



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

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**OFFICE OF
ENVIRONMENTAL
CLEANUP**

MEMORANDUM

DATE: November 14, 2017

SUBJECT: Combined Feasibility Study and Source Control Evaluation
Willamette Cove Upland Facility, Portland, Oregon
ECSI #2066
September 18, 2017

FROM: Eva DeMaria, Remedial Project Manager *EDM*

TO: Dan Hafley, Project Manager
Oregon Department of Environmental Quality (DEQ)

The following are the United States Environmental Protection Agency's (EPA's) comments on the document titled *Combined Feasibility Study and Source Control Evaluation Willamette Cove Upland Facility Portland, Oregon* (report) dated September 18, 2017 and prepared by Apex on behalf of the Port of Portland. Willamette Cove (Facility) is listed in the Oregon Department of Environmental Quality (DEQ) Environmental Cleanup Site Information (ECSI) database as ECSI #2066. The site is a 24-acre property located on the northeast bank of the Willamette River between river miles 6 and 7.

Per the Portland Harbor Superfund Site (PHSS) record of decision (ROD [EPA 2017]), "It is expected that controlling upland sources will reduce or eliminate contamination in soil, groundwater, stormwater, and surface water that migrates to the Willamette River. Since the achievement of cleanup levels (CLs) listed in Table 17 of the ROD relies in part upon timely and successful completion of these upland and upstream source area actions, EPA retains the discretion to use its federal authorities to complete those actions."

Review comments for the document are separated into two parts with the following objectives:

- Part I: The purpose of EPA's review of Sections 1.0 through 5.0 of the report was to assess whether the evaluation of contaminant migration pathways was conclusive and sufficient to support a source control decision for the Facility.
- Part II: The purpose of EPA's review of Sections 6.0 through 11.0 was to assess the report's adherence with the PHSS ROD and consistency with the Joint Source Control Strategy (JSCS [EPA and DEQ 2005]) for integration with in-water work.

Note: EPA did not review Section 3.0 Summary of Baseline Risk or Appendix F Dioxin/Furan Removal Practicability Evaluation.

EPA's comments are categorized as: "Primary," which identify concerns that must be resolved to achieve the objective; "To Be Considered," which, if addressed or resolved, would reduce uncertainty, improve confidence in the document's conclusions, and/or best support the objectives; and "Matters of Style," which substantially or adversely affect the presentation or understanding of the technical information provided in the document.

Part I Primary Comments:

1. The source control evaluation (SCE) is incomplete and needs to be revised to support a decision and potential future actions at the Facility. EPA agrees that source control is needed for groundwater and the river bank, but EPA does not agree that the extent of source control needed has been sufficiently evaluated. There are deficiencies in the evaluation of constituents of interest (COIs) and their distribution in groundwater and river bank soil, historical releases, the potential for river bank erosion, the potential for groundwater discharge to the river, and field investigation techniques and documentation that need to be corrected as summarized in the following comments.
2. The river bank evaluation is incomplete and needs further assessment to determine where source control measures should be implemented. As described in the JSCS (and the recent river bank guide), the evaluation should include a description of soil properties, a detailed description of river bank characteristics (avoid generalizations), a description of the potential for soil to erode during extreme events and flood conditions, bank erosion rates supported by details such as the top of bank, bank full height, and toe of bank, and the potential for erosion due to wave action using site specific information (avoid generalizations).
3. The description of previous investigation and removal actions at the Facility is absent or is insufficient to understand what occurred and why. Investigations at the Facility have been ongoing since 1998, but the report just generally describes the sample locations, sampling method, and analysis. The report should be revised to describe the purpose and conclusion of previous investigations so the reader can better understand the conceptual site model and how it was developed.
4. Willamette Cove is identified in the Portland Harbor ROD as a property with a contaminated river bank and adjacent to a sediment management area. The report should describe the potential for non-aqueous phase liquids (NAPL) plumes at the Facility and their potential to migrate to the Willamette River. A sheen was observed in 2007 at the Former Wharf Road Area, but the Port of Portland did not identify the source of the sheen and the lateral and vertical extent of NAPL in soil or sediment. The report should describe the delineation of NAPL at the facility and include soil boring and trench logs from previous investigations to support the delineation. Future soil and groundwater investigations should target areas where concentrations of COIs are suspected to be highest. Soil and groundwater sample intervals should target intervals where sheen and other indicators of contamination are observed.
5. The evaluation of chemicals of potential concern (COPCs) in groundwater should be reevaluated because some COIs were eliminated without sufficient justification. For example, pentachlorophenol should be retained for further evaluation as a groundwater COPC at the West Parcel due to detections at MW-2 above the CL. MW-2 is a monitoring well within 100 feet of the mean high water and located within the former log pond. In addition, the report screens

