

# Memo



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**To:** Steve Teel, LHG, Department of Ecology  
**From:** Chris Waldron, P.E. and Hannah Briley, EIT  
**Cc:** Jake Lund, P.E. (City of Olympia), Jonathon Turlove (City of Olympia), Laura Keehan (City of Olympia)  
**Date:** September 11, 2020  
**Subject:** Response to Ecology's Comments on the  
October 5, 2015 Remedial Investigation/Feasibility Study Report - Solid Wood Inc.

The purpose of this memorandum is to provide response to comments<sup>1</sup> from the Washington State Department of Ecology (Ecology) regarding the Remedial Investigation/Feasibility Study (RI/FS) Report for the City of Olympia's Solid Wood Incorporated Site dated October 5, 2015.

## Response to Comment

	Ecology Comment	Response
1.	Executive Summary, Footnote 1: Please rewrite this footnote. The agreed order simply identified the general area in which the site is located – it was not to be used as a limitation on RI investigation. Because the RI has not adequately investigated where contamination has come to be located, a Site boundary has not been established to Ecology's satisfaction. Accordingly, the RI and FS should not use the phrase "Site boundary". Ecology will require supplemental RI work to adequately characterize the Site before a draft Cleanup Action Plan can be created.	We will remove the footnote as it has not achieved our intended objective for clarity/transparency between the general use of the term "Site" and the MTCA definition of "Site Boundary" which are often, incorrectly, used interchangeably.  The purpose of this footnote was not to limit the RI. The purpose was to clarify that the term "Site" – when used without "Site Boundary" in the text does not have the same meaning as the MTCA Definition (WAC 173-340-200). In other words, we use the term Site generally throughout the report to reference the Solid Wood Incorporated Site. The initial starting point for establishing the Site Boundary was based on the information presented in the Agreed Order – additional samples collected during the RI in order to establish the Site Boundary at the end of the RI so that remedial alternatives could be evaluated in the FS.
2.	Section 1: Introduction, Footnote 3: Same comment as above.	See previous response.

<sup>1</sup> Ecology's comments were received via email on December 19, 2019 from Suzy Lewis to Chris Waldron, Kip Summers, and Jonathon Turlove (Suzy Lewis, personal communication, December 19, 2019).

	<b>Ecology Comment</b>	<b>Response</b>
3.	<p>Section 2.4, Potential Contaminant Sources:</p> <p>This sections fails to describe what contaminants are associated with the “potential contaminant sources”. As such, it is unclear to the reader what contamination may be encountered by potential receptors (e.g., cross reference in Section 2.7).</p>	<p>Section 2.4 Potential Contaminant Sources refers to Table 2-1 which identifies potential containment sources and the associated release mechanisms and the typical contaminants associated with the source and release mechanism. This table provides an overview of the contamination that may be encountered on the Site. Figure 2-3, also referenced in Section 2.4, identifies the locations of the potential contaminant source areas. Text will be revised to include the following:</p> <p>Contaminants associated with the potential contaminant source areas and release mechanisms identified in Table 2-1 and in Figure 2-3 include the following:</p> <ul style="list-style-type: none"> <li>▪ Heavy metals</li> <li>▪ Petroleum hydrocarbons</li> <li>▪ Polycyclic aromatic hydrocarbons (PAHs)</li> <li>▪ Semi-volatile organic compounds (SVOCs)</li> <li>▪ Volatile organic compounds (VOCs)</li> <li>▪ Dioxins</li> <li>▪ Creosote</li> <li>▪ Sodium Hydroxide</li> <li>▪ Phenol formaldehyde resins</li> <li>▪ Chlorinated solvents</li> <li>▪ Wood waste</li> <li>▪ Pentachlorophenol</li> </ul>
4.	<p>Section 2.7, conceptual site exposure model, page 2-6, last paragraph:</p> <p>The introductory sentence references Figure 2-6 and one footnote regarding pathways that are considered incomplete. It is not adequate to simply reference the figure because the figure does not contain an explanation of why these pathways are incomplete. Please add text (not footnotes) to describe this.</p>	<p>We will revise the text and Figure 2-6 to ensure that they are consistent and add additional explanation of why specific exposure pathways are considered incomplete to the text in Section 2.7.</p>

