

**UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 10**

IN THE MATTER OF:	) U.S. EPA Region 10
	) CERCLA Docket No. 10-2009-0255
	)
	) ADMINISTRATIVE SETTLEMENT
Portland Harbor Superfund Site	) AGREEMENT AND ORDER ON
Portland, Multnomah County, Oregon	) CONSENT FOR REMOVAL ACTION
	)
NW Natural, an Oregon Corporation	) AMENDMENT NO. 2 FOR REMEDIAL
	) DESIGN AT B1 NAVIGATION
Respondent	) CHANNEL PROJECT AREA AND U.S.
	) MOORINGS PROJECT AREA
	)
Proceedings Under Sections 104, 107, and 122	)
of the Comprehensive, Environmental	)
Response, Compensation and Liability Act,	)
<u>42 U.S.C. §§ 9604, 9607 and 9622</u>	)

## **Introduction**

NW Natural and Siltronic Corporation entered into an *Administrative Settlement Agreement and Order on Consent for Removal Action*, U.S. EPA, Region 10, CERCLA Docket No. 10-2009-00255, with the United States Environmental Protection Agency (EPA) (the 2009 ASAOC) in September 2009 for performance of response action investigation and design activities at or in connection with an area known as the GASCO Sediments Site within the boundaries of the Portland Harbor Superfund Site.

On February 27, 2020, NW Natural, Siltronic Corporation, and EPA entered into “Amendment No. 1 and Access Agreement” that removed Siltronic Corporation as a Respondent to the 2009 ASAOC, meaning Siltronic Corporation has no further obligations for performance of Work or payment of response costs under the 2009 ASAOC and SOW. Under the Amendment No. 1 and Access Agreement, Siltronic agreed to provide access to its property for performance of Work being conducted under the 2009 ASAOC as more specifically provided in that document.

NW Natural is currently performing the design activities specified in the 2009 ASAOC and attached Statement of Work (2009 SOW) at the GASCO Sediment Site under EPA oversight. NW Natural has agreed to perform remedial design on additional areas designated for active remediation under the Portland Harbor Superfund Site Record of Decision, dated January 3, 2017, beyond the GASCO Sediments Site, under the terms and conditions of this Amendment No. 2 to the 2009 ASAOC, which includes special account disbursements from EPA for remedial design costs related to the additional areas only. NW Natural and EPA do not intend to change any commitments or obligations of NW Natural under the 2009 ASAOC and SOW related to the GASCO Sediments Site. No special account disbursements that may be made by EPA can reimburse NW Natural for costs incurred on or related to the GASCO Sediments Site.

Therefore, this Amendment No. 2 to the ASAOC has two parts. Part 1 applies to the Gasco, Navigation Channel, and U.S. Moorings Project Areas and updates certain terms and requirements, and the Findings of Fact and Conclusions of Law in the 2009 ASAOC, as amended by Amendment 1. Part 2 applies to the Navigation Channel and U.S. Moorings Project Areas and: (1) expands Respondent’s commitment to perform remedial design in the Navigation Channel and U.S. Moorings Project Areas; (2) obtains Respondent’s agreement to EPA special account disbursement terms; and (3) obtains Respondent’s commitment to reimburse oversight costs of EPA, ODEQ, and the Tribal Governments for the Navigation Channel and U.S. Moorings Project Areas. To effectuate Respondent’s agreement to expand the scope of work to be performed under this Amendment No. 2, the following terms and conditions of the 2009 ASAOC are amended as provided below. All other terms and conditions of the 2009 ASAOC remain in full force and effect to the extent appropriate and relevant or otherwise not explicitly amended by this Amendment No. 2, including defined terms used in this Amendment No. 2 and their definitions. Any inconsistencies between the text of the original Settlement Agreement and this Amendment No. 2 are unintentional and should be interpreted in such a manner to effectuate Respondent’s intent to perform all activities described in all of the Statements of Work or 2009 ASAOC, in compliance with the terms of the 2009 ASAOC and this Amendment.

