EPA Incorporation of Five Tribes Technical Comments submitted July 12, 2019
PDI Evaluation Report dated June 17, 2019
Portland Harbor Superfund Site

Comment	How incorporated in EPA comments
1. The report presents a large, multi-media dataset that was rigorously collected with 100 percent EPA oversight under a Pre-Remedial Design Investigation (PDI). The scope of the data is impressive, and the data will be useful in informing remedial design. They will also serve as a valuable baseline point of comparison for post-remedy long term monitoring, as evaluated during five-year reviews.	Incorporated into EPA Main Report Text General Comment #1.
2. The report's conclusions and recommendations are not technically defensible, as described in the remainder of comments in this memorandum.	Incorporated into EPA Main Report Text General Comment #1.
3. Rather than objectively presenting baseline conditions, the repost presents data in a biased manner in series of the Pre-RD AOC Group's agenda. That agenda is to challenge cleanup levels (CULs), remedial action levels (RALs), and the food web model, among other things, thus reopening the Portland Harbor Superfund Site (PHSS) Record of Decision (ROD). We do not support a reopening of the ROD, which would delay cleanup by at least several years. Cleanup of PHSS should proceed as quickly as possible in order to address human health and ecological risk. We strongly urge EPA to continue to affirm its commitment to upholding the January 2017 ROD, which was developed based on the best information available at the time and was rigorously reviewed.	Incorporated into EPA Main Report Text General Comment #1.
4. Several of the report's key arguments were also made by potentially responsible parties in formal disputes to EPA's final Feasibility Study. These disputes were submitted June 22, 2016 by the Lower Willamette Group, Legacy Site Services (agent for Arkema) and the Union Pacific Railroad. These dispute arbiter ruled against these disputes in a letter from Sheryl Bilbrey, EPA Director of the Region 10 Office of Environmental Cleanup dated December 21, 2016. Ms. Bilbrey rules that EPA appropriately used relevant facts and drew logical conclusions from those facts, was compliant with EPA guidance and regulations, and reasonably applied best professional judgement. The resolution denied all relief requested in the letters of dispute. It is not appropriate to argue these same points again. See comment 8, below, for a partial list of issues raised in the report that were decided in EPA's favor in the dispute resolution.	Incorporated into EPA Main Report Text General Comments #1 and 2; Main Report Text Specific Comments #12, 16, 20, and 22; Appendix E, F, and H Comments.

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5. The report advocates for new CULs and RALs. We do not support this request. The ROD and associated CULs and RALs were developed based on sound analysis using the best information available at the time. It is supported by extensive field studies conducted over many years. The PHSS is a dynamic site and contaminant concentrations are expected to change over time. These changes should not warrants reopening the ROD but rather should be considered during remedial design and five-year reviews following cleanup.	Incorporated into EPA Main Report Text Specific Comments #9 and #18.
6. The report presents multiple lines of evidence to demonstrate that the site is recovering. While many of the specific claims associated with these lines of evidence are exaggerated (see comment 9 and 10 below), we note that the ROD also acknowledges that recover is occurring in the system, due to natural recover, localized cleanups, and source control (p. 67). However, recovery is occurring at a slow rate. Active remediation of hotspots (sediment management areas, or SMAs) is needed to meet remedial action objectives (RAOs) in a reasonable timeframe.	Incorporated into EPA Appendix D.3 Comments #1 and #3.
7. The report is very lengthy, and the review period for Memorandum of Understanding (MOU) partners provided by EPA is insufficient to thorough assess the validity of analyses, data presentation, and conclusions. The report deviates from the scope of the Administrative Settlement and Agreement and Order of Consent (ASAOC) and places an unreasonable burden on EPA and MOU Partners to review voluminous appendices on topics outside the scope of the ASAOC.	Noted. EPA understands that the review period for the MOU partners was insufficient given the amount of material presented. EPA will make its best effort moving forward to ensure that enough time is provided to conduct a thorough review of remedial design documents.
8. The report makes numerous assertions that were rules in EPA's favor in the 2016 dispute resolution and other dispute resolutions referenced in the 2016 resolution. Examples include: a. Lack of statistical relationship between sediment and fish tissue concentrations and implications for food web model. b. Fish consumption assumptions. c. Excluding known sources of contamination in the Downtown/Upriver Reach (D/U Reach) from background	a. Incorporated into EPA Main Report Text Specific Comment 17. b. Incorporated into EPA Specific Comments #11 and #19. c. Incorporated into EPA Specific Comments #10 and #15; and Appendix F.1 Comments. d. Incorporated into EPA Main Report Text

