

EPA Comments on Pre-Design Investigation Work Plan, US Moorings Project Area Dated June 5, 2020

Comments dated July 14, 2020

The following are the United States Environmental Protection Agency's (EPA's) comments on the Pre-Design Investigation Work Plan (PDI WP) for the US Moorings Project Area, prepared by Anchor QEA, LLC on behalf of Northwest Natural (NWN) and dated June 5, 2020.

General Comments on PDI WP:

1. **Newfields Data:** NWN notes that they prefer not to use the 2014-2015 Newfields data for sediment management area (SMA) refinement and remedial design (RD), for reasons including lack of EPA involvement in planning and oversight and the underlying objective of the Newfields investigation (PAH source assessment and not baseline or design-related investigation), and the data are excluded from the PDI WP. However, after collection of the 2014-2015 Newfields data, EPA reviewed and approved the dataset for use during RD and it was posted on the interim data portal. NWN may not entirely agree with the source assessment data quality objectives (DQOs) but use of the data should be considered for making decisions in this project area. EPA expects NWN to at least review the data in relation to remedial action levels (RALs) and principal threat waste (PTW) thresholds to determine if there are any impacts to SMA delineation.
2. **Hydrocarbon Study:** The Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP) include tables for a hydrocarbon study. Details of this study should be provided in the preceding sections of the PDI WP.
3. **SMA Delineation:** The limited scope of the proposed subsurface sampling is not adequate to address the data gaps in the existing subsurface data. The PDI WP's proposal to rely on surficial grab sampling for purposes of SMA delineation (and on cores only for depth of contamination [DOC] determination) is inconsistent with available guidance. The PDI WP appropriately proposes collecting both surficial sediment and core samples; however, it appears to contemplate using only the surficial results in future SMA delineations: "Surface sediment data are proposed during the first phase of the PDI (Section 3) to support achievement of the SMA Refinement Objective. Subsurface sediment characterization is proposed to identify the DOC [depth of contamination] and provide data for capping demonstrations." Since SMA refinement is an objective of the PDI WP and SMA refinement needs to consider both surface and subsurface exceedances of RALs and PTW thresholds (see RD Principle #1 in *Remedial Design Guidelines and Considerations Section (RDGC) 1.4*), EPA recommends expanding the scope of the subsurface sampling during the first phase of the PDI.

Specific Comments on PDI WP:

1. **Section 1.2 Purpose, page 6:** Text in this section states that: "The data gaps that have been identified in the Sufficiency Assessment are incorporated into the data gaps discussed in this PDIWP." Note that, without having reviewed the sufficiency assessment, EPA cannot verify the accuracy of this statement. EPA reserves the right to provide additional comments based on the review of the sufficiency assessment.

2. **Section 2.3 Cleanup Levels, page 11:** The Record of Decision (ROD) Table 17 cleanup levels (CULs) are identified as the long-term contaminant targets to be achieved by the remedy to meet RAOs. EPA's May 29, 2019 e-mail informs NW Natural that Section 8.2.5 of the ROD requires post-construction verification that additional contaminants of concern (COCs) listed in Table 16 (i.e., "ROD-identified COCs posing potentially unacceptable risk") are addressed by the remedy. The PDI WP should note that Section 8.2.5 of the ROD states that contaminants posing potentially unacceptable risk (ROD Table 16) will be compared with post-remedial action conditions to confirm that the remedy is protective of risks of lower ecological significance and this should be taken into consideration.
3. **Section 2.4 Technical Evaluations, page 11:** This section indicates that EPA-approved methodologies identified in the Pre-Remedial Basis of Design Technical Evaluations Work Plan (TEWP) that are applicable to the conditions specific to the Moorings Project Area will be used for the Moorings Project Area technical evaluations and remedial technology assignment. Identify which methodologies from the Gasco Project Area TEWP are applicable to the US Moorings Project Area.
4. **Section 3.1.2 Principal Threat Waste, PTW-NAPL bullet point, page 13:** The text states that no PTW - non-aqueous phase liquid (NAPL) was identified in the ROD for the US Moorings Project Area. Add text clarifying that the ROD and Pre-RD Group samples were evaluated for presence of PTW-NAPL based on the Statement of Work (SOW) definition of NAPL.
5. **Section 3.2 Initial Post-ROD SMA Refinement, 2nd paragraph, page 15:** Clarify whether the Pre-RD Group identified evidence of PTW-NAPL in the core logs. The text indicates that NW Natural did not identify PTW-NAPL based on reviewing Pre-RD Group core logs using the Gasco Project Area PTW-NAPL identification criteria.
6. **Section 3.3 Additional SMA Refinement Using the PDIWP Dataset, page 16:** Describe the objectives and procedures of the "buried contamination evaluation" mentioned in this section. The PDI WP has no other mention or discussion of the buried contamination evaluation within the text. EPA recommends presenting details of the evaluation for review if any findings are expected to be incorporated into RD.
7. **Section 3.4 Review of Existing Data, page 16:** The first sentence states that: "The nature and extent of contamination for the focused COCs at the Project Area, based on the existing sediment data (Section 3.2), is summarized in the following subsections." However, the discussion in the following sections appropriately includes discussion of additional contaminants from Table 21 of the ROD. Revise this sentence to avoid confusion with the ROD's definition of focused COCs. EPA recommends using the term "Table 21 COCs" to be inclusive of both the focused COCs and the additional contaminants listed on Table 21.
8. **Section 3.4 Review of Existing Data, page 16:** Consider including a figure that provides the contaminant concentrations detected at their respective sampling locations. The figure would show the relationship between contaminant detections to RALs and/or CULs.
9. **Section 3.4 Review of Existing Data, page 16:** Include a discussion of the historical seep sample shown in Section 3 figures in this section of the text. Provide the seep sample results and discuss the data relative to the PDI data gaps.

