). If this tank cannot be visually located, then other methods (such as geophysical investigation) shall be used.

[4] Library of Congress Collection: https://www.loc.gov/collections/sanbornmaps/?fa=location:washington



View of empty storage tank and iron stained sediments in interidal zone.

[Above photo and caption from Tetra Tech (1999)]

c. The closed in place underground storage tank (UST) identified in Ecology's database (Tetra Tech, 1999) that might be located east of the former welding shop should be located. If this tank cannot be found by visual means, then other methods (such as geophysical investigation) shall be used. Soil samples should be collected from the vicinity of this tank.

22. **Section 5.1.3 and Figure 17, MiHPT Investigation Locations:**

a. Adjust the low level membrane interface hydraulic profiling tool (LL MiHPT) boring locations so that there are additional upgradient locations (west and northwest) of B6. Instead of adding additional locations, you may also consider rearranging the 17 locations (not counting the up to five contingency borings) on slightly increased spacing. See also below comment 27 regarding the requirement to use low level instead of standard MiHPT.

b. Will replicate logs be run as a quality control check? ITRC (2019) guidance states that replicate logs may be run every 10 to 20 locations to verify repeatability.[5]

[5] Interstate Technology Regulatory Council (ITRC), 2019. Implementing Advanced Site Characterization Tools, ASCT-1, December. https://asct-1.itrcweb.org/

These logs should be run with an approximate 3-foot offset from the original borehole for optimum results.

23. **Section 5.1.4, Groundwater Well Installation:**

    a. Groundwater samples need to also be analyzed for dioxins/furans because these constituents were previously detected in groundwater and will be included in the analyte list for seeps, stormwater catch basins, outfalls, and other features (Section 5.1.5).

    b. Add a new groundwater monitoring well on the shoreline, between MW-107 and MW-102, in the filled-in notched area (see above comment 18). Samples from this well will provide additional data downgradient of MW-101 and the boiler ash accumulation area and will provide information on fill characteristics in the notched area.

24. **Section 5.1.5, Sampling of Seeps, Stormwater Catch Basins, Outfalls, and Other Features:**

    a. Sample locations shall not only be "based on the results of the Site inspection" because the placement of clean recycled crushed concrete during the previous interim remedial action (Agreed Order DE 4108) may obscure relevant features (particularly catch basins). Historical maps (such as Tetra Tech [1999] Figures 3 and 4) and other information sources shall also be used to identify features for sampling. Excavation of the crushed concrete layer shall be performed as necessary to access sampling locations.

    b. Catch basin sample locations shall include the storm sewer grate by the railroad tracks, southwest corner of the site (see photo in Tetra Tech, 1999).

    c. Add volatile organic compounds (VOCs) to the analyte list so that it matches the analyte list for groundwater.

    d. Sample analyses shall include polychlorinated biphenyls (PCBs) as congeners by EPA Method 1668C.

25. **Section 5.1.6, Sediment Sampling and Wood Waste Characterization:** Ecology does not agree with several aspects of the proposed sediment sampling strategy. Please revise the plan to incorporate the following comments:

a. When selecting sediment sample locations, the guidelines in Section 4.4.1 of Ecology's Sediment Cleanup User's Manual (SCUM; Ecology, 2025) should be followed.[6]

b. There is documented hog fuel burner use at the Site by Hardel (newspaper account)[7] and previous operator (Henry McCleary Timber Co., 1924 Sanborn Fire Insurance Map). Hog fuel burners may have burned salt-ladden wood at some times, which is a source of dioxins/furans. Transport of dioxin/furan contamination from hog fuel may involve the following transport pathways. These pathways need to be included in the conceptual site model and evaluated during the sediment investigation:

    i. Direct atmospheric deposition on Budd Inlet

    ii. Indirect disposition in the uplands and subsequent delivery to the harbor as part of stormwater runoff and municipal effluent

    iii. Erosion/runoff of hog fuel burner ash during operations or because of previous facility fires

    iv. Incorporation of hog fuel burner ash into industrial process water and effluent

    v. Direct disposal of hog fuel ash into the harbor or from operations at the Refuse Fire Area northeast of the mill or from conveyors to this area. See above comments about additional Refuse Fire Area sample locations

c. One of the photographs in Tetra Tech (1999) shows a "view of iron-stained sediments and former dock facing north from southern property boundary." Add sediment sampling from this area. Analytes should include tributyltin (TBT), PCBs as congeners, total PCBs, dioxins/furans, conventional parameters, and the other Sediment Management Standards (SMS) sediment constituents.[8] The iron-stained sediments are located west of a former welding shop based on the 1946, 1947, and 1968 Sanborn fire insurance maps (Tetra Tech, 1999).

