

EPA Comments and Responses on Draft (dated May 27, 2022) and Revised (dated November 30, 2022) First Phase Pre-Design Investigation Data Summary Report and Second Phase Pre-Design Investigation Work Plan US Moorings Project Area

EPA Response dated February 22, 2023

This is U.S. Environmental Protection Agency's (EPA's) conditional approval of the Revised First Phase Pre-Design Investigation Data Summary Report and Second Phase Pre-Design Investigation Work Plan (Revised Combined DSR-PDIWP) for the US Moorings Project Area. The Revised Combined DSR-PDIWP was prepared by Anchor QEA, LLC on behalf of NW Natural and dated November 30, 2022. Approval is conditioned on NW Natural adequately addressing EPA's responses as described below and providing a final version of the document.

EPA Comments on the Revised Combined DSR-PDIWP

Unless otherwise noted, NW Natural's responses to EPA's comments on the Draft and Revised Combined DSR-PDIWP are acceptable. However, clarification and supplemental information is provided below for the following comments: General Comments 1 and 3; Specific Comments 5, 6, 7, 9, 11, 19, 21, 22, 23, and 25; and Appendix G Specific Comment 4.

EPA General Comment 1 (July 21, 2022)

SMA Delineation Uncertainty Evaluation: EPA expects that the second phase PDI DSR will evaluate project area sediment management areas (SMAs), inclusive of all EPA-approved data and using the approach presented in the SMA Delineation Uncertainty Memo provided to performing parties on April 15, 2022.

NW Natural Response (November 30, 2022)

Consistent with Section 3.3 of the Remedial Design Statement of Work, Portland Harbor Superfund Site, U.S. Moorings Project Area (EPA 2020), NW Natural will complete a full evaluation of SMAs in the Basis of Design Report (BODR). This evaluation will include all EPA-approved data consistent with the data replacement approach already approved by EPA.

EPA Response (February 22, 2023)

The SMA uncertainty analysis should be provided as described in the Remedial Design Guidelines and Considerations document¹ in the second phase PDI DSR and the SMA's can be finalized in the BODR.

EPA General Comment 3 (July 21, 2022)

Habitat Assessment: EPA recommends addressing habitat data collection in the second phase of the PDI, as these data are likely to be needed for development of the remedial design. Compliance

¹ EPA, 2021. Remedial Design Guidelines and Considerations. Portland Harbor Superfund Site. April 23, 2021.

with applicable or relevant and appropriate requirements (ARARs), including the Endangered Species Act and Clean Water Act, requires an evaluation of remedial action impacts on habitat, such as with a Habitat Equivalency Analysis (HEA), which enables quantification of pre- and post-remedial action habitat conditions to determine potential mitigation requirements. Guidance on habitat data required for the HEA is provided in RDGC Appendix B, Topic 9 (EPA 2021).

NW Natural Response (November 30, 2022)

An opportunistic habitat assessment was conducted in October of 2020. The assessment was conducted using the same methodologies as the Gasco Sediments Site habitat assessment. Documentation of the completed habitat assessment is provided in Appendix L.

EPA Response (February 22, 2023)

NW Natural's response to EPA General Comment 3 indicates an "opportunistic habitat assessment" was conducted "using the same methodologies as the Gasco Sediments Site habitat assessment." EPA assumes this refers to the methodology described in the Gasco Final Pre-Remedial Basis of Design Technical Evaluations Work Plan, Appendix F Mitigation Evaluation Work Plan (MEWP)². The Gasco MEWP describes the use of transects along which habitat data were collected. In contrast, the shoreline habitat assessment presented in Appendix L does not describe the use of transects. Habitat data need to be fully representative of existing conditions. Habitat data should be collected along transects at a spacing appropriate to fully describe habitat conditions for input into the Habitat Equivalency Analysis (HEA), which NW Natural proposes to use. Data should include representative photos at a frequency necessary to capture the habitat conditions along each transect.