COPCs in groundwater and river bank soil by summarizing the number of detects and comparing it to the number of samples collected for the Facility. This approach does not account for the physical layout of the Facility and heterogeneity in COI distribution. For example, tetrachloroethene (PCE) was screened out of the COIs for groundwater because it was only detected in 2 of 96 samples and none of the samples were from monitoring wells, but PCE had an exceedance ratio of 3.9 and 41. The report does not show where PCE was detected at an exceedance ratio of 41 or explain the subsequent investigations that were conducted to identify the source of PCE and why it was detected at such a high exceedance ratio.

Part I To be Considered Comments:

1. Section 4.1, Identification of Complete Migration Pathways, page 22. The elevations of WR-190 through WR-193 should be included in the SCE to verify that the potential outfalls do not have the potential to discharge contaminated groundwater to the Willamette River.
2. A table of groundwater elevations and well construction details should be included in the SCE so that the data can be used to verify the conclusions.
3. Section 4.1, Stormwater Pathway, page 22. The evaluation of the stormwater pathway is incomplete or needs to be better explained. Since the purpose of some potential outfalls are unknown, the outfalls should be investigated to determine if they are discharging contaminated sediment and soil to the Willamette River.
4. Tables of analytical results should consistently list the reporting limit for samples that are non-detect. This would help the reader evaluate if the chemical was reported as non-detect above or below the CL. The SCE should be revised to better explain when data were non-detected above the CL because this results in uncertainty in a source control decision.
5. Section 2.11, Waste Designation Evaluation, page 16. The discussion implies that toxicity characteristic leaching procedure sampling will be the primary differentiator for determination of material classifications. However, this process does not address regulatory requirements for waste classification. COIs include polycyclic aromatic hydrocarbons, dioxins/furans, polychlorinated biphenyls, and other chemicals that could result in waste being characterized as hazardous and/or regulated under the Toxic Substances Control Act. The testing framework should be reviewed and revised to account for all waste characterization requirements.

Part I Matters of Style Comments:

1. Figure 9 is missing a title box and legend, and this figure should be completed so that the information can be understood.
2. Section 2.2, Historical Site Uses, page 4. Activities that occurred at the former log pond and the associated chemicals that may be present should be described in the SCE. This Facility feature may be important for the conceptual site model.

3. Section 4.3.2, Compile Groundwater Screening Levels, page 42. This section states that TPH does not have a CL, which is incorrect. Table 17 of the Portland Harbor Superfund Site ROD lists a CL of 2.6 µg/L for TPH-Diesel (C10-C12 Aliphatic), and this value should be incorporated into the SCE.
4. Analytical results are not presented in a way that is easily understandable by the reader. The analytical results are grouped into a mass of tables in Appendix B, making it difficult to find information. Figures are poorly developed and generally comprise mapping of sample locations by investigation event or year. The report for the 24-acre Facility should include soil, groundwater, and NAPL plume maps to present the results of investigations and current conditions.