d. Another photograph in Tetra Tech (1999) shows a "view of old pilings in southeast portion of property and iron-stained sediments." Sediment samples should be collected from both the iron-stained sediments and within the area of

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[6] Ecology, 2025. Sediment Cleanup User's Manual (SCUM), Toxics Cleanup Program Publication No. 12-09-057, December.

[7] The Daily Olympian, 1969. Water Swamps Hardel Hog Fuel Blaze. Vol. 79, No. 98, July 10.

[8] See SCUM Table 8-1.

the pilings. A determination should also be made on whether or not the pilings contain creosote or not.

e. Sediment sample locations shall include the area near the empty 55-gallon drum visible on the riprap shown in a photo from Tetra Tech (1999).

f. **Sediment Sample Depths:** Ecology does not agree with the proposed sediment sampling depths of 0 – 0.5 feet below ground surface (bgs) for surface/biologically active zone (BAZ) samples and 0.5 – 2 feet for subsurface samples. Consistent with SCUM guidance, the depth of BAZ samples need to be 0 – 10 centimeters (cm). Likewise, subsurface samples need to include the 0 – 45 cm interval in the intertidal zone for evaluation of the beach play and clamming exposure pathway, plus deeper samples as needed for vertical extent of contamination.

g. The location of "remains of barges/scows" shown on Figure 4 was identified as an "area of old pilings" in Tetra Tech (1999). Please describe in more detail why it is believed that this area contains former barges/scows and whether or not there are also pilings in this area or if the pilings are in a separate area.

h. Sediment sample locations shall include the area adjacent to the abovementioned storage tank in the intertidal zone and on either side of the entire distance of the railroad spur.

i. **Outfall Sample Locations:** Sediment sample locations need to be located proximal to current and/or former outfalls and need to include potential tidal flow directions. Additional historical outfalls need to be added from the map in Tetra Tech (1999). Proposed sediment sample locations on Figure 18 are not sufficient for outfall sampling because they are much too far away (greater than 100 feet). See SCUM Appendix A for examples of outfall monitoring stations.

j. **Conventional parameters** are not defined. Revise to state that conventional parameters include: total organic carbon (TOC), total solids, total volatile solids (TVS), ammonia, and sulfides.

k. Ecology does not agree with the plan to only collect conventional parameters from samples that are being analyzed for chemical parameters. Ecology (2013) wood waste cleanup guidance outlines a tiered approach for wood waste investigations.[9] The guidance also notes that wood waste coverage of 25 percent or greater may adversely impact the benthic community and may need further investigation. Since significant wood waste has already been identified at the Site

[9] Ecology, 2013. Wood Waste Cleanup, Identifying, Assessing, and Remediating Wood Waste in Marine and Freshwater Environments, Toxics Cleanup Program Publication No. 09-09-044, September.

(Greylock Consulting, 2007), it is appropriate to use additional tiers beyond initial screening during wood waste sampling.[10] Revise the plan to state that conventional parameters shall also be analyzed from all wet sieve locations that have wood waste concentrations of greater than 25%. However, based on Ecology's experience at wood waste cleanups, finer textured wood waste may have greater ecological impact with less coverage or total wood waste percentage (Ecology, 2013). Therefore, for areas with more finely textured wood waste (such as small chips or sawdust), a smaller percentage (such as 5%) shall be used for the decision point for conventional parameter analysis to help determine potential impact.

l. **Wet sieve sample locations** for wood waste characterization need to include the following areas:

   i. North of the former log way at the north end of the former Henry McCleary Timber Company sawmill as shown on the above Sanborn Map.

   ii. Adjacent to the peeler at the north end of the facility shown on the 1968 Sanborn map.

   iii. Near the conveyor shown at the south end of the facility on Figure 4 (near proposed sample location SD-07).