EPA recommends that NW Natural submit a Habitat Assessment Work Plan for EPA review and approval to ensure representative habitat data are obtained during a supplemental habitat assessment effort. Alternatively, the habitat assessment presented in Appendix L should be revised to clarify how the data are sufficiently representative of existing habitat conditions. If Appendix L is revised, the following additional comments should be addressed (or alternatively, considered in a future habitat assessment submittal):

1. **Data Processing and Mapping, page 2:** Clarify how contour data were obtained to derive the slope and depths of the habitat types present in the project area.
2. **Data Processing and Mapping, page 2:** This section describes "slope categories" which represent habitat types. However, the slope of the "Riparian" and "Below OLW" habitat types is not characterized or described. Revise this section to clarify that the bullets describe the habitat types and the "slope analysis" was applied only to the Active Channel Margin (ACM) habitat type.
3. **Data Processing and Mapping, page 2:** The "Below OLW" habitat type should be further characterized to shallow water, defined as 0 to 15 feet below ordinary low water (OLW), and deep water, defined as greater than 15 feet below OLW. Add the shallow and deep water area calculations to Table 1.

² Anchor QEA, 2019. Final Pre-Remedial Design Basis of Design Technical Evaluations Work Plan. Gasco Sediments Cleanup Action. Prepared for U.S. Environmental Protection Agency, Region 10. Prepared on behalf of NW Natural. August 29, 2019.

4. **Table 1 Habitat Area Calculations by Slope, page 2:** Revise the overarching column header of “Area Calculations by Slope in Square Feet” to “Area Calculations in Square Feet” since neither the “Riparian” or the “Below OLW” categories are categorized by slope. In addition, revise the title to omit “by Slope.”
5. **Figures 2a and 2b:** Revise the figures to include the entire US Moorings Project Area boundary and indicate where deep water areas occur if present within the project area boundary.

EPA Specific Comment 5 (July 21, 2022)

Section 3.3.1.1 Field Blanks, page 10: No field blanks were collected for surface sediment grabs during the first field event in the fall of 2020 rather than the minimum field blank rate of one field blank per sample type per sample event specified in the First Phase PDI Work Plan (Anchor QEA 2020). Provide an explanatory statement for this discrepancy.

NW Natural Response (November 30, 2022)

No field blanks were collected for surface sediment grabs during the fall 2020 sampling event of the first phase pre-design investigation (PDI) due to an oversight by the field team. Field blanks collected during the subsurface sediment and surface and subsurface riverbank soil sampling, and during the 2021 surface sediment sampling, demonstrated that sample containers provided by the laboratory and used for the first phase PDI were acceptable. The text was not revised to address this comment.

EPA Response (February 22, 2023)

Revise the text of the Revised Combined DSR-PDIWP PDI Evaluation Report to include a summary of NW Natural’s November 30, 2022 response. Regarding the text in Section 3.3.1.1 that states no qualification was necessary for the blanks that were collected and that had detections in them, EPA notes that it would be more accurate to state that field blanks were assessed during data validation and no qualification of the data was required (no change to the text required).

EPA Specific Comment 6 (July 21, 2022)

Section 3.3.1.2 Field Duplicates, page 10: Field duplicates were collected at a rate of 4.6% rather than the minimum field duplicate percentage of 5% as specified in the first phase PDI Work Plan (Anchor QEA 2020). Provide an explanatory statement for this discrepancy.

NW Natural Response (November 30, 2022)

Field duplicates were collected at greater than the required frequency for surface sediment, riverbank surface soil samples, and riverbank subsurface soil samples. Field duplicates were collected at the required frequency for subsurface sediment samples that were initially submitted for analyses. However, the overall frequency is slightly below the required frequency because field duplicates could not be submitted for archived subsurface sediment samples that were triggered based on initial subsurface sediment concentration results. The intervals that would be triggered at a later date were unknown at the time of sediment core processing. The text was not revised to address this comment.

EPA Response (February 22, 2023)

Revise the text of the Revised Combined DSR-PDIWP PDI Evaluation Report to include a summary of NW Natural’s November 30, 2022 response.

