September 12, 2025

Oregon Department of Environmental Quality (DEQ)
Northwest Region Office
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Attention: Kevin Dana, Cleanup Project Manager

Subject: Response to Comments on Intermediate (60%) Design Report
Riverbank Source Control Measure
Crawford Street South Site
Portland, Oregon
ECSI No. 2363
File No. 6209-010-01

This letter responds to comments on the Intermediate (60%) Design Report Riverbank Source Control Measure (IDR) for the Crawford Street South CSS site (ECSI # 2363) located in Portland, Oregon (the Site). The IDR was submitted to the Oregon Department of Environmental Quality (DEQ) on June 20, 2025. The DEQ provided comments in a letter dated August 25, 2025; the DEQ included comments prepared by the U.S. Environmental Protection Agency (EPA), and Industrial Economics, Inc. (IEc) on behalf of five federally recognized tribes with the August 25, 2025 letter. The comments provided by each party are presented in italic font below, followed by our response in regular font.

RESPONSE TO DEQ COMMENTS

1. ***DEQ Comment:*** *A Chemical Isolation Modeling Evaluation was attached as Appendix K to the June 2023 Preliminary (30%) Design Report. The modeling evaluation included the following paragraph (in Section 5.2):*

   "Cap modeling results indicate that some level of amendment would be required to meet groundwater target levels at the [point of compliance] for cPAHs, total PCBs and total DDD. The lowest dose of GAC modeled (0.1%) was sufficient to meet respective CULs for these COCs at the POC. Sediment target levels were met with an unamended cap."

   DEQ understands that the Chemical Isolation Modeling Evaluation used conservative assumptions and was intended to support the selection of a low concentration of GAC in the amended sand cap. However, DEQ did not note in the Intermediate (60%) Design Report any subsequent modeling or discussion to demonstrate that the lack of an amended sand cap below ordinary high water would be sufficient to meet groundwater target levels. Such modeling or discussion should be provided in the Pre-Final (90%) Design Report.

Response: The removal action will be removing sediment from the beach with contaminant of concern (COC) concentrations above remediation threshold levels (RTLs) for the Portland Harbor Superfund Site (PHSS). RTLs are remedial action levels (RALs) and principal threat waste (PTW) thresholds from the PHSS Record of Decision (ROD) Table 21 and updated in the *Explanation of Significant Differences, Portland Harbor Superfund Site*, Portland, Oregon and in Errata #2 and Errata #3 (EPA, 2017; 2019; and 2022). Therefore, consistent with the ROD and the *Remedial Design Guidelines and Considerations* (RDGC; EPA, 2021 with updates in 2024 and 2025) for Portland Harbor, the removal action in the beach will complete the remedial action for sediment between ordinary high water (OHW) and ordinary low water (OLW) at the Crawford South site and a cap is no longer needed to address sediment.

However, we note that the results of the cap design modeling demonstrated that amendments were not needed to address carcinogenic polycyclic aromatic hydrocarbons (cPAHs), total polychlorinated biphenyls (PCBs), or dichlorodiphenyldichloroethane (DDD) under "typical" conservative sediment conditions (i.e., average concentrations, moderate groundwater flux), which will be reflective of site conditions following the removals[1]. Additionally, we note that DDD does not need amendments even assuming the extreme conditions (i.e., maximum observed concentration and high groundwater flux) and cPAHs and PCBs only exhibited a slight exceedance (exceedance factors of 1.1 and 1.4, respectively) under these extreme conditions. Since the removal action will be removing the maximum concentrations from the beach sediments, the modeled extreme conditions no longer apply.

A groundwater source control evaluation (GWSCE) was performed for the groundwater pathway and assumed that groundwater would be discharging through unamended sediment (i.e., it would not travel through an amended sand cap before discharge to the river). The GWSCE concluded that no source controls were needed for the groundwater pathway (GeoEngineers, 2024[2]). Therefore, a cap amendment on the beach is not needed for the groundwater pathway.