	Ecology Comment	Response
5.	<p>Section 3.1.1, soil:</p> <p>The vertical extent of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) contamination along the railroad right-of-way (ROW) has not been determined. For example, samples at locations SB26, SB29, and SB30 were all collected at a depth of 4 feet below ground surface (bgs) and all of them exceeded the Model Toxics Control Act (MTCA) Method A Cleanup Level (0.10 milligrams per kilogram, mg/kg) and the maximum concentration was 0.31 mg/kg. No other depths were analyzed for cPAHs at these locations. It is important to know how the cPAH concentration varies with depth at these locations and what the maximum depth of contamination is. Also, what is the site conceptual model explanation for finding cPAH contamination at this depth? Likewise, cPAH screening level exceedances were found at locations SS03, SS05, SS06, and SS12 (0.5 feet bgs depth) but no deeper samples were collected or analyzed.</p>	<p>Additional soil samples will be collected near the rail spur to delineate the vertical extent of cPAH contamination. A sampling plan, outlining the extent and schedule for the collection of the additional samples, will be prepared and submitted to Ecology for review and approval prior to the collection of any samples.</p> <p>Note: The cPAH concentrations only slightly exceeded the MTCA Method A Soil CUL of 0.1 mg/kg. There is no information that suggests that there was a significant release along the rail spur (historical documentation or visual evidence). As such, the conceptual model for the surface soil exceedances is: (1) creosote-treated railroad ties, (2) minor leaks associated with routine rail operations that would have only impacted surface soil proximate to the rail spur, (3) the fill material that was used to construct the rail spur, and (4) urban background sources. The slightly deeper exceedances (approximately 4 feet bgs) might be associated with: (1) the fill material that was used to construct the rail spur and (2) urban background sources.</p>
6.	<p>Section 3.1.3, sediment, 1st paragraph:</p> <p>It is not accurate to state that “no IAs [interim actions] were performed in sediment.” As shown in Appendix C, Figure 1, portions of the Area D interim action (IA) area are below mean higher high water (MHHW). Please revise text accordingly. Also, this figure should be incorporated into the main figures of the document rather than only in an appendix.</p>	<p>We will add a Figure (similar to Figure 1 in Appendix C) to the text in Section 3.1.3. We will add a footnote to the text that states:</p> <p>For the purposes of this RI, all samples in Area D were classified as soil samples, even if they are below the mean higher high water (MHHW). This is consistent with how the samples were identified (i.e., as soil) in the IA Report – see Appendix C). The following sample stations (DSW05, DSW09, DSW04, DBT02, DSW01, DSW01, DSW08, DBT01, and DSW03) were located below the MHHW and could also be designated as sediment samples as they are located in the transition zone between soil and sediment.</p>
7.	<p>Section 3.2.1.1, Direct Contact:</p> <p>It is confusing to write residential land use is not applicable to the Site. Unless a site qualifies for use of an industrial soil cleanup level (and this Site does not) then soil cleanup levels shall use a presumed unrestricted land use cleanup level in accordance with Washington Administrative Code (WAC) 173-340-740.</p>	<p>We respectfully disagree. The Site is a recreational site. The Site is currently a City-owned, public park and does not qualify as residential under current or future zoning ordinances. It is important that the reader understand that the land use (and associated exposures) will be consistent with a recreator and not a resident. However, this Site does not qualify for the use of industrial soil cleanup levels; therefore, as required by Washington Administrative Code (WAC) 173-340-740, soil cleanup levels were based on unrestricted land use cleanup levels which are protective of residential and recreational exposures.</p>