EPA Specific Comment 7 (July 21, 2022)

Section 3.3.3 Data Validation, page 10: Review of the laboratory data packages against the data validation reports and the data submitted to the PHIDB identified the following deviations that need to be addressed:

- a. The data submitted by Anchor QEA to the PHIDB does not include the field original lab result populated with the original laboratory results. Resubmit the first phase PDI data to the PHIDB to include the original laboratory results.
- b. The data submitted by Anchor QEA to the PHIDB includes sample data group (SDG) numbers that are being shown in scientific notation. Resubmit the first phase PDI data to the PHIDB with the correct SDG numbers.
- c. From the data validation report for SDG L2161038 in Combined DSR-PDIWP Appendix F, Benzo(b)fluoranthene and Indeno(1,2,3-cd)pyrene should have a “J” qualifier for sample USMPDI-056SC-A-05-06-2101107, based on initial calibration criteria. The “J” qualifier is missing from the PHIDB data submittal. Resubmit the first phase PDI data to the PHIDB with this “J” qualifier.
- d. From the data validation report for SDG L2161038 in Combined DSR-PDIWP Appendix F, retene should have a “J” qualifier for samples USMPDI-014SC-A-14-15-201109, USMPDI-040SC-A-09-10-201103, USMPDI-044SC-A-16-17-201104, USMPDI-004SC-A-06-07-201111, and USMPDI-004SC-A-05-06-201111 based on continuing calibration criteria. The “J” qualifier is missing from the PHIDB data submittal. Resubmit the first phase PDI data to the PHIDB with this “J” qualifier.

NW Natural Response (November 30, 2022)

- a. This comment was addressed in a resubmittal of the data to the PHIDB dated August 25, 2022. See submittal titled, US Moorings Project Area Pre-Remedial Design Investigation (PDI) Data Gaps 2020-2021, including additional Triggered Samples to Determine DOC, version 3. The text was not revised to address this comment.
- b. See response to part a.
- c. See response to part a.
- d. See response to part a.

EPA Response (February 22, 2023)

- a. The original lab result field in the US Moorings Portland Harbor Interim Database (PHIDB) resubmittal dated August 25, 2022 contains a numeric value for 55 out of 65,526 line items with the remaining being “null.” Clarify whether these 55 result values are for samples where the original lab result differs from the final result, and that for the remaining line items in the database, the final result value is the same as the original lab result value.
- b. The US Moorings PHIDB resubmittal dated August 25, 2022 still contains SDG numbers in scientific notation (e.g., 2.10E+07, 2.10E+18, 2.10E+82). Resubmit the data to the PHIDB to correct these SDG numbers, or discuss with the PHIDB coordinator if this issue is not present in the electronic data deliverables being submitted to the PHIDB.
- c. Response is acceptable

- d. Response is acceptable.

EPA Specific Comment 9 (July 21, 2022)

Section 4.1 Surface Sediment SMA Refinement, Data Density, and Temporal Relevance Within the Project Area, page 15: The text states that 54 sediment samples were collected whereas the results described in Section 4.1.1 discuss up to 101 detected results. It appears that the reason for this discrepancy is that Section 4.1.1 discusses the results presented in Tables 4-1a and 4-1b, which include surface sediment grabs and top 1-foot intervals of sediment cores. Revise the text to clarify the reason for this discrepancy in total number of surface sediment samples. The text should also explain how the two datasets (grabs and cores) will be used in remedial design (i.e., describe whether one dataset will supersede the other, results will be averaged, or other).

NW Natural Response (November 30, 2022)

EPA is correct that the discrepancy is due to the collection of surface sediment grabs and the 0- to 1-foot interval of sediment cores. The text has been revised according to the comment.

EPA Response (February 22, 2023)

The second paragraph indicates that where surface sediment grabs and sediment cores are within 10 feet of each other, the results will be averaged. EPA does not think it is appropriate to average data collected by two different methods. In these cases, NW Natural should select the higher of the two results. Modify the text accordingly

EPA Specific Comment 11 (July 21, 2022)

Section 5 Second Phase Pre-Design Investigation Work Plan, pages 27 through 37: EPA has the following comments on this section and text should be revised accordingly:

- a. Revise the text to clarify that the SMAs shown on Figures 5-1 through 5-5 are preliminary and to be used for informational purposes only. Note that future EPA approval of the Combined DSR-PDIWP should not be considered an approval of the preliminary SMA refinement.
- b. Revise the text to include detailed reporting and scheduling information for the second phase PDI.

NW Natural Response (November 30, 2022)

- a. The footnote discussing development of the SMAs shown on Figures 5-1 through 5-5 has been revised accordingly.
- b. Section 6 (“Schedule and Reporting”) has been added and contains the requested information.