The undersigned hereby agree to amend the Administrative Settlement Agreement and Order on Consent for Removal Action (the “Settlement Agreement”), U.S. EPA Docket No. 10-2009-0255, dated September 9, 2009, as amended by the Amendment No. 1, dated February 27, 2020 as follows:

PART 1: AMENDMENTS APPLICABLE TO GASCO SEDIMENTS SITE, NAVIGATION  
CHANNEL, AND U.S. MOORINGS PROJECT AREAS

1. Appendices B, C, D, E, and F are added to the Settlement.
2. Paragraph 12(k) of the Settlement Agreement is amended to read as follows:  
“Settlement Agreement” shall mean this Administrative Settlement Agreement and Order on Consent and all appendices hereto (listed in Section XXIX) and the Amendments No. 1 and No. 2 to the Administrative Settlement Agreement and Order on Consent and associated appendices, including Appendix B and Appendix C. In the event of conflict between this Settlement Agreement, as amended by the Amendments No. 1 and No. 2, and any appendix, the Settlement Agreement, as amended, shall control.
3. Paragraph 12(n) of the Settlement Agreement is amended to read as follows:  
“Portland Harbor Superfund Site” or “Site” for purposes of this Settlement Agreement shall mean the in-river portion of the Site in Portland, Multnomah County, Oregon listed on the National Priorities List (NPL) on December 1, 2000, 65 Fed. Reg. 75179-01 and for which a final remedy was selected in the January 2017 Record of Decision (ROD). As described in the ROD, the Site extends in-river from approximately river mile (RM) 1.9 to 11.8.
4. Paragraph 12(q) of the Settlement Agreement is amended to read as follows:  
“Statement of Work” or “SOW” shall mean the statements of work set forth in Appendices A, B and C to this Settlement Agreement, and any modifications made thereto in accordance with this Settlement Agreement.
5. Paragraph 12(v) of the Settlement Agreement is added to read as follows: “B1 Navigation Channel Project Area” shall mean for purposes of this Settlement the area between approximately River Mile 5.1 and River Mile 6.5 and specifically depicted in Appendix D.
6. Paragraph 12(w) of the Settlement Agreement is added to read as follows: “Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Site, signed on January 3, 2017, by the Administrator of EPA, all attachments thereto and any subsequent ROD amendment or Explanation of Significant Differences. A copy of the ROD can be found at <https://semspub.epa.gov/work/10/100036257.pdf>.
7. Paragraph 12(x) of the Settlement Agreement is added to read as follows: “Remedial Action” or “RA” shall mean the remedial action selected in the ROD.
8. Paragraph 12(y) of the Settlement Agreement is added to read as follows: “Remedial Design” or “RD” shall mean those remedial design activities to be undertaken to develop the final plans and specifications for RA as stated in the SOW for the Gasco Sediments Site (Appendix A); the SOW for the B1 Navigation Channel Project Area (Appendix B); and the SOW for the U.S. Moorings Project Area (Appendix C).
9. Paragraph 12(z) of the Settlement Agreement is added to read as follows: “U.S. Moorings Project Area” for purposes of this Settlement shall mean the area between the downstream end of the St. John’s Bridge to River Mile 6.1 on the west side of the river and

specifically depicted in Appendix E. The U.S. Moorings Project Area includes all riverbanks from top of the bank to the river.

10. Paragraph 13 of the Settlement Agreement is amended to add the following language:

j. A remedial investigation and feasibility study (RI/FS) was initiated in 2001 and completed in 2017. As part of the RI/FS, baseline human health and ecological risk assessments were conducted to estimate the current and future effects of contaminants in sediments, surface water, groundwater seeps, and fish tissue on human health and the environment. The risk assessments provided the basis for taking action and identified the contaminants of potential concern (COPCs) and exposure pathways that the remedial action should address.

k. The baseline human health risk assessment (BHHRA) estimated cancer risks and noncancer health hazards from exposures to a set of chemicals in sediments (both beach and in-river), surface water, groundwater seeps, and fish tissue from samples collected at the Site.

l. The baseline ecological risk assessment (BERA) estimated risks to aquatic and aquatic-dependent species exposed to hazardous substances associated with the in-river portion of the Site.