10. **Section 3.4.1 Surface Sediment, page 16:** Clarify whether any samples are older than 20 years. Section 3.4.1 mentions 60 samples collected within the past 20 years and states that less than 1 percent were collected more than 20 years ago.
11. **Section 3.4.2 Subsurface Sediment, page 17 and Table 3-2:** Correct any discrepancies in Section 3.4.2 text and Table 3-2. Section 3.4.2 mentions a total of 80 subsurface samples in the past 20 years and a single sample older than 20 years: 81 samples in total. The last paragraph on page 17 mentions “84 total samples collected.”

In the focused COC subsurface sediment statistics paragraphs specify the number of samples taken for each contaminant. In particular, the dioxins/furans paragraph is unclear about how many samples were collected and analyzed for each analyte. It seems to say that only three subsurface sample locations were analyzed for PeCDD and HxCDF, but that conflicts with Table 3-2 which seems to list four locations with results for those analytes. Revise text and/or table as needed.

12. **Section 3.5 Data Gaps Identified for Surface Sediment SMA Refinement, page 19:** The text discusses concerns with data recency and indicates that physical processes occurring within the Project Area are likely to have changed surface sediment chemical concentrations over time. If NWN plans on addressing temporal relevancy of samples via data replacement, a data replacement approach for surface sediment data should be provided for EPA approval as soon as possible. Note that the age of the data is not the only consideration for data replacement and the presence of outliers, heterogeneity of the substrate, natural recovery occurrence, deposition, erosion/scour potential, and sampling density/resolution also need to be considered consistent with the data replacement discussion (RD Principle #3) in Section 1.4 of EPA’s RDGC. The objective of the PDI is primarily to improve spatial resolution of contaminant deposits. Any data replacement should enhance this effort to accurately resolve the spatial bounds of the distribution. Older remedial investigation/feasibility study (RI/FS) data should only be replaced when concentrations have changed substantively over time, subject to the considerations noted above and described in EPA’s RDGC, and when spatial resolution is at least maintained or improved. EPA’s proposed data replacement approach for the Terminal 4 area was provided to NWN and should be considered in developing a data replacement approach for the Project Area.
13. **Section 4.1.2 Navigational Requirements, page 20:** Describe any maintenance dredging that has been done in the area. Section 5.2 states that NW Natural could not locate any information regarding the maintenance dredging elevations in the future maintenance dredge (FMD) areas, but it is not clear if any historical maintenance dredging information exists.
14. **Section 4.2.5 Subsurface Sediment Composition, page 22:** Include a discussion of all available historical subsurface sediment data. In addition to the US Army Corps of Engineers (USACE) data cited in this section, data from the ROD and Pre-RD Group investigations should be used to characterize the subsurface. Additionally, provide a figure showing the locations of the USACE borings.
15. **Section 4.2.6 Geology and Hydrogeology, pages 23-24:** The section provides an excerpt from the ROD that summarizes the generalized hydrogeologic setting in the Portland Harbor Superfund Site. The section should provide some project area-specific information. At a

minimum, revise the text in this section to clarify if there are any known areas of groundwater discharge within the project area.