Part II Primary Comments:

1. The FS portion of the document should be revised to incorporate revisions to the source control evaluations and the site model based on the “Part I” comments provided on Sections 1 through 5 of the report.
2. It is not possible to determine whether the selection of the recommended upland remedy presented in Section 11.0 is consistent with the JSCS (EPA and DEQ 2005) or the selected remedy presented in the ROD. For a consistent evaluation to support the remedial decision for upland source control measures in accordance with Section 4.6 of the JSCS (EPA and DEQ 2005), alternatives should be evaluated against the established evaluation criteria as described in EPA’s *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*, EPA 540-R-93-057 (EPA 1993) and as shown in the inset to Section 4.6 on page 4-8 of the JSCS (EPA and DEQ 2005). The method for alternative evaluation presented in the report is consistent with Oregon Administrative Rule 340-122-0085, and those evaluation criteria and balancing factors are not directly comparable to the criteria and sub criteria presented in EPA 540-R-93-057. Several issues arise that cause EPA to question the efficacy of the recommended upland remedy. The comments presented as “To Be Considered” do not include an exhaustive list of potential issues but were identified to support this determination.

Part II To be Considered Comments:

1. The treatment or removal of hot spots in soil is evaluated for each alternative; however, it is not evident that the evaluation of treatment or removal of hot spots is consistent with the selected remedy presented in the ROD. Section A.1.3 of the JSCS states that principal threats, as defined in the NCP, are similar to hot spots of contamination and must be treated wherever practicable (EPA and DEQ 2005). To be consistent with the ROD, all areas with chemicals listed in Table 21 of the ROD, which comprise principal threat waste (PTW), should be addressed by active remediation. Chemicals in this category have specific treatment requirements for the river bank as described in Section 14.2.9 of the ROD.

2. The selected remedy in the ROD ensures that the preference for treatment is achieved for all PTW and significantly protects the river from impacts from contaminated groundwater plumes discharging into the site. The sub factors associated with the criteria reduction of toxicity, mobility, or volume through treatment presented in EPA 540-R-93-057 are not fully evaluated; therefore, it is not possible to determine whether the recommended upland remedy is consistent with the selected remedy in the ROD.
3. Groundwater in the West Parcel exceeds CLs. Historically, sheens were observed in groundwater from monitoring wells in the West Parcel. According to Section 8.2.2, migration of groundwater to the river would be addressed with monitored natural attenuation combined with reactive capping of sediments, as needed. Although Section 9.0 and Section 11.0 state that the cleanup action for groundwater would be combined with the selected soil alternative, it is not clear that groundwater remedial components (including but not limited to additional monitoring and reactive cap components) necessary to address migration of groundwater exceeding CLs are included in the detailed evaluation or costs presented in Tables 17 through 23.
4. Cost estimates prepared in support of alternatives for the FS should be consistent with EPA guidance, *A Guide to Developing and Documenting Cost Estimates during the Feasibility Study*, EPA 540-R-00-0002 (EPA 2000). Because Section 14.2 of the ROD requires river bank actions to be consistent with the selected remedy and meet Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements, these universal cost estimating concepts, presented in EPA 540-R-00-002, should be applied to this evaluation and cleanup decision. Due to inconsistencies with EPA's cost estimating guidance (including but not limited to documentation/backup, net discount rate, and application of professional/technical services), it is not possible to evaluate if the recommended upland remedy is consistent with the selected remedy in the ROD and if the recommended upland remedy was selected without bias.

Part II Matters of Style Comments:

1. Basic terminology, including but not limited to CERCLA engineering evaluation/cost analysis, PTW, and not reliably contained PTW should be consistent with the JSCS (EPA and DEQ 2005) and ROD (EPA 2017).

References:

EPA and DEQ. 2005. Portland Harbor Joint Source Control Strategy. December.

EPA 2017. Portland Harbor Superfund Site Record of Decision. January.

EPA 2000. *A Guide to Developing and Documenting Cost Estimates during the Feasibility Study*, EPA 540-R-00-0002. OSWER 9355.0-75. July.

EPA 1993. *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*, EPA 540-R-93-057.