m. The BHHRA and BERA concluded that contamination within the Site poses unacceptable risks to human health and the environment from numerous contaminants of potential concern in surface water, groundwater, sediment and fish tissue. The selected remedy reduced the COPCs to 64 contaminants of concern (COCs) that contribute the most significant amount of risk to the human health and ecological receptors. See ROD, Appendix II, Tables 1-5.

n. A subset of the COCs, called focused COCs, was developed in order to simplify analysis and develop and evaluate remedial alternatives for the Site. The focused COCs include PCBs, PAHs, dioxins and furans, and DDX; and they contribute the most significant amount of area-wide risk to human and ecological receptors.

o. PCBs are classified as probable human carcinogens. Children exposed to PCBs may develop learning and behavioral problems later in life. PCBs are known to impact the human immune system and skin, especially in child receptors, and may cause cancer in people. Nursing infants can be exposed to PCBs in breast milk. PCBs can also bioaccumulate in fish, shellfish, and mammals. In birds and mammals, PCBs can cause adverse effects such as anemia and injuries to the liver, stomach, and thyroid gland. PCBs also can cause problems with the immune system, behavioral problems, and impaired reproduction.

p. PAHs are human health and ecological COCs. PAHs are suspected human carcinogens with potential to cause lung, skin, and bladder cancers with occupational exposure. Animal studies show that certain PAHs affect the hematopoietic, immune, reproductive and neurologic systems and cause developmental effects. They can cause inhibited reproduction, delayed emergence, sediment avoidance, and mortality. In fish, PAHs cause liver abnormalities and impairment of the immune system.

q. Dioxins and furans are human health and ecological COCs. Toxic effects in humans include reproductive problems, problems in fetal development or early childhood, immune system damage, and cancer. Nursing infants can be exposed to dioxins and furans in breast milk. Dioxins and furans can bioaccumulate in fish, shellfish, and mammals. Animal effects include developmental and reproductive problems, hemorrhaging, and immune system problems.

r. DDx, which represents collectively DDT and its primary breakdown products dichlorodiphenyldichloroethane (DDD) and dichlorodiphenyldichloroethene (DDE), are human health and ecological COCs. DDT is considered a possible human carcinogen. DDT and DDE are stored in the body's fatty tissues. In pregnant women, DDT and DDE can be passed to the fetus. Nursing infants can be exposed to DDx in breast milk. Laboratory animal studies showed effects on the liver and reproduction. These compounds can accumulate in fish, shellfish and mammals and can cause adverse reproductive effects such as eggshell thinning in birds.

s. The ROD requires active remediation (dredging, capping and enhanced natural recovery) at areas exceeding the remedial action levels (RALs) for the focused COCs and contaminated riverbanks adjacent to some of those areas, referred to as Sediment Management Areas (SMAs). The ROD allows approximately 1,774 acres of sediment to recover naturally. The ROD estimated the remedy would take 13 years to construct.

11. Paragraph 14 of the Settlement Agreement is amended to add the following language:

h. The Portland Harbor Superfund Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

i. The contamination found at the Site as identified in the Findings of Fact above, includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

j. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

k. The RD required by this Settlement is necessary to protect the public health, welfare or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be consistent with the NCP, as provided in Section 300.700(c)(ii) of the NCP.

12. Paragraph 20 of the Settlement Agreement is amended to read as follows: "Respondent shall perform, at a minimum, all actions necessary to implement the Statements of Work (SOWs), which are attached as Appendices A, B and C, and comply with the schedule included with each of the SOWs."

13. Paragraph 26.a. of the Settlement Agreement is amended to add a final sentence that reads, "Progress Reports for Work under Appendices B and C shall be submitted as described in paragraph 4.1 of Appendices B and C."

14. Paragraph 35 of the Settlement Agreement is replaced with the following language:

Until 10 years after completion of the Remedial Action, Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that a Respondent who is potentially liable as an owner or operator of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above, all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in their possession or control or that come into its possession or control that relate in any manner to the performance of the work conducted under Appendix A, B and C, provided, however, that Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the work conducted under Appendix A, B and C and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

At the conclusion of the document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such Records and, upon request by EPA, and except as provided for in Section X (Access to Information), Respondent shall deliver any such Records to EPA.

Respondent certifies that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA and that it has fully complied with any and all EPA requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927, and state law.