16. **Section 4.2.8.2 Surface Sediment Composition, page 26:** Provide citations for the information being discussed which is presumably multiple datasets collected over the years. All other discussions in Section 4.2.8 provide a citation for the information being presented but this subsection does not include any citations.
17. **Section 4.2.8.6 Wind- and Vessel- Generated Waves, pages 27-28:** EPA recommends that the PDI WP identify the data necessary to conduct the various evaluations contemplated in the Basis of Design Report (BODR). As an example, the PDI WP should identify the data necessary to conduct a future evaluation of wave impacts in the area, analyze the adequacy of currently available data to support such an analysis, and from this determine whether data gaps exist. EPA acknowledges that more detailed evaluations will be performed as part of RD and discussed in the BODR; however, a summary of available information for the proposed evaluations could prevent delays from data gaps in future design deliverables.
18. **Section 4.3 Risk Exposure Pathways, page 28:** Specify which pathways for chemical exposure are relevant here. The text states that, “unacceptable risks at the Project Area are associated with humans and ecological receptors for all relevant pathways and their relevant chemicals”. Discuss in greater detail which pathways are of concern in the project area.
19. **Section 4.4 Data Gaps for Conceptual Site Model Refinement, page 29:** Revise the text to clarify what type of sampling efforts are expected during the second phase of the PDI, if known at this stage.
20. **Section 5.2 Current and Future Navigation Considerations, page 30:** Provide additional discussion of the capping demonstration sampling. As currently described, the planned capping demonstration sampling lacks sufficient detail for substantive review. Provide the FMD elevation to be used for design purposes.
21. **Section 5.4 Data Gaps for Remedial Technology Refinement, page 31:** Provide additional discussion of how analysis of samples from just under the riverbank surface will be used to characterize the material within riverbank wedge without additional data from within wedge or at the top-of-bank. Consider providing figures like Gasco Project Area Pre-RD Data Gaps Sampling Work Plan (Pre-RD DGWP) Figures 10a-c to illustrate the vertical spatial coverage of the proposed riverbank samples. See also comment 31 below.
22. **Section 5.4 Data Gaps for Remedial Technology Refinement, page 32:** The first bullet point discusses estimating vertical and lateral extents of RAL and PTW-highly toxic threshold exceedances in the riverbanks. Note that the EPA’s *Guidance for River Bank Characterizations and Evaluations at the Portland Harbor Superfund Site (RBG)* requires characterizing the lateral extent of contaminant concentrations exceeding the criteria listed in Table 1 of the RBG (ROD Tables 17 and 21) over the entire riverbank. Based on Table C-6 of Appendix C this appears to be the case so the text should be revised for clarification.
23. **Section 6.0 First Phase Pre-Design Investigation Sampling and Analysis, page 33 and Figure 3-2:** Move the proposed sample locations along the far side of the southern end of the northern SMA (i.e., SMA near and parallel to the northern half of the US Moorings Project Area shoreline) to outside the SMA boundary to fill the gap in data between the adjoining SMA.

24. **Section 6.0 First Phase Pre-Design Investigation Sampling and Analysis, page 33 and Figure 3-2:** Add the following proposed sampling locations as described below and in the attached figure.
- a. Samples A and B: Add these 2 samples or move the adjacent proposed samples inside the boundary of the northwestern SMA to these locations to address the data gaps between the two SMAs.
 - b. Sample C: EPA recommends adding this sample or moving the adjacent proposed sample inside the boundary of the northwestern SMA to this location to address the data gap between the two SMAs
 - c. Sample D: Include Sample D as a contingency sample based on the results of the adjacent proposed sample inside the boundary of the northeastern SMA to provide improved SMA refinement.
 - d. Sample E: EPA recommends adding this sample to provide improved spatial resolution in the area (the existing samples are more than 150-ft apart).
25. **Section 6.0 First Phase Pre-Design Investigation Sampling and Analysis, page 33:** Include a discussion of potential material management scenarios in the context of the Gasco Project Area approach.
26. **Section 6.1 Surface Sediment Investigation, Item No. 3, page 33:** The third line of evidence, temporal relevance, should consider the potential for erosion and/or burial of contaminated surface sediment to alter concentrations, particularly at locations where large concentration changes occurred in relatively short periods of time.
27. **Section 6.1 Surface Sediment Investigation, page 34:** The text states that all Table 21 contaminants (focused COCs and additional contaminants) will be analyzed. However, Section 5.0 of the FSP specifically states that, “chlorobenzene will not be analyzed.” Revise this section to clarify that chlorobenzene will not be analyzed and provide a justification for the omission of chlorobenzene based on the Project Area conceptual site model (CSM). Also revise all other sediment sampling text in the PDI WP accordingly.
28. **Section 6.2 Subsurface Sediment Investigation, page 34:** Include a figure and/or table showing historical core recoveries for the project area to support the proposed core acceptability criterion of 70%.
29. **Section 6.2 Subsurface Sediment Investigation, page 34:** Include any modifications made during implementation of the Gasco Pre-RD DGWP in response to field conditions as documented in project Field Change Requests. Section 6.2 and Section 3 of Appendix B (Field Sampling Plan) state that the procedures being utilized for surface and subsurface sample collection, processing, and handling are taken from Appendix A of the Gasco Pre-RD DGWP, and clarification is required to confirm that modifications to the Gasco Pre-RD DGWP will be carried forward in the US Moorings PDI WP.
30. **Section 6.2.2 Subsurface Bulk Sediment Sampling and Analysis, pages 35-37:**
- a. Additional information is needed to clarify the availability and source of site-specific equilibrium partition coefficients for the US Moorings Project Area. The section indicates that if capping is shown to be viable, bulk sediment samples and site-specific or literature-derived equilibrium partition coefficients will be used to calculate porewater concentrations.