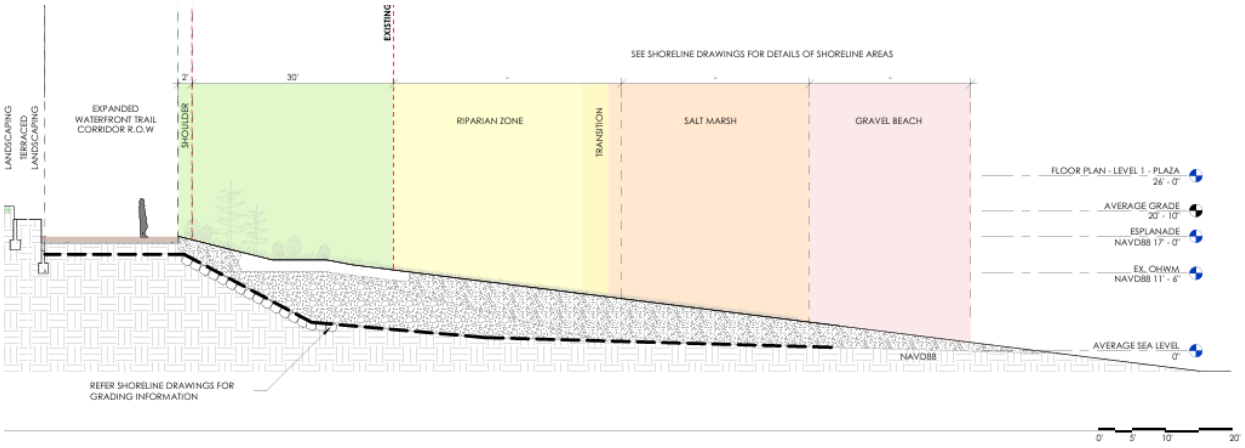
   iv. The following locations from the Remedial Investigation Report (Greylock Consulting, 2007) observed wood percentages of greater than 25 percent and up to 100 percent within the 0-10 cm depth interval: T-1.1, T-1.2, T-2.4 through T-2.9, T-2.11 through T-2.13, and T-2.16 through T-2.20. These locations shall be included in the wet sieve sample locations plus the following conventional analyses shall be performed: TOC, TVS, ammonia, and sulfides.

m. Add additional sediment sample locations in the intertidal zone, north and south of proposed sample location SD-01, north of POBI-SG-383, POBI-SVCI-467, and SD003, and throughout the Schneider Creek Delta to better characterize this area. Both surface and core samples need to be collected because carcinogenic polycyclic aromatic hydrocarbons (cPAHs) concentrations (160 micrograms per kilogram [µg/kg] @ 0-1.5 feet; 84.1 µg/kg @ 1.5-2.5 feet) and dioxins/furans concentrations (279 nanograms per kilogram [ng/kg] @ 3.5-4.5 feet) were measured at Port of Olympia sample location POBI-SVCI-467 (located just north

[10] Greylock Consulting LLC, 2007. Draft Remedial Investigation Former Hardel Plywood Site, 1210 West Bay Drive NW, Olympia, Washington. December 17.

of POBI-SG-383). The northern extent of cPAHs and dioxin/furans exceedances measured at POBI-SG-383 and -467 also need to be defined.

n. Sediment samples also need to be collected beyond the seaward edge of the proposed area of new beach fill for evaluation of BAZ sediment concentrations and the beach play and clamming exposure pathway (see below cross-section).[11] In the below figure, the heavy dashed line is the existing grade.



Cross-section of proposed development shoreline design (TAS, 2025).

o. **Bioassays:** Ecology does not agree with the proposed preselection of three bioassay locations (SD-02, SD-03, and SD-07). Bioassay locations should not be limited to a specific number in advance and need to be selected following an evaluation of chemical analyses results from the samples collected during this phase of work.

p. See comment below about the requirement to include analysis of PCBs as congeners.

q. **Page 5-3, Rationale for selecting wet sieve sample locations for additional analyses:** Revise the rationale to indicate that a **minimum** of six samples will be analyzed for SMS chemicals, total cPAHs, dioxins/furans, total PCBs, and PCBs as congeners, and bioassays. Include in the rationale that the sample selection process for additional analyses not just be based on the locations with the highest wood waste by volume but will also consider the physical nature (for example bark, chips, sawdust, chunks, or logs), extent of decomposition and