EPA Response (February 22, 2023)

- a. Response is acceptable.
- b. As requested in EPA’s review of General Comment 1, the SMA uncertainty analysis should be provided in the second phase PDI DSR. Without this information data gaps cannot be fully evaluated.

EPA Specific Comment 19 (July 21, 2022)

Section 5.3 Remedial Technology Refinement Objective, page 33: EPA has the following comments on this section and text should be revised accordingly:

- a. The first phase subsurface cores did not identify the DOC at 26 (out of 56) locations. EPA recommends that the second phase PDI include additional DOC sampling for contaminant inventory purposes.
- b. Clarify whether porewater sampling is anticipated at a future stage or if NW Natural expects to use literature partitioning data for cap design for the US Moorings Project Area. Section 4.3 of the US Moorings Sufficiency Assessment Report (Anchor QEA 2021) documents that arsenic, cadmium, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), chlordanes, and total petroleum hydrocarbons (TPH) in nearshore groundwater exceed the CULs, and other chemicals had elevated detection limits so could not be compared to CULs.
- c. The text states that at 26 locations, the sample depth was insufficient to define DOC. Provide the depths reached, core recovery percentages, and RAL and PTW threshold exceedances in a table.

NW Natural Response (November 30, 2022)

- a. An evaluation to determine the extent to which contaminant inventory sampling is needed will be completed following the determination of remedial technologies throughout the Project Area. NW Natural proposes that, at a maximum, additional deeper coring would be performed at 10 percent of all unbounded locations. This is consistent with what has been discussed with EPA through the Gasco Sediments Site Project Area remedial design process.
- b. The need for porewater sampling at a future stage will be evaluated following receipt of the second phase PDI data and determination of SMAs and remedial technologies within the Project Area.
- c. Table 5-1 has been created to provide the requested information.

EPA Response (February 22, 2023)

- a. EPA agrees that the need for delineating depth of contamination (DOC) at the 26 vertically undelineated cores can be assessed after remedial technology selection is completed in the BODR. The proposal for deeper coring at 10 percent of these locations is not accepted and should be re-evaluated after technology selection is complete.
- b. Response is acceptable.
- c. Response is acceptable.

EPA Specific Comment 21 (July 21, 2022)

Section 5.3.1.1 Dredge Material Haul Barge Dewatering Testing, page 35: EPA has the following comments on this section and the text should be revised accordingly:

- a. Dredge elutriate should be analyzed for all ROD Table 17 COCs with surface water CULs. There are available screening values for the currently omitted COCs. For example, Oregon Administrative Rule 340-041-8033 Tables 30 and 31 have water quality criteria for 2,3,7,8-

TCDD and tributyltin. Revise the Second Phase PDI WP as needed to include analysis of all ROD Table 17 COCs with surface water CULs.

- b. For consistency with other project areas, include a comparison to chronic criteria for informational purposes. While acute criteria are the appropriate screening criteria for water quality impacts from remedial action activities as they are short-term, limited releases, chronic criteria should also be included for comparison purposes.

NW Natural Response (November 30, 2022)

- a. The text has been revised to reflect that all ROD Table 17 COCs with surface water CULs and available screening values will be analyzed.
- b. The text has been revised accordingly. A comparison to chronic criteria will be included where applicable for informational purposes only. These comparisons will not be used for remedial design or remedial implementation decision making.

EPA Response (February 22, 2023)

- a. Analyses of the dredge dewatering elutriate samples should include all Table 17 COCs with surface water CULs, not just the ones with available screening criteria. EPA's forthcoming Water Quality Monitoring Plan (WQMP) template will provide applicable screening criteria which may supersede the criteria listed in Section 5.3.1.1.
- b. Delete "or remedial implementation" from the following sentence that was added to Section 5.3.1.1 as it is anticipated that EPA's WQMP template will require assessment against chronic criteria: "Therefore, NW Natural will compare results to chronic criteria for informational purposes only (these data will not be used for decision-making during remedial design or remedial implementation)."