- b. Clarify how the bulk sediment data is planned to be used. Section 6.2.2 states that the sampling objective for bulk subsurface sediment is to measure concentrations approximately 4 feet below the pre-cap surface elevation. It is not clear why that interval was chosen or how it relates to the referenced ROD Figure 28 decision tree.
31. **Section 6.3 Proposed Riverbank Surface Soil Samples, page 37 and Appendix B (Field Sampling Plan):** Provide a figure which depicts riverbank profiles along the project area shoreline with sampling locations shown. Portions of the shoreline appear have a beach present. Note that, to achieve the data collection objectives, surface soil samples should be representative of riverbank soil, and collection of beach material should be avoided. Additionally, include the proposed soil borings requested in Comment 21.
32. **Section 7 Reporting, page 40:** The text in this section states that the draft *Pre-Design Investigation Evaluation Report* will be provided to EPA within 90 days of receipt of final validated data. Other performing parties at Portland Harbor have 45 days after receipt of validated data to provide the draft PDI evaluation report so EPA recommends that the PDI evaluation report be provided to EPA within 60 days of receipt of final validated data.
33. **Figure 3-2 Proposed Sampling Location:** Discuss in appropriate text sections the purpose of, and data use of those samples shown in Figure 3-2 which are not co-located. The figure labels most sampling locations as “Co-located Surface and Subsurface Sediment Grab and Core (SMA Refinement, DOC, and Capping Evaluation)”. Such samples represent surface grab and subsurface core locations that address a number of data collection objectives. The figure also identifies a small number of separate samples as “Surface Sediment Grab (SMA Refinement)” and “Subsurface Sediment Core (DOC and Capping Evaluation).”
34. **Figures 4-1a through 4-1c Bathymetric Elevation Differences:** Discuss what data will be used to evaluate the nearshore area which lacks bathymetric data, as shown in Figures 4-1a through 4-1c. A large portion of this area is currently outside of an SMA, thus may rely on natural recovery. Discuss the information that will be used to evaluate recovery potential in the nearshore area.

Editorial Comments on PDI WP:

1. **Section 4.2.8.3 Erosion Potential, page 27:** The section reference in the last sentence should be corrected to Section 4.2.8.4.
2. **Section 5.4 Data Gaps for Remedial Technology Refinement, page 31:** Review and revise the reference to Section 4.4 in this section. The second paragraph indicates that erodible riverbank surface soil samples are described in Section 4.4. Section 4.4 does not describe riverbank surface soil samples.
3. **Section 6.4 Proposed Riverbank Angled Borings, 3rd complete paragraph, page 38:** The first sentence in the 3rd complete paragraph has an extra period at the end of a sentence. Revise the text to remove extra punctuation.
4. **Figures 4-1a through 4-1c Bathymetric Elevation Differences:** Revise these figures as follows.
 - a. Add the boundaries of SMAs in the US Moorings Project Area.

- b. Display figures in the same scale as Figure 3-2 to support review of sampling decisions.
- c. Gray shading on the figures appears to indicate lack of survey coverage, if so, the legend should be revised to include this information.

EPA Comments on Appendix B FSP of the Pre-Design Investigation Work Plan, US Moorings Project Area, Dated June 5, 2020

Following are EPA's comments on the Anchor QEA Field Sampling Plan (FSP), Appendix B of the PDI WP for the US Moorings Project Area, prepared by Anchor QEA on behalf of the NW Natural and dated June 5, 2020.