	<b>Ecology Comment</b>	<b>Response</b>
8.	<p>Section 3.2.2, groundwater screening levels:</p> <p>Ecology does not agree that groundwater at the site is not a feasible drinking water source due to its proximity to surface water. The RI/FS does not provide sufficient information to make a showing under WAC 173-340-720(2) that groundwater should not be classified as potable. The Ecology-approved Industrial Petroleum Distributors (IPD) site states that the future installation of a drinking water well would not be prohibited by the city of Olympia and therefore, as a conservative estimate, it was assumed that groundwater use may include drinking water beneficial uses in the future. Potential beneficial uses for the Solid Wood Site should be consistent with the adjacent IPD site. Please revise the document to include potential drinking water beneficial uses of groundwater for the Solid Wood Site.</p>	<p>We respectfully disagree. In accordance with WAC 173-340-720(2)(d), even if groundwater is classified as a potential future source of drinking water, it is recognized that there may be sites where there is an extremely low probability that the groundwater can be a feasible drinking water source due to proximity to surface water that is not suitable as a domestic water supply. An example of this situation would be shallow ground waters in close proximity to marine waters such as on Harbor Island in Seattle. The shallow ground waters on the Solid Wood are very similar to Harbor Island in their proximity to marine waters. In this case, groundwater is classified as nonpotable since the groundwater on the Site is shallow and tidally influence by Budd Inlet and is hydraulically connected to marine surface water, which is not practicable to use as a drinking water source.</p>
9.	<p>Section 3.3.2, sediment screening levels:</p> <p>Since the draft RI/FS Report was prepared, Ecology has published regional background values for South Puget Sound (Michelsen et al, 2018). For Budd Inlet, this document included regional background values for cPAHs and dioxins/furans. Please incorporate these regional background values into the text and tables in the RI/FS Report.</p>	<p>We respectfully disagree. Regional background concentrations are not intended to be used to identify and determine COPCs. Regional background concentrations are utilized to adjust the cleanup standard to accommodate for “the concentration of contaminant within a department defined geographic area that is primarily attributable to diffuse sources, such as atmospheric deposition or storm water, not attributable to a specific source or release” (Ecology 2018). These values are not intended to be used to identify COCs and/or to reduce the cleanup standards.</p>
10a.	<p>Section 3.3.3, sediment contaminants of concern:</p> <p>Revise the document to include cPAHs as a sediment contaminant of concern (COC). Concentrations of cPAHs at several sediment samples locations (for example SD12, SD14, SD16, SD19, SD27, and SD28) exceed the regional background values of 78 micrograms per kilogram (µg/kg) toxic equivalent quotient (TEQ). The RI/FS Report needs to evaluate the potential for upland cPAHs contamination to impact sediments and discuss the site cPAH sediment data in context of results from Budd Inlet.</p>	<p>Please see the response to comment #9.</p>
10b.	<p>Section 3.3.3, sediment contaminants of concern:</p> <p>Sediment samples were not collected and analyzed for cPAHs and/or TPH in the vicinity of the north and south trestles. This is a data gap if the trestles are or were previously constructed with creosote-treated pilings.</p>	<p>Additional samples will be proposed for the north and south trestles to address this data gap.</p>

	Ecology Comment	Response
10c.	<p>Section 3.3.3, sediment contaminants of concern:</p> <p>The discussion on total dioxins/furans as a sediment COC needs to be revised. Dioxins/furans are sediment COC and were one of the key COCs for the Area D interim action (which included upland soil and sediments). Also, Table 3-6 is misleading because it apparently only include “SD” labeled samples and; therefore, does not include the maximum detected dioxins/furans concentrations in Area D sediments (DSW02, 206 nanograms per kilogram, ng/kg). So, the question should not be whether or not total dioxins/furans are a COC, but whether there are any concentrations of them that exceed screening levels at the Site following the interim action.</p>	<p>Please see the response to comment # 6.</p> <p>Sample DSW02 was removed during the Area D IA and was, therefore, not included in Table 3-3 (soil) or Table 3-6 (sediment) – see Figure 3-2 in the RI/FS.</p> <p>Note: The same MTCA Screening Level (i.e., 11 ng/kg) was used to evaluate in-place soil concentrations and in-place sediment concentrations so there is not an issue/concern that the COC evaluation would have resulted in different results if sediment samples were classified as soil or sediment.</p>
11.	<p>Section 3.3.4.2, Terrestrial Ecological Evaluation:</p> <p>As indicated in the attached Ecological Risk Analysis Memorandum, it is recommended that a Site-Specific Terrestrial Ecological Evaluation (TEE) is conducted at the site per the regulations found in WAC 173-340-7491(2)(a)(i). Please revise the text accordingly. Also, please consult with Ecology if you have any questions as you prepare the Site-Specific TEE.</p>	<p>We respectfully disagree. The Ecological Risk Analysis provided as an attachment to Ecology’s comments indicated that the only criterion that potentially triggered a Site-Specific TEE was WAC 173-340-749 (2)(a)(i). Ecology concluded that, all of the other criteria that might trigger a Site-Specific TEE were not met. Ecology’s basis for the conclusion was essentially that this is a park that is not used for baseball or football so therefore a Site-Specific TEE must be performed. The intent of this criterion is to protect habitat with native or semi-native vegetation that provide long-term habitat and for which ecological value will therefore increase over time with the loss of other habitat in the region. However, it appears that Ecology has misunderstood the current and planned future use for this park. This park is intended to be a high use, urban park that has walking paths and manicured lawns that are intended for sports activities (e.g., frisbee, pickup-soccer) and leisure activities (e.g., sunbathing, picnicking). Therefore, the park’s current/future use is more similar to other parks with intensive use (e.g., a sport field). Land use plans do not include maintaining native vegetation conditions on-Site to any significant degree. The park will continue to be routinely mowed and landscaped.</p> <p>Consequently, a simplified TEE was conducted for the Site as part of the RI/FS and the results of the simplified TEE concluded there was no further evaluation necessary and no endangered or threatened terrestrial species were identified.</p>