15. Paragraph 42.b. of the Settlement Agreement is replaced with the following: Payments made pursuant to this ¶ 42 for Future Response Costs associated with Appendix A shall be made by EFT in accordance with EFT instructions provided by EPA, or by submitting a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund-Portland Harbor Special Account," referencing the name and address of the party making the payment, the Site name, the EPA Region, EPA Site/Spill ID 10EW, and the EPA docket number for this action. Payments for Future Response Costs associated with Appendix B (B1 Navigation Channel Project Area) shall reference account number 10SN. Payments for Future Response Costs associated with Appendix C (U.S. Moorings Project Area) shall reference account number 10SP. Respondent shall send checks to:

U.S. Environmental Protection Agency  
Superfund Payments  
Cincinnati Finance Center  
P.O. Box 979076  
St. Louis, MO 63197-9000

Respondent shall use the following address for payments made by overnight mail:

U.S. Bank  
1005 Convention Plaza  
Mail Station SL-MO-C2GL  
St. Louis, MO 63101-1229



## PART 2: AMENDMENTS APPLICABLE TO NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS

The following is relevant only to the Navigation Channel and U.S. Moorings Project Areas and is in addition to all terms and conditions in the *Administrative Settlement Agreement and Order on Consent for Removal Action*, U.S. EPA, Region 10, CERCLA Docket No. 10-2009-00255, as amended by Amendment No. 1 and Part 1 of this Amendment 2 above.

### **XXXII. JURISDICTION AND GENERAL PROVISIONS RELEVANT ONLY TO THE NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

97. This Amendment No. 2 is entered into voluntarily by EPA and Respondent. This Amendment provides for the performance of 100% Remedial Design (RD) of the B1 Navigation Channel Project Area and the U.S. Moorings Project Area and the payment by Respondent of EPA Future Response Costs, ODEQ Response Costs and Tribal Response Costs incurred at or in connection with the Work described in Appendix B and Appendix C related to the selected remedy for the in-river portion of the Portland Harbor Superfund Site.

98. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the natural resource trustees for the Portland Harbor Superfund Site of negotiations with Respondent regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Amendment consistent with the process agreed to in the 2001 Memorandum of Understanding related to the Portland Harbor Superfund Site.

99. EPA and Respondent recognize that this Amendment has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Amendment do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement, the validity of the findings of fact, conclusions of law, and determinations in Sections IV (Findings of Fact) and V (Conclusions of Law and Determinations) of this Settlement. Respondent agrees to comply and be bound by the terms of this Settlement and further agrees that it will not contest the basis or validity of this Settlement or its terms.

### **XXXIII. DEFINITIONS ONLY RELEVANT TO NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

“Effective Date” shall be the effective date of this Amendment No. 2 as provided in Section XXXXIII.

“Eligible Acre” or “Eligible Acreage” shall mean the acreage of the sediment management areas within the Project Area, with the following qualifications:

1. The acreage of the sediment management areas will be calculated based on Figure 30 of the Record of Decision for the Portland Harbor Site, for SMA Alternative F Mod. The Eligible Acres are used solely to provide a rough apportionment of funds to

areas identified in the ROD as requiring active remediation and do not reflect, nor will be adjusted to incorporate, subsequent data collected, modifications to the ROD including explanations of significant differences, claims of errors in depictions in Figure 30 of the ROD, or actual acreage that is determined to require active remediation during design or any other process.

2. The work areas identified as the following CERCLA Docket Numbers, are excluded from the definition of Eligible Acres: CERCLA Docket No. 10-2004-0009 (Terminal 4 Removal Action Area); CERCLA Docket No. 10-2009-0255 (Gasco Sediments Site); CERCLA Docket No. 10-2013-0087 (RM11E Project Area); and CERCLA Docket No. 10-2019-0142 (Willamette Cove Project Area).
3. Eligible acreage will be calculated to the nearest 1/10<sup>th</sup> of an acre of the total Eligible Acres in the Settlement.
4. Each Eligible Acre, or portion thereof, may only be claimed once within the Site.
5. Eligible Acreage is determined at the time this Settlement is executed. If an existing order identified above is amended within the Offer Period to include 100% RD for Eligible Acres, then those Eligible Acres are eligible for funding. Eligible Acreage is determined at the time the amendment of the existing order identified above is executed.