General Comments on FSP:

1. **Table 21 Contaminants:** The FSP text indicates that focused COCs associated with ROD Table 21 will be analyzed; however, the QAPP lists the Table 21 additional contaminants (excluding chlorobenzene). To avoid confusion, replace the term focused COCs with Table 21 contaminants. Revise all applicable sections of the FSP and PDI WP accordingly.

Specific Comments on FSP:

1. **Section 2 Project Management and Responsibilities, page 3:** Revise this text to indicate that the Project Manager will be responsible for coordinating EPA approval of deviations via field change request forms. Any deviations from the PDI WP need to be immediately provided to EPA for approval.
2. **Section 3.0 Sample Collection, Processing, and Handling Procedures, page 4:** Note that sampling methods for riverbank surface soil were not included in the EPA-approved Gasco Sediments Cleanup Action Pre-Remedial Design Data Gaps Field Sampling Plan and Pre-Remedial Design Data Gaps Quality Assurance Project Plan (Appendices A and B of the Revised Pre-Remedial Design Data Gaps Work Plan [Anchor QEA 2019]). The text of this section implies that those methodologies have already been approved by EPA. Revise the text to clarify that riverbank surface soil sampling methodologies were not previously approved by EPA.
3. **Section 3.2.3 Surface Sediment Logging and Processing Procedures, page 7:** Clarify what a "proportionate volume" means. The language appears to imply that if the three subsamples have different recovery volumes, the composite sample will include more volume from the ones with greater recovery. Revise text as needed.
4. **Section 3.3.3 Riverbank Surface Soil Logging and Processing, page 10:** Similar to in-river surface sediment sampling, the text in this section should be revised to state that riverbank surface soil samples will be evaluated by making depressions in the sediment to evaluate for the presence of NAPL that oozes or drips out of the depression during processing. Section 3.1 of the FSP states that: "Small depressions will be made in each surface grab, boring, and core in areas showing the visual absence and presence of petroleum-impacted soils and sediments to evaluate the presence of PTW-NAPL." It is unclear if this is also the case for riverbank surface samples.

5. **Section 3.5 Horizontal Positioning and Vertical Control, page 16:** EPA recommends the use of sonar and/or an underwater camera on the vessel to locate structures that may impede sediment sampling.
6. **Section 3.6 Field Quality Assurance/Quality Control Samples, pages 16-17:** Include field blank and trip blank samples in the discussion in this section.
7. **Section 4.1 Field Documentation, page 19:** EPA requests that additional documentation be collected and provided to enable regulatory personnel to develop a near-first hand understanding of site conditions and field work. EPA's ability to observe site conditions and oversee sampling may be limited by necessary health and safety precautions associated with the current COVID-19 pandemic.
8. **Section 4.4.1 Management of Investigation-Derived Waste, page 22:** Clarify if the investigation-derived waste sample testing for semivolatile organic compounds includes PAHs.
9. **Section 5.4.1 Depth of Contamination Testing, 2nd bullet, page 28:** The text states that: "If either of the bottom two samples exceeds ROD Table 21 RALs and PTW-highly toxic thresholds, the DOC will be considered unbounded and deeper archived samples will be analyzed." It is not clear how archived samples could be deeper than the bottom two samples. Revise the text as appropriate.

Editorial Comments on FSP:

1. **Cover Page:** EPA recommends rotating the cover page photograph. It is upside down relative to all site figures in the report.
2. **Section 5.3 Remediation of Principal Threat Waste:** Section 5.3 includes a reference to section 5.3. Revise as appropriate.
3. **Table B5-1 Chemical and Physical Analytes by Sampling Task:** Reference the specific QAPP table(s) containing the complete analyte lists.

EPA Comments on Appendix C (QAPP) of Pre-Remedial Design Investigation Work Plan, US Moorings Project Area, Dated June 5, 2020

Following are EPA's comments on the Anchor QEA Quality Assurance Project Plan (QAPP), Appendix C of the Pre-Remedial Design Work Plan dated June 5, 2020 prepared by Anchor QEA, LLC on behalf of NW Natural.

The QAPP was reviewed versus the requirements in EPA Requirements for Quality Assurance Project Plans: EPA QA/R-5, March 2001, Reissued May 2006; and Guidance for Quality Assurance Project Plans: EPA QA/G-5, December 2002.