	<b>Ecology Comment</b>	<b>Response</b>
12.	<p>Section 3.6, FS Site Boundary Determination:</p> <p>It is incorrect to write that the Site boundary may be limited to areas with screening levels (SL) exceedances. A MTCA site boundary is “any site or area where a hazardous substance...has come to be located”. WAC 173-340-200. This is not limited to areas where the hazardous substance is present above a SL. Therefore the Site boundary must include sediment and groundwater plume areas where hazardous substance(s) have been identified. It is correct to identify that remedial action will only be required in an area of the Site where the hazardous substance is above the SL, and therefore the FS review of work is in the identified areas.</p> <p>Additionally, the FS Alternatives need to review the IA work and determine if the CUL requirements have been met so that the interim action can be considered a final cleanup action. For example, IA excavation compliance monitoring results can be compared to CUL to determine no further excavation of soil is necessary. If IA results in containment, then the requirements of WAC 173-340-740(6)(f) should be reviewed to show that the cleanup action can be determined to comply with cleanup standards.</p>	<p>We respectfully disagree. Site boundaries are typically determined by step out sampling and the site boundary is extended until there are no screening level exceedances. It is not practicable, from an implementation standpoint, to extend the site boundary to a “zero” or non-detect level. The intention was not to limit the extent of the FS, but to identify the remedial action boundaries on-Site. For the purposes of the RI/FS, the Site boundary was identified as the Agreed Order boundary was used to as a starting point for identifying the potential Site boundary and focus for investigation. The identified Site boundary encompasses all remedial action areas.</p> <p>The RI included a review of the IA’s and incorporated all results in the FS that were representative of soil that is still in place (i.e., had not been excavated/removed during an IA) at the Site. Consequently, because the FS Alternatives evaluation was based on the data presented in the RI, it included a determination if the CUL requirements have been met so that the interim action can be considered a final cleanup action.</p>
13.	<p>Section 4.1.2, Soil Cleanup Levels:</p> <p>Please rewrite your description of unrestricted land use. The Site does not qualify for use of an industrial soil cleanup level, and therefore unrestricted land use standards will be used. The fact that zoning prohibits single-family residential land use at the Site is not a factor.</p>	<p>This Site is a city-owned park is used only for recreational use. The Site is not zoned for residential use, nor is it likely it will be zoned for residential use in the future; however, it is acknowledged that this Site does not qualify for industrial soil cleanup levels, therefore, MTCA Method A Soil CULs for unrestricted land use (Table 740-1) were utilized in the RI/FS. The purpose of this section is to identify that the Site prohibits single-family residential land use, but is classified as unrestricted land use (i.e., single-family residential) for the purpose of developing CULs.</p>