Eligible Acreage, as determined at the time this Settlement is executed, is 33.3 acres.

“Interest Earned” shall mean interest earned on amounts in the Portland Harbor B1 Navigation Channel and U.S. Moorings Disbursement Special Account, which shall be computed monthly at a rate based on the annual return on investments of the EPA Hazardous Substance Superfund. The applicable rate of interest shall be the rate in effect at the time the interest accrues.

“ODEQ” shall mean the Oregon Department of Environmental Quality and any successor departments or agencies of the State of Oregon.

“ODEQ Response Costs” shall mean all direct and indirect costs that ODEQ incurs in coordinating and consulting with EPA in conjunction with EPA’s planning and implementation of this Settlement. ODEQ Response Costs are only those costs incurred to fulfill the requirements of this Settlement, including review of plans, reports, and assessments prepared pursuant to this Settlement and Community Involvement activities; and scoping, planning, and negotiating this Settlement, but excluding any costs related to natural resource damages assessments, liability or restoration. ODEQ Responses Costs are not inconsistent with the NCP, 40 C.F.R. Part 300, and are recoverable response costs pursuant to Sections 104 and 107 of CERCLA, 42 U.S.C. §§ 9604 and 9607. ODEQ Response Costs shall not include the costs of oversight or data gathered by ODEQ concerning any other response action or Settlement Agreement associated with the Site.

“Performing Parties” shall mean each entity who signs this Amendment No. 2 with EPA.

“Portland Harbor B1 Navigation Channel and U.S. Moorings Disbursement Special Account” shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), and ¶ 102 (Creation of B1 Navigation Channel and U.S. Moorings Disbursement Special Account).

“Portland Harbor Remedial Design Special Account” or “RD Special Account” shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), through the Settlement Agreement for Funding Remedial Design, CERCLA Docket no. 10-2019-0094

“Settling Funding Parties” shall mean the City of Portland and State of Oregon, by and through its Department of Transportation and its Department of State Lands.

“Settlement Agreement for Funding Remedial Design” shall mean the settlement agreement entered into by the EPA and the Settling Funding Parties under CERCLA Docket no. 10-2019-0094.

#### **XXXIV. PERFORMANCE OF WORK PROVISIONS RELEVANT ONLY TO THE NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

##### **100. Notices and Submissions**

a. Respondent shall deliver a copy of this fully-executed Settlement to the Settling Funding Parties and their Trustee within 7 days of the Effective Date of this Settlement.

##### **As to Settling Funding Parties:**

State of Oregon:

Jim McKenna  
Natural Resources Policy Analyst  
Office of Governor Kate Brown  
1600 SW 4<sup>th</sup> Avenue, Suite 109  
Portland, Oregon 97201  
jim.j.mckenna@oregon.gov

Lynne Perry  
Senior Assistant Attorney General  
Natural Resources Section  
Oregon Department of Justice  
100 SW Market Street  
Portland, OR 97201  
lynne.perry@doj.state.or.us

City of Portland:

Annie Von Burg  
Environmental Policy Manager  
Bureau of Environmental Services  
888 SW 5<sup>th</sup> Avenue, Suite 400  
Portland, Oregon 97204  
Annie.VonBurg@portlandoregon.gov

Nanci Klinger  
Sr. Deputy City Attorney  
Office of Portland City Attorney  
1221 SW 4<sup>th</sup> Avenue  
Portland, OR 97204  
Nanci.Klinger@portlandoregon.gov

**As to the Trustee:**

Daniel J. Silver  
Trustee for Portland Harbor Remedial Design Trust  
606 Columbia St. NW Suite 212  
Olympia, WA 98501  
danieljsilver@msn.com

**XXXV. PAYMENT OF RESPONSE COSTS PROVISIONS RELEVANT ONLY TO THE  
NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

**101. Payment of ODEQ Response Costs**

a. Respondent shall be responsible under this Settlement for funding ODEQ Response Costs incurred pursuant to this Settlement that are not inconsistent with the NCP under the terms of a separate agreement to be executed by Respondent and ODEQ (“ODEQ Agreement”).

b. Disputes regarding ODEQ Response Cost bills shall be resolved in accordance with a process agreed to between ODEQ and Respondent under the ODEQ Agreement, and neither ruled by nor conducted under the dispute resolution provisions of this Settlement.

c. Nothing in this Paragraph shall be construed to limit ODEQ’s authority under any source other than this Settlement to seek funding from Respondent or any other party of any costs that ODEQ may incur or may have incurred.

