Memorandum

To: Sean Sheldrake, U.S. Environmental Protection Agency, Region 10

cc: Brandy Humphries, Ryan Sudbury, and Mike Karnosh, Confederated Tribes of the Grand Ronde Community of Oregon;
Brian Cunninghame, Confederated Tribes of the Warm Springs Reservation of Oregon;
Tom Downey, Confederated Tribes of Siletz Indians;
Matt Johnson and Gabriel Moses, Confederated Tribes of the Umatilla Indian Reservation;
Erin Madden, Cascadia Law (Nez Perce Tribe); and
Julie Weis, Haglund, Kelley, Jones & Wilder, LLP (Siletz)

From: Jennifer Peers and Keegan Roberts, Stratus Consulting Inc.

Date: 7/16/2012

Subject: Comments on draft Engineering Evaluation/Cost Analysis for the Gasco sediments cleanup site

This memorandum contains comments on the draft Engineering Evaluation/Cost Analysis (EE/CA) for the Gasco sediments cleanup site (Anchor QEA, 2012). Stratus Consulting prepared these comments on behalf of the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe (the Tribes). Our review focused on the main text of the EE/CA document but our comments are focused on broad concerns, rather than editorial issues. Thank you for your consideration of these comments.

1. **General comment.** The EE/CA was developed to be consistent with the Portland Harbor draft Feasibility Study (FS; Anchor QEA, 2012), which is appropriate. Table 6.0-2 is particularly helpful in comparing the alternatives in the EE/CA to the alternatives in the draft FS. However, the draft FS has some significant issues (Peers and Allen, 2012) that are also of concern in this EE/CA.

   Particular concerns include the treatment of data on buried contamination, the use of sub-SMAs (sediment management areas) to limit remedial technologies, the sediment transport model, the fate and transport model, evaluations of monitored natural recovery (MNR), inappropriate averaging of concentrations, and the comparison and scoring of alternatives. Additionally, we expect that the early action for the Gasco sediments cleanup site will be consistent with the selected remedy for Portland Harbor, which may differ from the alternatives presented in the draft FS.

2. **General comment.** The EE/CA appropriately addresses areas of substantial product in the evaluation of alternatives. The Tribes are supportive of a remedy for Gasco that includes removal of the majority of substantial product from the Willamette River.

3. **Section 2.3.** The success of any remedy at the Gasco sediments cleanup site depends in large part on the success of source control at the Gasco and Siltronic properties. The predictions of flow reversal from the groundwater model should be validated before the sediment remedy is finalized.

4. **Section 4.6.** All areas of buried contamination should be identified, regardless of river current and sediment transport modeling. Appropriate risk management decisions can then be made about how they should be addressed. Additionally, all areas of buried contamination should be discussed in the detailed evaluation of alternatives in Chapter 7.

5. **Section 5.1**. The evaluation of the effectiveness of MNR in the draft FS has significant flaws (see Peers and Allen, 2012), as does the evaluation in this EE/CA. As shown in Figure 5.1.1.2-1, the lines of evidence are not consistent with each other, and it is inappropriate to simply average them to develop an overall recovery category. The predicted long-term recovery rates from the "bed tracer" simulation are inappropriate because they do not take into account the concentrations of contaminants in sediments upstream of the site. Additionally, generalizing about the entire Gasco area of interest is inappropriate. While MNR may be reasonable in some portions of the Gasco area of interest, it is unlikely to be effective in others.

6. **Section 5.4.** The evaluation of the effectiveness of the engineered cap is largely based on modeling and assumptions about groundwater flow direction and velocity. The model assumes that dissolved organic compounds moving upward through the cap will undergo biodegradation and partition onto the cap material. This assumption should be thoroughly evaluated with field testing before any remedy that relies on an engineered cap is implemented.

7. **Section 5.6.** Removal via both hydraulic and mechanical dredge should be considered, and the use of silt curtains should be maintained as a potential best management practice.

8. **Section 6.5.** The assumptions used to estimate construction sequencing and durations are overly constrained and unrealistically inflate the duration of removal-focused alternatives. Because construction duration is relied on as a scoring measure for most of the evaluation criteria (see comment 12, below), these assumptions have a substantial effect on the conclusions of the EE/CA. It is realistic to assume that the early action sites will be addressed first, and that actions can be designed in ways that allow for work to be done outside of the construction window established by the National Marine Fisheries Service (NMFS).

9. **Section 7.2.** Although the removal action is focused on benzo(a)pyrene, the evaluation of the alternatives should address the remedial goals for all relevant contaminants.

10. **Section 8.1.1.** The evaluation of the alternatives for meeting surface sediment remedial action objectives is based on modeling that is potentially severely flawed, and should not be relied upon without additional analyses (Peers and Allen, 2012). The graphs in Figure 7.2.2.1-1a present modeled concentrations of benzo(a)pyrene for the half river mile segments (river mile 7.0-6.5 and river mile 6.5-6.0) for both the navigation channel and the nearshore area. These analyses inappropriately split the exposure area in the center of the Gasco area of interest. The graph in Figure 7.2.2.1-1b presents modeled concentrations of benzo(a)pyrene for the Gasco area of interest; a figure showing the modeled concentrations in the nearshore area of the Gasco area of interest would also be informative. This comment also applies to the subsequent figures of naphthalene.

11. **Section 8.1.4.** The evaluation of whether the alternatives can meet the substantial product remedial action objective should not contain cost information, as costs should be evaluated separately from effectiveness. Additionally, it is entirely unclear whether the modeled concentrations presented in Figures 7.2.2.1-1a-b and 7.2.2.1-2a-b include any evaluation of substantial product.

12. **Section 9.2.** The alternatives are scored using the biased methods presented in the draft FS (Peers and Allen, 2012) that overemphasize the duration of the alternatives. The same concerns also apply to this evaluation.

13. **Appendix B.** Although no archaeological deposits were observed during the removal of the "tar body," the Tribes are supportive of using an archaeologist to monitor removal actions for the Gasco sediments cleanup site. Additionally, we recommend that Anchor QEA consider developing an Inadvertent Discovery Plan for Alternatives 2a, 2b, 3, 4, and 5 that would be followed should cultural material be encountered.

14. **Appendix C.** We have not conducted a thorough review of the draft preliminary Biological Assessment (BA) in this appendix. As discussed in Appendix C, this BA should be consistent with the site-wide BA, and any potential problems with either BA should be addressed during consultation with NMFS.

References

Anchor QEA. 2012. Draft Engineering Evaluation/Cost Estimate: Gasco Sediments Cleanup Site. Prepared for NW Natural. May.

Peers, J. and D. Allen. 2012. Memorandum to Kristine Koch and Chip Humphrey, U.S. Environmental Protection Agency re: Comments on elements of draft Portland Harbor Feasibility Study for use in developing a Record of Decision. July 16.