	Ecology Comment	Response
14.	<p>Section 4.3, assembled cleanup action alternatives:</p> <p>Ecology does not agree with the combining of the cleanup of the small Oil Stain Area with the railroad right-of-way (RR-ROW) in the cleanup alternatives. Since there is a very large difference in scale/size and potential approaches for the cleanup of these, they need to be evaluated separately.</p> <p>There is also a significant difference in the risk to groundwater between the two areas. Lube oil range soil concentrations from Oil Stain Area samples SB48, 7 feet depth (12,000 milligrams per kilogram, mg/kg) and SB59, 6 feet depth (2,000 mg/kg) shown in WAC 173-340-900 Table 747-5). Grab groundwater samples results from downgradient location SB53 showed concentrations of total petroleum hydrocarbons – diesel range (TPH-D) of 460 micrograms per liter (µg/L) and TPH – lube oil range (TPH-O) of 480 µg/L. As per Ecology Implementation Memorandum #4 (IM-4), since no prescreening or product matching was done the TPH-D and –O results for SB53 need to be summed together. This results in TPH-O concentration of 940 µg/L which exceeds the TPH-O Method A Cleanup Level for groundwater of 500 µg/L.</p> <p>Ecology does not agree with the conclusion in Parametrix (2014) that it is appropriate to use the re-analyzed results using silica-gel cleanup to remove naturally-occurring organics. Groundwater in the area does not seem to be affected by organic material because TPH-D and –O results in the grab groundwater sample from nearby boring SB52 were below the laboratory reporting limit. Please revise the text, figures, and tables accordingly.</p>	<p>We will revise the text, tables, and figures to include the sum of TPH-D + TPH-HO per Ecology’s request.</p> <p>We respectfully disagree with Ecology’s comment with respect to the significant risk to groundwater between the two areas. As shown on Figure 3-4 (see excerpt below), numerous direct push groundwater samples were collected from this area in 2008. In addition, four monitoring wells that were installed and sampled for 4 consecutive quarters in 2009.</p>  <p>It is correct that the TPH-D+TPH-HO result from SB53 was 940 ug/L; however, TPH-D and TPH-HO were not detected in any of the surrounding (and crossgradient/downgradient) direct push samples (i.e., SB-52, SB-32, SB-28, SB-30, SB-26, SB-29, SB-25). Further, TPH-D and TPH-HO were not detected in any of the quarterly groundwater samples from MW-04, MW-03, and MW-07. Note: Groundwater flows due east (i.e., from MW-02 towards MW-03). This data demonstrates that the soil-to-groundwater pathway for TPH-related compounds in this area is not complete and there is not a significant difference in the risk to groundwater between the two areas.</p> <p>The RI report does not include the results for SB-53 that included silica gel cleanup. The TPH-D+TPH-HO result is 940 ug/L (see Table E-2). No other results are presented for SB-53. Therefore, no edits are required.</p>
15.	<p>Section 4.3.2, Alternative 2:</p> <p>Please rewrite this alternative, as institutional controls and engineering controls are not a remedy. It appears that Alternative 2 is using a soil containment remedy, which requires use of controls as part of that remedy.</p>	<p>Correct. This is a containment remedy that incorporates appropriate institutional/environmental controls.</p> <p>The purpose of this alternative was to propose institutional controls and engineering controls in addition to the IAs that have already been completed. This alternative proposed no additional removal of soil/treatment of soil and assumes all existing IAs are complete and comprise part of the final cleanup action. The text will be revised to state the following:</p> <p>Under Alternative 2, the previously implemented IAs are considered complete (i.e., no additional soil removal/soil treatment is required) and ICs and ECs would be implemented in addition to the completed IAs to prevent unplanned and unmitigated contact with the impacted soil remaining within the Site boundary.</p>