General Comments on QAPP:

1. **Maintenance of Field and Laboratory Equipment:** Identify field and laboratory equipment needing periodic maintenance, and the schedule for this. This can be included in an attachment but should be discussed in the QAPP with a reference to the attachment.
2. **Sampling Process Design and Sampling Methods:** As part of the QAPP, identify the sampling design rationale and methods. Include details of sample types, sample depths (included for sediment samples only), and back up plans for inaccessible locations. If the information exists within the Work Plan or an attachment, a reference to appropriate sections would be acceptable for the required information.
3. **Data Quality Objectives:** The QAPP is missing a section summarizing the outcomes of the DQO process documented in *Guidance on Systematic Planning Using the Data Quality Objectives Process*, EPA QA/G-4, (EPA 2006). With the project objectives, a list of the analytical methods required for each objective should be included in the QAPP to facilitate proper review and aid the field team in use of the QAPP.
4. **Standard Operating Procedures:** Identify and attach laboratory standard operating procedures (SOPs), equipment required, laboratory decontamination procedures, and waste disposal requirements (if any).
5. **Laboratory Data Package:** The QAPP is missing a section on the project's requirements for laboratory data package turnaround times required for each analytical group.

Specific Comments on QAPP:

1. **Distribution List, page ii and Section 2.1.2, page 3:** Neil Bacher is shown on the Distribution List and section 2.1.2 as the Field Coordinator, but the term Field Manager is indicated on the Project Organization Chart, Figure C-1. Use consistent titles.
2. **Section 2.1, Project Organization, page 3:** This section references the Project Organization Chart, Figure C-1 showing the relationships and the lines of communication among all project participants. The EPA QA manager should be shown on the chart.
3. **Section 2.3, Project/Task Description and Schedule, page 5:**
 - a. The text references Figure 3-6 of the PDIWP for sampling locations. However, Figure 3-2 of the PDIWP shows the proposed sampling locations. Update the text to reflect the correct figure(s).
 - b. This section references FSP Section 6 for the sampling schedule, however; this section is missing the list of tasks and schedule for work implementation, including start and end dates. Where specific dates are uncertain, a timeline for completion is acceptable. For example, data validation will start upon receipt of laboratory data packages and is expected to be completed in 30 days. Reference to specific sections within the work plan would be acceptable for the schedule information but a summary of the project tasks needs to be included in the QAPP.
4. **Section 3.4.2, Accuracy, 2nd paragraph, page 12:** The sentence states that spike recovery performance criteria are shown on Table C-6. Update the text to reference Table C-8, the Data Quality Objectives table for this information.

5. **Section 3.4.5, Completeness, page 13:** This section should also include completeness based on the number of valid data generated versus the actual number of samples planned for collection.
6. **Section 3.4.7 Sensitivity, page 14 and Tables C-2, C-3, and C-5:** The tables should include CULs and/or Section 3.4.7 should indicate why cleanup levels are not included.
7. **Section 3.6, Instrument/Equipment Testing, Inspection, and Maintenance, page 19:** Include a list of field equipment and specific frequency and procedures to address the requirements for this section. Address the need for backup equipment should failure occur.
8. **Section 3.7, Instrument Calibration, page 21:** Include a list of field equipment and specific frequency and calibration procedures; reference can be made to the titles of the manufacturer's manuals. Instruments that need end of day checks should be noted.
9. **Section 3.8, Inspection /Acceptance Requirements for Supplies and Consumables, page 22:** Please include the following information in this section: supplier/vendor; procedures for identifying, tracking, storing, and retrieving these supplies; identification of those responsible for maintaining these supplies; and any acceptance criteria for these items, for example, certificates of cleanliness, testing, health, or taxonomic identification. The acceptance criteria should be included.
10. **Section 3.10, Data Management, page 22:** The QAPP is lacking the Data Management procedures described in Section B.10 of R-5 and Section 2.2.10 of the G-5 QAPP Guidance. This can be accomplished by attaching a Data Management Plan to the QAPP which describes the data handling scheme from field to final use and storage; equipment used, and overall process used to process, compile and analyze project data. Note that EPA is developing a site-wide data management plan that should be used when available.
11. **Table C-5 Select Hydrocarbon Study Sediment Analytes, Methods, and Targeted Reporting Limits:** Clarify the purpose of this table. Cleanup levels should be listed for the Select Hydrocarbon Study Sediment analyses if this table remains in the QAPP (or explain why cleanup levels are not relevant). EPA recommends adding volatile petroleum hydrocarbon fractions (VPH) and extractable petroleum hydrocarbon fractions (EPH) to the list of analyses for completeness.