**XXXVI. DISBURSEMENT OF SPECIAL ACCOUNT FUNDS RELEVANT ONLY TO  
THE NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

102. **Creation of B1 Navigation Channel and U.S. Moorings Disbursement Special Account and Agreement to Disburse Funds to Respondent.** Within 30 days after the Effective Date of the Amendment No. 2 and the receipt of funds from Settling Funding parties into the RD Special Account, EPA shall establish the B1 Navigation Channel and U.S. Moorings Disbursement Special Account and transfer \$1,332,000<sup>1</sup> from the RD Special Account to the B1 Navigation Channel and U.S. Moorings Disbursement Special Account. Such funds will then be available for Phase 1 Disbursement as provided in this Section. Funds for Phase 2 Disbursement will only be eligible for disbursement upon amendment of this Settlement as provided in this Section. Subject to the terms and conditions set forth in this Section, EPA agrees to make the funds in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, including Interest Earned on the funds in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, available for disbursement to Respondent as partial reimbursement for performance of the Work. EPA shall disburse funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account to Respondent in accordance with the procedures and milestones for phased disbursement set forth in this Section.

103. **Timing, Amount, and Method of Phase 1 Disbursement From the B1 Navigation Channel and U.S. Moorings Disbursement Special Account.** Within 30 days after EPA's receipt of a Cost Summary and Certification, as defined by ¶ 105.b, or if EPA has requested additional information under ¶ 105.b or a revised Cost Summary and Certification under ¶ 105.c, within 30 days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Section, EPA shall disburse the funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account at the completion of the following milestone, and in the amount set forth below:

Milestone	Disbursement of Funds
Submittal of PDI Evaluation Report for the U.S. Moorings Project Area	\$1,332,000 <sup>2</sup> from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, plus any Interest Earned on that amount

Within 30 days after the Effective Date, Respondent shall provide to EPA the name and address for payment or instructions for electronic funds transfer for the Phase 1 Disbursement. EPA shall disburse the funds for the Phase 1 Disbursement from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account to Respondent consistent with the information provided.

104. **Timing, Amount, and Method of Phase 2 Disbursement From the B1 Navigation Channel and U.S. Moorings Disbursement Special Account.** Within 30 days after

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<sup>1</sup> This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.

<sup>2</sup> This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.

EPA's receipt of a Cost Summary and Certification, as defined by ¶ 105.b, or if EPA has requested additional information under ¶ 105.b or a revised Cost Summary and Certification under ¶ 105.c, within 30 days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Section, Respondent shall be eligible to request an amendment of this Settlement to provide for Phase 2 Disbursement.<sup>3</sup> The amendment will replace the current text of this Paragraph 104 with the text in Appendix F. EPA will agree to such an amendment if: (1) EPA has issued the Notice of Work Completion pursuant to Section XXXXII, and (2) EPA has sufficient funding in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account to provide for the calculated amount of the Phase 2 Disbursement.<sup>4</sup> To ensure sufficient funding in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, EPA will transfer funds from the RD Special Account and/or request such funding pursuant to the Settlement Agreement for Funding Remedial Design. Any amendment under this paragraph will be for the sole purpose of memorializing and facilitating the Phase 2 Disbursement.

EPA's obligation to provide for Phase 2 Disbursement under an amendment to this Settlement Agreement shall be limited to funds available in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account at the time the amendment is finalized. Nothing in this agreement shall be interpreted to require EPA to obligate funds in excess of amounts available in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or construed as implying that Congress will, at a later date, appropriate any funds sufficient to meet any deficiency.

Reimbursement for Phase 2 Disbursement will only be provided for claims made on or before December 31, 2027.