	<b>Ecology Comment</b>	<b>Response</b>
16.	<p>Section 4.3.3, Alternative 3 – limited soil excavation, cover, and controls:</p> <p>It is not clear to Ecology the rationale for the excavation of one foot of soil “within the TPH-HO [total petroleum hydrocarbons – heavy oil range] constituent delineation...since the vertical extent of TPH-HO contamination is unknown.” Since the Oil Stain Area release has caused an exceedance of the Method A Cleanup Level for groundwater, this alternative is not adequate for the Oil Stain Area.</p> <p>Please revise this alternative accordingly. It is not clear if this alternative will be using a containment remedy for some areas where soil above a CUL is not excavated. Please be clear if all contaminated soil above a CUL will be removed or not. Additional explanation is needed as to why compliance monitoring would not be necessary. If you are planning to use containment, then compliance monitoring and periodic review will both be part of the remedy [see WAC 173-340-740(6)(f)(v)]. If you’re planning on just using excavation, then compliance monitoring is still required to show soil cleanup levels post-excavation have been met.</p>	<p>This alternative incorporates additional selective excavation and a containment remedy that incorporates appropriate institutional/environmental controls.</p> <p>There is no evidence to suggest a mass release or non-surface release of petroleum products remain at the site (i.e., these have been addressed by IAs). The remaining exceedances are primarily low-level exceedances that do not impact groundwater so selective excavation and containment (via cap/cover) are presented in this alternative. However, for additional protectiveness, one foot of soil will be excavated along the rail spur (width of 20 feet centered on the rail line) and around SB47 and SB48. Once the soil has been excavated, a geotextile fabric will be installed and 12 inches of imported, clean fill material will be installed over excavated areas.</p> <p>Please see the response to comment #14b regarding the soil-to-groundwater pathway.</p> <p>As part of this alternative, long-term inspections will be required, but additional compliance monitoring will not be required because confirmation samples will be collected to demonstrate that all COC concentrations are below MTCA Method A SLs.</p>
17.	<p>Section 5, Recommended Remedial Alternatives:</p> <p>Please revise the statement included as a “Note” – any additional sampling and revision to excavation and cover area will need to be included and approved by Ecology as part of the Cleanup Action Plan. The City cannot conduct additional sampling and make changed to the remedy on an independent basis. Additionally, as noted above, it is not clear if this remedy is using a containment approach to meeting soil cleanup standards.</p>	<p>This is correct. Any additional samples or revisions to the CAP will be communicated to and approved by Ecology. The text will be revised to state the following:</p> <p>Upon review and approval from Ecology, the City may collect additional soil samples within the rail spur area to accurately delineate total cPAH concentrations and refine the area requiring excavation and soil cover. Figure 5-1 shows the extent of the excavation and cover area and will be updated if additional sampling is conducted and the data supports modifying the extent of the excavation and soil cover area.</p>
18.	<p>Oil Stain Area Figures:</p> <p>The existing figures do not show adequate detail for the Oil Stain Area. Ecology recommend that versions of Figures 2 and 4 from Parametrix (2014) be included to provide this detail. Ecology also recommends that Figure 1 from Parametric (2014) be included as this figure shows better detail of the portion of the site south of West Bay Park.</p>	<p>We will add/revise Figures per Ecology’s request.</p>
19.	<p>Figures 1-1 through 5-1:</p> <p>To improve ease of readability, in the paper copies of the document, please reproduce the figures on 11x17 inch paper.</p>	<p>We will print all Figures in the main text (1-1 through 5-1) on 11x17 inch paper for all future hard copy submittals per Ecology’s request.</p>
20.	<p>Figure 2-5:</p> <p>Please revise the legend to include the descriptions/designations of the interim action areas.</p>	<p>The legend on Figure 2-5 will be revised to include symbols for the interim action areas.</p>