EPA Comments on Appendix D Emergency Response and Health and Safety Plan of the Pre-Design Investigation Work Plan, US Moorings Project Area, Dated June 5, 2020

Following are EPA's comments on the Emergency Response and Health and Safety Plan (ERHASP), Pre-Design Investigation Work Plan dated June 5, 2020, prepared by Anchor QEA, LLC on behalf of NW Natural.

General Comments on Plan:

1. **Meets Minimum Requirements:** The ERHASP appears to meet the minimum requirements under OSHA's 29 CFR 1910 (specifically 1910.120) and 1926 standards, in addition to those for EPA Emergency Response.

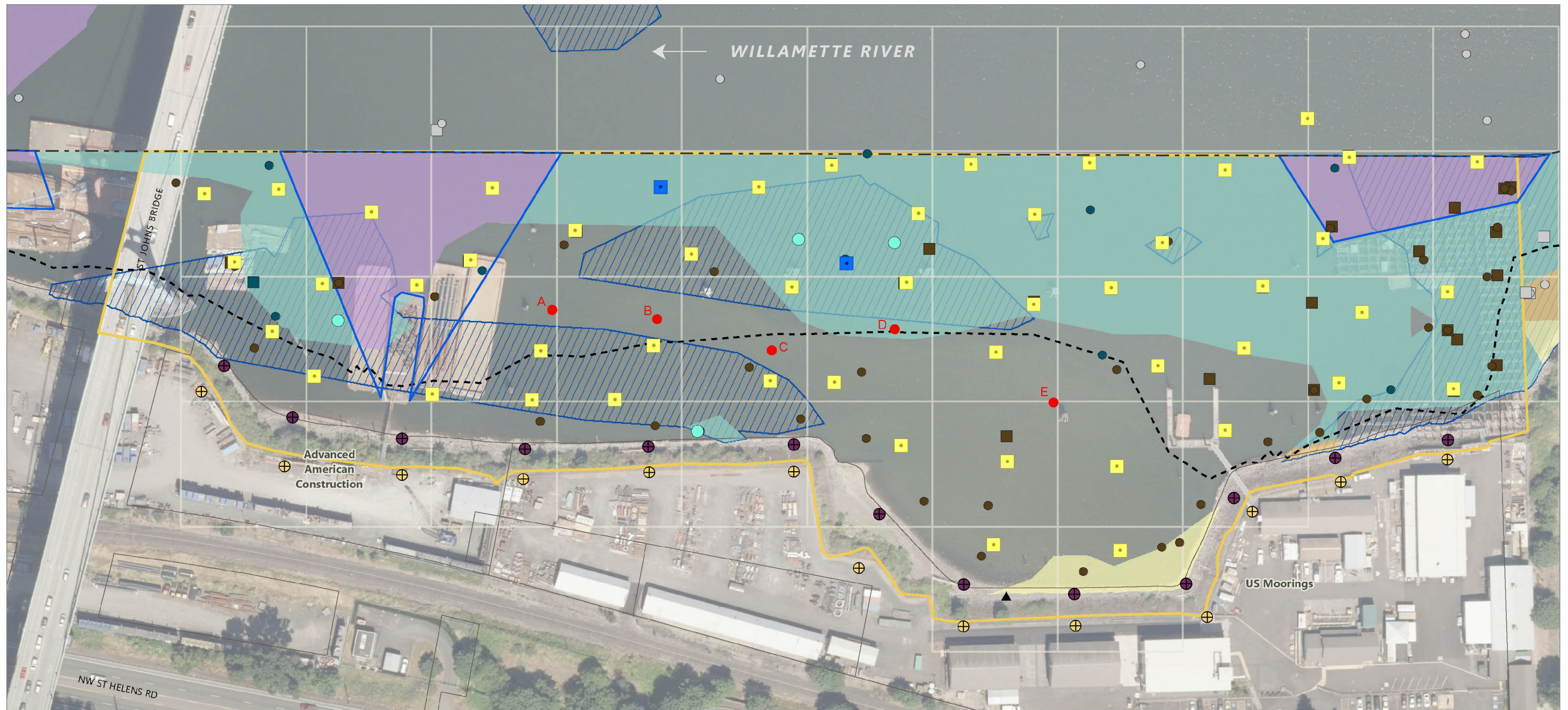
Specific Comments on Plan:

1. **Personal Incident Response Procedures, Page xiii, Item No. 3:** Text should be added that the automated external defibrillator (AED) will be accessible at each work site, confirmation it will be in an unlocked location, and procedures on use will be available. Language that emergency equipment will be checked daily to ensure its readiness for use should also be included; for example, "The AED will be checked for a flashing hour glass/absence of the low battery alarm on a daily basis".
2. **Table 5-1, Project Job Task and Required PPE:** N95 masks are listed in each job task. If these masks are intended for COVID-19 protection it may be prudent to also give the option for cloth face masks/coverings as N95 supplies may be limited. If not, it may be helpful to list out any COVID-19 PPE in this table.
3. **Section 5.2, Project Air Monitoring Requirements, page 9:** Consider revising the 2nd sentence to state an upgrade will occur when action levels have been exceeded and higher-level controls (e.g., engineering) do not lower results to acceptable levels.
4. **Table 5-2, Project Air Monitoring Requirements, Page 13:**
 - a. Under PID monitoring Actions, it is specified that an upgrade to Level C respiratory protection is needed if the action level of 1 ppm is exceeded. The type of respiratory protection and cartridges are not included. Table 5-1 does not specify other than the potential for N95. Will be helpful to align with Table 5-2 and specify type of mask and cartridge in each.
 - b. Under dust monitoring Actions, specify what type of respiratory protection is required, and align with PPE table.
Also, 1.0 mg/m³ is listed as the upgrade action level – per OSHA the silica/dust action level is 50 ug/m³ or 0.05 mg/m³. Please rectify all action levels in the Dust Monitor section if meant to reflect silica/dust protection and OSHA requirements.
5. **Section 10.1, Minimum Requirements – Level D Protection, page 30:**
 - a. Suggest referencing COVID-19 related PPE here, such as use of nitrile gloves and encouragement of use of face covering.
 - b. Chemical-resistant work boots are recommended to facilitate decontamination.

6. **Appendix B Job Safety Analysis Documents, All:** It would be helpful to include COVID-19 as a hazard, reference company COVID-19 policy, and state PPE that may be needed – face masks/coverings, gloves, etc.
7. **Field Program COVID-19 Management Plan:**
 - a. Symptom list on pg. 2 should be expanded to include the latest list from the US Centers for Disease Control and Prevention.
 - b. The COVID-19 plan and ERHASP do not explicitly discuss the approach to potential PPE for COVID-19 protection. Items to consider include the following: is use of face coverings encouraged when not already wearing a mask, are face coverings required when 6’ distance cannot be maintained, such as when on vessel, are items such as nitrile or washable work gloves also encouraged. Reconcile with Appendix B Job Safety Analysis as appropriate.

Attachment

Mark up of Figure 3-2, Proposed Sampling Locations



LEGEND:

- Project Area Boundary
- Navigation Channel
- Tax Lots
- SMAs¹
- Future Maintenance Dredging Area
- Approximate Shallow/Intermediate Zone Boundary²

- Locations Outside Project Area**
- Surface Sediment Location
 - Subsurface Sediment Location
- ROD SMA Technology**
- Cap
 - Dredge
 - Dredge in Nav-FMD
 - Dredge with Cap

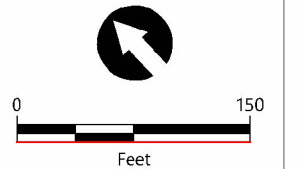
- Locations Inside Project Area**
- Pre-ROD Group Data Inside Project Area*
- Surface Sediment Location
 - Subsurface Sediment Location
- ROD Data Inside Project Area*
- Surface Sediment Location
 - Subsurface Sediment Location
 - Seep Sample Location

- Proposed PDI Sampling Program**
- Surface Sediment Grab (SMA Refinement)
 - Subsurface Sediment Core (DOC and Capping Evaluation)
 - Riverbank Soil Sample (for Erodability Testing)
 - Angled Top of Riverbank Boring

- Co-located Surface and Subsurface Sediment Grab and Core (SMA Refinement, DOC, and Capping Evaluation)

NOTES:

1. Sediment management areas developed consistent with the ROD-identified methods using the post-ROD dataset identified in the Pre-Design Investigation Work Plan.
2. ROD-identified -2 Feet Columbia River Datum Shallow Region elevation threshold converted to City of Portland vertical datum.
3. Arrow indicates direction of flow of river.
4. Horizontal datum is NAD83 (HARN 91) Oregon State Plane North, International Feet.
5. Vertical datum is City of Portland (COP), Feet.
6. Aerial imagery from City of Portland 2018.
7. Shown grid is in 150-foot by 150-foot dimensions to support remedial design data density determinations.



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Figure 3-2
Proposed Sampling Locations
 Pre-Design Investigation Work Plan
 US Moorings Project Area