#### **105. Requests for Disbursement of Special Account Funds**

a. Within 30 days after issuance of EPA's written confirmation that a milestone of the Work, as defined in ¶¶ 103 and 104 (Timing, Amount, and Method of Disbursing Funds for Phases 1 and 2), has been satisfactorily completed, Respondent shall submit to EPA a Cost Summary and Certification, as defined in ¶ 105.b, covering the Work performed up to the date of completion of that milestone. Respondent shall not include in any submission costs included in a previous Cost Summary and Certification following completion of an earlier milestone of the Work if those costs have been previously sought or reimbursed pursuant to ¶¶ 103 and 104.

b. Each Cost Summary and Certification shall include a complete and accurate written cost summary and certification of the necessary costs incurred and paid by Respondent for the Work covered by the particular submission, excluding costs not eligible for disbursement under ¶ 106 (Costs Excluded from Disbursement). Each Cost Summary and

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<sup>3</sup> This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.

<sup>4</sup> EPA shall provide written notice to Settling Funding Parties to provide funding to EPA pursuant to paragraph 19 of the Settlement Agreement for Funding Remedial Design.

Certification shall contain the following statement signed by the Chief Financial Officer of Respondent:

To the best of my knowledge, after thorough investigation and review of Respondent's documentation of costs incurred and paid for Work performed pursuant to this Settlement **[insert, as appropriate:** "up to the date of completion of milestone 1," "between the date of completion of milestone 1 and the date of completion of milestone 2,"] I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.

The Chief Financial Officer of Respondent shall also provide EPA a list of the documents that he or she reviewed in support of the Cost Summary and Certification. Upon request by EPA, Respondent shall submit to EPA any additional information that EPA deems necessary for its review and approval of a Cost Summary and Certification.

c. If EPA finds that a Cost Summary and Certification includes a mathematical error, costs excluded under ¶ 106 (Costs Excluded from Disbursement), costs that are inadequately documented, or costs submitted in a prior Cost Summary and Certification, it will notify Respondent and provide it an opportunity to cure the deficiency by submitting a revised Cost Summary and Certification. If Respondent fails to cure the deficiency within 30 days after being notified of, and given the opportunity to cure, the deficiency, EPA will recalculate Respondent's costs eligible for disbursement for that submission and disburse the corrected amount to Respondent in accordance with the procedures in ¶ 103 (Timing, Amount, and Method of Phase 1 Disbursement). Respondent may dispute EPA's recalculation under this Paragraph pursuant to Section XVI (Dispute Resolution). In no event shall Respondent be disbursed funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account in excess of amounts properly documented in a Cost Summary and Certification accepted or modified by EPA.

**106. Costs Excluded from Disbursement.** The following costs are excluded from, and shall not be sought by Respondent for, disbursement from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account: (a) response costs paid pursuant to Sections XV and XXXV (Payments of Response Costs); (b) any other payments made by Respondent to the United States pursuant to this Settlement, including, but not limited to, any Interest or stipulated penalties paid pursuant to Sections XV and XXXV (Payments for Response Costs) or XVIII and XXXVII (Stipulated Penalties); (c) attorneys' fees and costs; (d) costs of any response activities Respondent performs that are not required under, or approved by EPA pursuant to, this Settlement; (e) costs related to Respondent's litigation, settlement, development of potential contribution claims, or identification of defendants; (f) internal costs of Respondent, including but not limited to, salaries, travel, or in-kind services, except for those costs that represent the work of employees of Respondent directly performing the Work; (g) any costs incurred by Respondent prior to the Effective Date except for approved Work completed pursuant to this Settlement; or (h) any costs incurred by Respondent pursuant to Section XVI (Dispute Resolution).