	<b>Ecology Comment</b>	<b>Response</b>
21.	<p>Figure 2-6: Post-remediation soil exposures to ecological, recreator, and landscape/utility worker are listed as “potential complete.” Please explain in the figure and/or text what is meant by the term and how unacceptable exposures to these receptors will be controlled and prevented.</p>	<p>The following footnotes will be added to Section 2.7 Conceptual Site Exposure Model:</p> <ul style="list-style-type: none"> <li>▪ Incidental ingestion of and dermal contact with on-Site soil by ecological receptors, recreators, and landscapers/utility workers post-remediation are considered a potentially complete exposure pathway because this RI/FS is proposing to potentially leave contamination in-place and use a cap/cover for containment. It is highly unlikely that these receptors would have contact/exposure to soils contained by the cap/cover.</li> <li>▪ Inhalation of on-Site and off-Site soil by receptors, recreators, and landscapers/utility workers post-remediation are considered a potentially complete exposure pathway because this RI/FS is proposing to potentially leave contamination in-place and use a cap/cover for containment. It is highly unlikely that these receptors would have contact/exposure to soils contained by the cap/cover.</li> </ul>
22.	<p>Figures 3-1 through 3-5: Please add labels with the interim action area designation (for example “Area A”) to each of the detail panes in the figures.</p>	<p>Interim Action area designations are shown in the legend, however, IA areas (e.g., Area A) will be labeled on Figure 3-1 through 3-5.</p>
23.	<p>Figure 3-11, comparison of historic operations with in-place soil total cPAHs results: This figure is incomplete because it does not include the exceedances as SS-12. Please also add the sediment exceedances at SD-12, SD-14, SD-16, SD-27, and SD-28.</p>	<p>Sample location SS-12 will be added to Figure 3-11; however, Figure 3-11 specifically identifies the In-Place Soil samples. Samples SD-12, SD-14, SD-16, SD-17, and SD-28 are sediment samples and were appropriately not included on the figure. Please see the response to comment #6.</p>
24a.	<p>Figure 4-1: This Figure shows that SS03, SS05, SS06, SB26, SB29, SB30, and SB48 are in-place soil cleanup level exceedance locations. However, this figure does not indicate which constituents are exceeded at these locations; please indicate this. Also, there is a text box that contains several sentences regarding SB47 but this location is not shown on the figure and so it is unclear what the text box is referring to. It is recommended that instead of trying to explain these details in a text box that these details are discussed in the text of the document.</p>	<p>A callout box will be included to identify the constituents that resulted in soil exceedances at each of the following locations in Figure 4-1: SS03, SS05, SS06, SS26, SS29, SS30, and SB48.</p> <p>The text regarding sample point SB47 will be moved to Section 4.1.2 Soil Cleanup Levels in the RI/FS text. Additional information regarding the evaluation of sample point SB47 is discussed in Section 3.4.1 TPH-HO in Soil.</p>
24b.	<p>Figure 4-1: Please add the missing cPAH exceedance locations for soil and sediment that are mentioned above.</p>	<p>Sample location SS-12 will be added to Figure 4-1; however, Figure 4-1 specifically identifies the In-Place Soil samples. Samples SD-12, SD-14, SD-16, SD-17, and SD-28 are sediment samples and were appropriately not included on the Figure. Please see the response to comment #6.</p>

	Ecology Comment	Response
25a.	<p>Table 3-1: Some of the groundwater screening levels for protection of surface water have changed since the table was prepared. For example, the table shows the screening level for antimony as 640 micrograms per liter (µg/L) but the lowest value currently shown in Ecology’s Cleanup Level and Risk Calculation (CLARC) database is 90 µg/L (40 CFR 131.45, marine waters, human health). Please check CLARC for the lowest values and modify the table accordingly.</p>	<p>Table 3-1 will be revised to reflect the most recent values in Ecology’s CLARC database.</p>
25b.	<p>Table 3-1: As per Ecology IM-4, since no prescreening or product matching was done the soil and groundwater TPH-D and –O screening levels need to be combined values (2,000 mg/kg and 500 µg/L, respectively).</p>	<p>The text, figures, and tables will be updated accordingly.</p>
25c.	<p>Table 3-1: Please provide more detail on how the soil-to-surface water screening levels were calculated.</p>	<p>Soil-to-surface water screening levels were determined in accordance with WAC 173-340-747(a) and 173-340-747(4)(a), the fixed parameter three-phase partitioning model (Equation 747-1). Based on the criteria in WAC 173-340-720, the groundwater on-Site is classified as nonpotable due to the tidal influence from surface water (i.e., Budd Inlet) and the hydraulic connectivity to surface water, which is not practicable to use as a drinking water source. Using the assumption that groundwater is nonpotable and the assumption that groundwater needs to be protective of surface waters, MTCA Method A surface water CULs were used to determine the soil-to-surface water screening levels.</p>
26.	<p>Table 3-11: Please add a footnote indicating that the industrial or commercial land use values shown in the table for diesel and gasoline range organics are allowed except that the concentrations shall not exceed residual saturation at the soil surface (as per WAC 173-340-900, Table 749-2).</p>	<p>The table will be revised to include the following: Footnote (2): For Industrial or Commercial Land Use SLs for Diesel Range Organics and Gasoline Range Organics, the concentration shall not exceed residual saturation at the soil surface.</p>
27.	<p>Table 3-12: This table only shows the SB59 averaged result (1,810 mg/kg) for TPH-O of the sample and duplicate (3,200 mg/kg and 420 mg/kg, respectively). It is not acceptable to use averaged values in the table. Please revise all tables in the RI/FS report to show each individual values. Also, please note that for decision-making purposes, maximum values shall be used rather than averaged values.</p>	<p>All tables will be revised to show individual samples, including field duplicates.</p>
28.	<p>Table 3-12 and 3-13: Please revise these tables to include soil concentrations for samples removed during the IAs. These results can be footnoted or highlighted as removed but, they still need to be included in the table. The sample locations are shown in Figure 3-2 so it makes sense to allow the reader to see the values for these in the tables.</p>	<p>We respectfully disagree. The purpose of Table 3-12 and Table 3-13 is to report the TPH-HO and cPAH concentrations (respectively) in In-Place soils. The results of the samples removed during the IA are presented in Appendix C.</p>