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concentrations, and other methods for calculating background concentrations. d. EPA's definitions of highly toxic and highly mobile principle threat waste (PTW). e. Due to their biased sampling design, remedial investigation and feasibility study (RI/FS) data were not designed to evaluate temporal change.	Specific Comment #21 and Appendix K Comments. e. Incorporated into EPA Main Report Text General Comment #2 and Specific Comment #3.
9. The report compares sediment PDI data to RI/FS data and concludes that PDI concentrations are generally lower. The report provides this finding as evidence that the site is recovering. RI/FS sampling targeted areas of known contamination, whereas the majority of PDI sediment sampling locations were statistically unbiased. Therefore, a comparison of these two datasets is likely to overestimate the extent to which recover is occurring.	Incorporated into EPA Main Report Text General Comment #2, Specific Comment #3, and Appendix D.2 Comments.
10. The report includes additional misleading statement that may overstate the extent of natural recovery. Examples of such statements include the following: a. The asserts in numerous instances that PHSS is net depositional (e.g., p.8). While this statement may be true in terms of net sediment balance across the site, as Table 2.1 shows, the majority of the site is net neutral. b. The report assert that patterns of deposition and erosion are stable (p. 14). However, Figure 2.1 illustrates that erosional, neutral, and depositional areas, while broadly consistent over large areas, are not consistent on a small scale between the two time periods mapped (2002-2009 and 2009-2018). These figures illustrate the dynamic nature of the river, where buried contamination could become exposed over longer time periods. c. The report notes that surface sediment concentrations have generally decreased over time. While this may be true in a broad sense, the presentation of the data is misleading and need context. For instance, the report notes that contaminants of concern concentrations decreased in 71% of paired samples (p. 10). By random chance alone, 50% of paired samples would be expected to decrease. Further, illustrated in Figure 2.3, which compares PDI data to RI/FS data for paired samples, there is so much scatter in the data that there is not a clear or great deviation from the one-to-one relationship	a. Incorporated into EPA Main Report Text Specific Comment #2 and Appendix D.1 Comments #1 and #5. b. Incorporated into EPA Appendix D.1 Comments #1, #4, and #5 c. Incorporated into EPA Main Report Text Specific Comment #3 and Appendix D.2 Comments.

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that assumes no change between the two datasets. These points are lost in the discussion.	
11. The report calculates background concentrations based on surface sediment concentrations in the D/U Reach, rather than using samples only from the Upriver Reach, as was done in the ROD. The downtown Reach is influenced by local sources of contamination that Oregon Department of Environmental Quality has recently cleanup or is in the process of remediating. We expect that contamination concentration in this area will decrease before PHSS remedial action begins. Thus, the report's calculated background concentrations do not represent the minimum sediment contaminant concentrations that can be achieved following PHSS remedial action. The 2016 dispute resolution ruled that it is appropriate to exclude Downtown Reach samples from the calculation of background for this reason. The D/U Reach will be resampled during long-term monitoring events in support of five-year reviews, and those data will help inform whether CULs are reasonably achievable. We further note that sampling in the D/U Reach was biased in that it targeted areas of finer-grained sediments. Thus, contaminant concentrations are biased high.	Incorporated into EPA Main Report Text Specific Comment #10 and Appendix F.1 Comments.
12. The report recalculates fish consumption risk estimates for tribal, subsistence, and recreational fishers. The risk estimate for tribal fishers uses a different fish consumption rate than that used in the Baseline Human Health Risk Assessment (BHHRA; 149 grams per day in the report compared to 175 grams per day in the BHHRA). The BHHRA's fish consumption rate was based on a 1994 study by the Columbia River Inter-Tribal Fish Commission. It is regionally appropriate and relevant to four of the six tribes involved in PHSS remediation (Nez Perce, Umatilla, Warm Springs, and Yakama). In contrast, the report's fish consumption rate is primarily based on surveys of tribes outside of the PHSS area.2 Fish consumption patterns are unique to each tribe; rates for one tribe cannot be assumed relevant to rates for other tribes.	Incorporated into EPA Main Report Text Specific Comment #11 and Appendix G Comments.
13. The report provides revised risk estimates based on a variety of new assumptions and data. We reassert our position that the ROD was developed with the best information available at the time and underwent significant technical and public review; thus, the ROD should not be reopened based on these new risk calculations. However, in the interest of a thorough evaluation of the report, we ask EPA to carefully review these new calculations, including the new assumptions and data, for	Incorporated into EPA Main Report Text General Comment #1, Specific Comment #11, and Appendix G Comments.

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appropriateness. For instance, are they scientifically sound? Are they consistent with EPA guidance? Examples to consider include: a. It seems that the recreational fish consumption rate used in the report is less reliable than the one used in the BHHRA, as the former is based on one study in Idaho, while the latter is based on a more regionally appropriate study in the Columbia Slough. b. The report's updated risk calculations assume that contaminants are lost through cooking the fish, while the BHHRA does not assume loss of contaminants during cooking due to uncertainties about preparation methods. Assuming additional site-specific information is not available to inform an understanding of cooking methods, the BHHRA's more conservative assumption should be used.	
14. The report does not include areas of nonaqueous phase liquid PTW (PTW-NAPL) in its redefined SMAs but rather indicates that PTW-NAPL designations will be further evaluated during remedial design (p. xvii). The report makes several statements minimizing the importance of remediating PTW-NAPL areas (e.g., Appendix J, p. 5). The Five Tribes will not support leaving PTW-NAPL areas untreated.	Incorporated into EPA Main Report Text Specific Comment #22, Appendix J and K Comments.