[11] From Sheet A29, West Bay Yards Schematic Design, Thomas Architecture Studios (TAS), July 25, 2025.

weathering and potential for flocculent characteristics, field observations, and the results of conventional parameters analyses.

r. **Total Petroleum Hydrocarbons (TPH):** TPH (diesel and heavy oil range) analyses shall be performed at sediment sample locations adjacent to outfalls, seeps, and TPH upland source areas and/or where field evidence (such as sheen, staining, or odor) suggests the presence of TPH. A TPH sediment screening level of 100 mg/kg shall be used (sum of TPH-diesel and heavy oil ranges).

26. **Section 5.2.3, footnote 8:** Revise the footnote to state that low-level MIP (LL MIP) operations will be used for the detectors instead of standard MIP operations. LL MIP is most useful when low contaminant concentrations are present.[12] Since existing data suggest that VOCs concentrations are likely low, LL MIP will provide more useful results compared to standard MIP.

27. **Section 5.2.4, Monitoring Well Installation and Development:**

    a. If grab groundwater samples from temporary monitoring wells contain chlorinated VOCs above screening levels then additional new monitoring well(s) may be needed, and the installation depths may be greater than 20-feet bgs.

    b. **Well Development:** Revise the development procedure as follows: If pumping is used as the development method, a flow rate of approximately 5 to 10 gallons per minute (gpm) should be used for high-permeability material. For low-permeability material, pump at an estimated sustainable flow rate. As soon as possible after the pump is started, collect an unfiltered sample and measure turbidity and record on the well development form. Repeat measurements every 15 to 30 minutes until a general data trend can be determined. Plot the data on a time scale and evaluate the data trend to determine sampling and turbidity measurement interval. Measurements should be made more frequently when the rate of change is greater and less frequently when the rate of change is smaller. When turbidity is below 5 nephelometric turbidity units (NTUs), increase flow rate. Flow rate is only increased once during development. Continue measurements after the flow increase as before, until turbidity is below 5 NTU. Terminate pumping when turbidity is below 5 NTU. When pumping continuously,

[12] https://geoprobe.com/direct-image/ll-mip-low-level-membrane-interface-probe

if the data trend does not indicate that 5 NTU will be achieved, contact Ecology for further direction.

28. **Section 5.2.6:** Revise to state that quarterly groundwater monitoring will not begin until the tidal study (above comments 3 and 4) has been completed so this information can be used in planning optimum sampling times. Also, a minimum of four groundwater quarterly monitoring events will be required. Following these four quarterly events, Ecology will determine the interval for additional groundwater monitoring, if necessary.

29. **Section 5.2.8.2, Field Wet Sieve Test for Wood Waste Evaluation:** Revise to incorporate above comments regarding choosing locations for chemical analysis and biological testing.

30. **Section 5.2.8.3, Surface and Subsurface Sediment Sampling Procedures:**

    a. Revise to incorporate comment 26f above regarding BAZ and subsurface sample intervals.

    b. The procedure states that sediment samples will be collected by Gravity Marine Consulting (Gravity) with a power grab sampler. Ecology agrees with the use of this type of sampler for collecting BAZ 0 to 10 cm surface samples. However, this type of sampler is not suitable for subsurface (0-45 cm and deeper) samples. According to Gravity's website, their power grab samplers can sample from 0 to 25 cm (power grab surface sampler) or 0 to 35 cm (XL power grab surface sampler).[13] Therefore, a power grab sampler will not work for collecting subsurface (0-45 cm and deeper) samples. Consistent with SCUM guidance Table 4-5, a type of core sampler shall be needed for the 0-45 cm and deeper interval. Revise this section accordingly and add the procedures for sampling and processing core samples.

    c. The third sentence of this section states that five subsurface samples will be collected. Figure 18 shows seven subsurface sample locations. Ecology does not agree that seven subsurface locations will be sufficient.

[13] https://gravitymarine.com/news/equipment-type/sediment-sampling/

31. **Section 5.2.11, Equipment Decontamination Procedures:** This section discusses uplands equipment decontamination procedures only. Add a discussion of how sediment sampling equipment will be decontaminated.