Based on this evaluation, no additional discussion of modeling for the beach sediments is needed in the 90% design documents. However, a copy of this response to comments letter will be included as an appendix to the design report.

2. ***DEQ Comment**. In July 2022, GeoEngineers completed a Revised Interim Stormwater Source Control Measures Design memo, which outlined plans to control stormwater runoff on to and off of the Crawford Street site. The source control measures would, in part, prevent stormwater from the upland portion of the site from running down the riverbank into the Willamette River. In a February 2024 email, GeoEngineers reported that permitting and construction of the interim stormwater source control measures had been placed on hold because the site was close to being purchased and redeveloped. DEQ recommends that the planned interim stormwater source control measures be implemented in conjunction with, or shortly after completion of, the riverbank remedial action to help prevent recontamination of the riverbank from stormwater runoff.*

[1] Chemical Isolation Modeling Evaluation - Appendix K to the June 2023 Preliminary (30%) Design Report prepared by GeoEngineers

[2] *Addendum to Groundwater Source Control Evaluation* prepared by GeoEngineers and dated May 7, 2024.

Response: We agree that the interim stormwater source control measure should be completed in conjunction with the implementation of the riverbank layback to limit upland runoff from recontaminating or eroding the riverbank following completion of the layback revegetation. City permits needed to complete the interim stormwater source control measure will be obtained concurrently with the permitting process for completing the riverbank layback work so the stormwater controls can be in place directly following the layback.

RESPONSE TO EPA COMMENTS

Primary

1. ***Integration of Full Riverbank Design:*** *Future design reports should integrate the design for the full riverbank area. This 60% Design Report focuses on the portion of the riverbank between ordinary high water (OHW) and top of bank, and notes that a separate removal action will be conducted in the area between ordinary low water (OLW) and OHW. A comprehensive riverbank approach and design should be presented in future design reports, including the proposed removal between OLW and OHW and the design presented in this 60% Design Report for the area above OHW. This will allow for a more complete assessment of the riverbank remedial approach at the Crawford Street site.*

Response: The removal action approach for the beach sediments from OHW to OLW will be incorporated into the 90% design package.

2. ***Geotechnical Data and Evaluations:*** *In EPA comment 4f (EPA 2022) on the 30% design, concerns were raised about the liquefied condition slope stability factor of safety being below the minimum. EPA appreciates Crawford's response to comment suggesting further discussions with the EPA and agrees both parties should convene a meeting. EPA recommends including results of these conversations in subsequent design deliverables.*

Response: We agree a meeting to discuss the geotechnical elements of the riverbank layback and potential influences from the proposed remedial actions at the Cathedral Park Project Area is needed to ensure that the design elements and potential influences from each area are well understood by each design party. We will reach out to the EPA Cathedral Park fund lead team to coordinate a meeting.

RESPONSE TO THE FIVE TRIBES COMMENTS

Specific Comments

On page 13, the report indicates that black sand encountered during site work will be removed. We have one specific comment:

In Section 7.6, there are several references to demarcation geotextile; however, the design drawings in Appendix K do not show geotextile in any of the plans. Drawing 2.0 includes a reference to geotextile under listed items 9 and 10, and, there is a cross reference to Drawing 3.2, but geotextiles are not shown on Drawing 3.2. We recommend the design drawings be updated to show where the geotextile will be placed on site.

Response: The design drawings will be updated to show where the geotextile will be placed on the site.

If you have any questions regarding this response to comments or the project in general, please do not hesitate to contact me at 503.577.1535 or aspencer@geoengineers.com.

Sincerely,
GeoEngineers, Inc.

Amanda Spencer, PE, RG
Senior Principal Hydrogeologist

AS:mls:jm

cc (electronically): Mat Cusma, SSI (pdf)
Tom Leaptrott, Steel Hammer Properties, LLC (pdf)
Paul Seidel, DEQ NWR (pdf)
Mark Pugh, DEQ NWR (pdf)
Dave Lacey, DEQ NWR (pdf)
Laura Hanna, EPA (pdf)

One copy submitted electronically and via hard copy