EPA Specific Comment 22 (July 21, 2022)

Section 5.3.1.2 Dredged Material Stabilization Testing, page 36: Revise the text to clarify whether site water will be added to bulk sediment prior to stabilization testing to simulate post-dredging water contents (i.e., after bulking of sediment with overlying surface water). Include a reference for the proposed testing procedures.

NW Natural Response (November 30, 2022)

The text has been revised to clarify that the dredged material stabilization testing will be performed consistent with the EPA-approved Gasco Sediments Site Revised Pre-Remedial Design Data Gaps Work Plan (Anchor QEA 2019).

EPA Response (February 22, 2023)

EPA suggests that NW Natural coordinate with potential landfills to confirm that the Gasco dredged material stabilization testing process is also acceptable for them.

EPA Specific Comment 23 (July 21, 2022)

Section 5.3.1.3 Dredge Material Disposal Suitability Testing, page 36: EPA has the following comments on this section and the text should be revised accordingly:

- a. Portland Harbor Feasibility Study Figure 3.4-36 identifies areas just upstream of the US Moorings Project Area that have F002 waste (EPA 2016). To prevent potential delays during

remedial action, a subset of the dredge material disposal suitability testing samples should be analyzed for F002 characteristic waste. Revise the Second Phase PDI WP to include those analyses.

- b. This text references “numerous sediment investigations at various depths throughout the project area with air quality monitoring.” Provide citations for these studies.

NW Natural Response (November 30, 2022)

- a. NW Natural collected extensive data throughout the Project Area for volatile organic compounds, which contains the F002 waste constituents, as part of the capping demonstration subsurface sediment sampling program for the first phase PDI. The data were compared to Oregon Department of Environmental Quality risk-based concentrations for the five F002 waste constituents (TCE; cis-DCE; trans-DCE; 1,1-DCE; and vinyl chloride) included in the Statement of Work – Gasco Sediments Site (EPA 2009), and no exceedances were identified. No other available information indicates that F002 waste constituents would be present in the Project Area. For example, extensive testing within the immediately upstream Gasco Sediments Project Area has found no F002 constituent exceedances downstream of the Gasco/Siltronic property line. Therefore, NW Natural understands that F002 wastes are not present at US Moorings and do not require further evaluation. F002 characteristic waste analytes have not been added to the Revised Combined DSR-PDIWP.
- b. The text has been revised to include citations for these studies.

EPA Response (February 22, 2023)

- a. Revise the text of the Revised Combined DSR-PDIWP PDI Evaluation Report to include a summary of NW Natural’s November 30, 2022 response.
- b. Response is acceptable.

EPA Specific Comment 25 (July 21, 2022)

Table 4-1b Statistical Summary: Surface Sediment Site-Wide RAL and PTW-Highly Toxic Threshold: Explain in the First Phase PDI DSR why one sample summarized in Table 4-1b was analyzed for polychlorinated biphenyl (PCB) Aroclors and the rest were analyzed for PCB congeners.

NW Natural Response (November 30, 2022)

This particular sample was mistakenly submitted for PCB Aroclors analyses. NW Natural intended to sample all surface sediment locations for PCB congeners (as was done for all other surface samples during the first phase PDI). Consistent with EPA’s RDGC (EPA 2021), these PCB Aroclors data are usable because they achieve data quality objectives, and the reporting limit is less than 9 micrograms per kilogram.

EPA Response (February 22, 2023)

Revise the text of the Revised Combined DSR-PDIWP PDI Evaluation Report (or alternatively, provide a footnote) to include a summary of NW Natural’s November 30, 2022 response.

EPA Appendix G Specific Comment 4 (July 21, 2022)

Section 3.3.3 Subsurface Sediment Core Logging and Processing Procedures, last bullet,

page 13: Revise the bullet to clarify that analysis will also be performed at the depth intervals associated with the capping evaluation.

NW Natural Response (November 30, 2022)

No capping evaluation analyses are proposed during the second phase PDI. NW Natural assumes this comment was received in error, but if not, please provide clarification.

EPA Response (February 22, 2023)

EPA's comment was in reference to text in Appendix G, Section 5.2 which states that: "Two different chemical and physical testing programs will be addressed through the collection of subsurface sediment cores (DOC identification and capping evaluations)." Revise the text as appropriate to resolve this inconsistency in subsurface sediment sampling objectives.