	<b>Ecology Comment</b>	<b>Response</b>
29.	Appendix E, data tables of analytical laboratory results: Please add a designation to the sample results in the tables (such as bold type or shading) to indicate if the detected concentration and/or laboratory reporting limit exceeds screening and/or cleanup levels.	We respectfully disagree. The purpose of Appendix E is to provide the complete and raw analytical laboratory data. All analytical exceedances are reported in Table 3-3 (MTCA Direct Contact Soil SL Exceedances in In-Place Soil), Table 3-4 (MTCA SL Exceedances in Groundwater), Table 3-6 (SL Exceedances in Sediment), and Table 3-8 (Soil-to-Surface Water SL Exceedances in In-Place Soil).
30.	Appendix E, Table E-1: The total cPAH result for sample SB04 does not match Table 3-13. Please check this and make the appropriate changes to show the correct result.	Table E-1 in Appendix E will be updated to reflect the correct results for sample SB04 (i.e., cPAH result of 0.050 mg/kg).
31.	Electronic file size limit: The maximum size file that can be uploaded to Ecology's Document Storage and Retrieval System (DSARS) is 100 megabytes (MB). The electronic copy of the document that was provided was 226 MB. Please provide an electronic copy of the original document and any future documents in a reduced file size format and/or in portions that are less than 100 MB.	Files will be compressed or uploaded in segments (e.g., text, tables, figures, appendices) to meet Ecology's DSARS maximum file size requirements.
32.	Submittal of electronic data to Ecology's Environmental Information Management System database: We appreciate your work in submitting Site data to Ecology's Environmental Information Management System (EIM) database as required by Agreed Order section VIII.G. However, some RI/FS data appear to be missing from EIM (for example sediment samples from SD34 through SD41, soil samples SB33 through SB41, and grab groundwater samples SB52 and SB53. Please ensure that all data are entered into EIM as per Toxic Cleanup Program Policy 840 (Data Submittal Requirements).	Data uploaded into EIM will be reviewed and any missing data will be uploaded to Ecology's EIM database.

## References

- Ecology. 2004. Implementation Memorandum #4 – Determining Compliance with Method A Cleanup Levels for Diesel and Heavy Oil. June.
- Ecology. 2013. Sediment Management Standards – Chapter 173-204 WAC. Publication No. 13-09-055. February. Effective September 2013.
- Ecology. 2018. South Puget Sound Regional Background – Final Data Evaluation and Summary Report. May.
- Lewis, Suzy (Ecology). "Re: Solid Wood Inc. RI/FS Comments." Message to Chris Waldron, Kip Summers, and Jonathon Turlove. 19 December 2019. E-mail.
- PIONEER. 2015. November 2014 Supplemental Sediment Sampling Results for the Solid Wood Incorporated Site. February 2.
- PIONEER and Parametrix. 2015. Remedial Investigation/Feasibility Study Report – Solid Wood Incorporated Site. Olympia, Washington. Agreed Order No. DE-08-TCP SR-5415. Facility Site No. 94656838. October 5.

Teel, Steve (Ecology). "Re: Comments on Remedial Investigation/Feasibility Study Report." Addressed to Kip Summers (City of Olympia). 19 December 2019. Letter.