32. **Section 5.2.12, Field Recordkeeping:** The forms referenced in Appendix E are for upland sampling only. Add the appropriate forms for collecting surface sediment and sediment cores. Ecology recommends that separate forms are used for surface and core sample collection because the sampling methodology for these is different.

33. **Section 5.3.1, Chemical Analysis:**

    a. Sediment sample analyses shall include PCBs as congeners by EPA Method 1668C. This is necessary because preliminary data from the Budd Inlet Sediments investigation collected by the Port of Olympia showed exceedances of the 0.7 picograms per gram (pg/g) dioxin-like PCB toxic equivalency (TEQ) screening level at the following Site locations: SVCI-467 (0.715 pg/g, 0-1.5 ft), SVCI-466 (0.755 pg/g, 0-1.5 ft), SG-379 (1.94 pg/g, 0-10 cm), and SVCI-465 (1.11 pg/g, 0-1.5 ft).

    b. Add total solids for sediment samples by SM 2540B or SM 2540G.[14]

    c. Add TBT for select sediment samples as noted in comments. See SCUM for method.

    d. Delete footnote 14 that states that only soil samples will be analyzed for dioxins/furans.

    e. Add the use of 8270E-SIM so that lower reporting limits can be reached as needed for lower screening levels.

    f. For site risk-based screening and selection of indicator hazardous substances (also referred to as chemicals of potential concern or COPCs) under Method B, Ecology recommends using a 1E-06 cancer risk for carcinogens, and a hazard quotient (HQ) of 0.1 for noncarcinogens (divide the noncancer-based MTCA cleanup level by 10; similar to EPA Superfund Guidance). The rationale for using an HQ of 0.1 for screening is when multiple noncarcinogens are present at a site, the total HI could exceed 1 if each were screened using an HQ of 1. That is, using an HQ of 1 for screening may result in eliminating some noncarcinogens that would otherwise significantly contribute to an hazard index (HI) of greater than 1.

[14] SCUM Table 5-1.

34. **Section 5.3.2, Biological Testing:** Revise to incorporate comment 26o above.

35. **Section 5.4, Investigation-Derived Waste:** Add a discussion of investigation-derived waste from sediment sampling.

36. **Section 5.3.3.3, Sample Shipment:** This section discusses soil and groundwater samples only. Add a discussion of packaging and shipment of sediment samples also.

37. **Section 6.2, Field Quality Control Samples:** Revise to state that field duplicate samples will be collected from areas known or suspected to be contaminated.

38. **Section 6.4.1, Water Quality:** Provide references for the values in the table.

39. **Section 6.6, Data Quality Review:** Revise the data validation and verification tasks so they meet the requirements of Agreed Order Exhibit B, Task 1.

40. **Figure 4:**

    a. Modify this figure so that the full length of the historical rail spur is shown.

    b. Add the location of the closed in place UST mentioned in Section 4.1

    c. Add the empty storage tank in the intertidal zone that is mentioned in the above comments.

    d. Add the complete locations of stormwater outfalls identified in Figure 3 from Tetra Tech (1999).

    e. The location of “remains of barges/scows” shown on the figure was identified as an “area of old pilings” in Tetra Tech (1999). Please describe in more detail why it is believed that this area contains former barges/scows and whether there are also pilings in this area or if the pilings are in a separate area.

    f. Add the “area of old pilings” north of the facility identified in Tetra Tech (1999) Figure 3.

41. **Figures 4, 11-14, 16, and 18:** Please remove the proposed shoreline restoration area crosshatch from the figure because it obscures underlying details.

42. **Figures 5, 7, and 8:** Add groundwater monitoring well locations to these figures.

43. **Figures 11, 12, 13, 14, 15 and 18:** Modify these figures to show the current intertidal/subtidal boundary and the ordinary high water mark.

44. **New Figure 19:** Prepare a new Figure 19 that shows the Figure 18 information with the new intertidal/subtidal boundary after construction of the proposed development also including the ordinary high water mark.

45. **Figures 4, 18, and 19:** Add the individual locations of wood pilings from the maps in Appendix A. Also add the following Port of Olympia sample locations: SVCI-465, SVCI-466, and SVCI-467.

46. **Figures 11, 12, 13, 14, and 18:** Modify these figures so that the full length of the historical rail spur is shown.

47. **Figures 12 and 13:** Please add a note explaining what the difference is in depth interval between the Port of Olympia's SS- and SG- series samples.

48. **Table 6, Investigation Design:** Update the table to incorporate the above comments.

49. **Table 7, Analytical Methods:** Update the table to incorporate the above comments.

50. **Table 8b, Sediment Reporting Limits:**

    a. Add the Ecology-derived TPH sediment screening level of 100 mg/kg (sum of TPH-D and TPH-HO) previously used at the Solid Wood Site.

    b. Revise the screening levels to show the lower of:

        i. Sediment cleanup objective (SCO), milligrams per kilogram (mg/kg) organic carbon normalized or micrograms per kilogram (µg/kg) dry weight, apparent effects threshold (AET), values from SCUM Table 8-1.

        ii. Screening levels for protection of human health and higher trophic levels (see also below comment 53c).

        iii. Add dioxins/furans to the table and use the PQL value from SCUM Table 11-1. See also related comments below regarding screening levels.

    c. Revise the analytical method column to also show the use of 8270E-SIM so that lower reporting limits can be reached as needed for lower screening levels.

    d. Add TBT and PCBs as congeners to the table. Ecology compares dioxin-like PCBs TEQ (as a single substance) to bioaccumulative criteria on an area-weighted

basis. The screening level for dioxin-like PCBs TEQ, is 0.7 ng/kg based on a practical quantitation limit (PQL) (DOF 2024).[15]

51. **Appendix A, Topographic Survey Maps:** These maps are very useful and show important details that will be helpful for planning upland and sediment sample locations. Please also use these maps to show proposed upland and sediment sample locations.

52. **Appendix D, Preliminary Pathway-Specific Screening Levels:**

    a. **Soil Direct Contact SLs:** It is not permissible to use Standard Method C cleanup level as the preliminary direct contact cleanup level for the commercial/industrial land use scenario. This is because the future land use at the site (commercial/residential) does not meet the applicability characteristics in WAC 173-340-745(1) for industrial properties. Remove the discussion of the use of Method C and the commercial/industrial land use scenario from the text and Table D-1.

    b. **Table D-6, Preliminary Groundwater Vapor Intrusion Screening Levels:** For the same reason as above, remove the MTCA Method C and commercial/industrial land use scenario columns from the table.

    c. **Table D-7, Sediment Screening Levels:** The screening levels shown in the table are mostly chemical criteria for protection of the benthic community. Screening levels also need to be low enough for protection of human health and higher trophic levels. Revise the table accordingly. For example:

        i. Change the dioxins/furans TEQ screening level to 5 ng/kg.[16]

        ii. Change the cadmium screening level to 0.8 mg/kg (natural background; DOF, 2024).

        iii. Add pentachlorophenol screening level of 100 µg/kg (DOF, 2024).

        iv. Change the arsenic screening value to 11 mg/kg (natural background; DOF, 2024).

        v. Change the mercury screening value to 0.2 mg/kg (natural background; DOF, 2024).

[15] Dalton, Olmsted & Fuglevand (DOF), 2024. Pre-Remedial Design Investigation Work Plan, Port of Olympia Budd Inlet Sediment Site, Olympia, Washington. January 31.

[16] SCUM Table 11-1 practical quantitation limit (PQL).

vi. Add the tributyltin screening value of 73 µg/kg (DOF, 2024; DMMP, 2025).[17]

vii. Add the Dioxin-like PCB TEQ screening value of 0.7 picograms per gram (pg/g) or ng/kg.[15]

Please revise the plan to address our comments and resubmit for our review. According to the schedule in the Agreed Order, you now have 90 days to resubmit the revised plan. Timeline extensions may be requested if necessary. If you have any questions, please contact me at (360) 890-0059 or steve.teel@ecy.wa.gov.

Sincerely,



Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Toxics Cleanup Program
Southwest Region Office

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Ecology Site File

[17] Dredged Material Management Program (DMMP), 2025. Dredged Material Evaluation and Disposal Procedures User Manual. Dredged Material Management Office, U.S. Army Corps of Engineers, Seattle District. November.