**107. Termination of Disbursements from the Special Account.** EPA's obligation to disburse funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special

Account under this Settlement shall terminate upon EPA's determination that Respondent: (a) has knowingly submitted a materially false or misleading Cost Summary and Certification; (b) has submitted a materially inaccurate or incomplete Cost Summary and Certification, and has failed to correct the materially inaccurate or incomplete Cost Summary and Certification within 30 days after being notified of, and given the opportunity to cure, the deficiency; or (c) failed to submit a Cost Summary and Certification as required by ¶ 105 (Requests for Disbursement of Special Account Funds) within 30 days (or such longer period as EPA agrees) after being notified that EPA intends to terminate its obligation to make disbursements pursuant to this Section because of Respondent's failure to submit the Cost Summary and Certification as required by ¶ 105. EPA's obligation to disburse funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account shall also terminate upon EPA's assumption of performance of any portion of the Work pursuant to ¶ 68 (Work Takeover), when such assumption of performance of the Work is not challenged by Respondent or, if challenged, is upheld under Section XVI (Dispute Resolution). Respondent may dispute EPA's termination of special account disbursements under Section XVI (Dispute Resolution).

**108. Recapture of Special Account Disbursements.** Upon termination of disbursements from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account under Paragraph 107 (Termination of Disbursements from the Special Account), if EPA has previously disbursed funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account for activities specifically related to the reason for termination, e.g., discovery of a materially false or misleading submission after disbursement of funds based on that submission, EPA shall submit a bill to Respondent for those amounts already disbursed from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account specifically related to the reason for termination, plus Interest on that amount covering the period from the date of disbursement of the funds by EPA to the date of repayment of the funds by Respondent. Within 30 days after receipt of EPA's bill, Respondent shall reimburse the EPA Hazardous Substance Superfund for the total amount billed. Payment shall be made in accordance with ¶ 42 (Payments). Upon receipt of payment, EPA may deposit all or any portion thereof in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, the RD Special Account, the Portland Harbor Special Account, or the EPA Hazardous Substance Superfund. The determination of where to deposit or how to use the funds shall not be subject to challenge by Respondent pursuant to the dispute resolution provisions of this Settlement or in any other forum. Respondent may dispute EPA's determination as to recapture of funds pursuant to Section XVI (Dispute Resolution).

**109. Balance of Special Account Funds.** After EPA completes all disbursement to Respondent in accordance with this Section, if any funds remain in the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, EPA will transfer such funds to the RD Special Account for use by the EPA for RD work at or in connection with the Site. If EPA determines such funds are no longer needed for RD work at or in connection with the Site, EPA may transfer such funds to the RD Special Account, the Portland Harbor Special Account, or to the EPA Hazardous Substance Superfund. Any transfer of funds to the RD Special Account, the Portland Harbor Special Account, or the EPA Hazardous Substance Superfund shall not be subject to challenge by Respondent pursuant to the dispute resolution provisions of this Settlement or in any other forum.



**XXXVII. STIPULATED PENALTIES PROVISIONS RELEVANT ONLY TO THE  
NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

110. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in ¶¶ 111.a and 112 for failure to comply with the obligations specified in ¶¶ 111.b and 112, unless excused under Section XVII (Force Majeure). “Comply” as used in the previous sentence includes compliance by Respondent with all applicable requirements of this Settlement, within the deadlines established under this Settlement. If (i) an initially submitted or resubmitted deliverable contains a material defect and the conditions are met for modifying the deliverable under ¶ 5.5 of the SOW; or (ii) a resubmitted deliverable contains a material defect; then the material defect constitutes a lack of compliance for purposes of this Paragraph.

111. Stipulated Penalty Amounts: Payments, Financial Assurance, Major Deliverables, and Other Milestones.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance with any obligation identified in ¶ 111.b:

<b>Penalty Per Violation Per Day</b>	<b>Period of Noncompliance</b>
\$ 500	1st through 7th day
\$ 1,000	8th through 14th day
\$ 2,500	15th through 30th day
\$ 5,000	31st day and beyond

**b. Obligations**

(1) Payment of any amount due under Section XV (Payment of Response Costs).

(2) Establishment and maintenance of financial assurance in accordance with Section XXXX (Financial Assurance).

(3) Establishment of an escrow account to hold any disputed Future Response Costs under ¶ 45 (Contesting Future Response Costs).

(4) Submission of timely and quality deliverables for tasks 1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b, 8 9 10, 11, 12 listed under ¶ 6.2 of the SOWs found at Appendix B and Appendix C.

112. **Stipulated Penalty Amounts: Other Deliverables.** The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate deliverables required by this Settlement, other than those specified in ¶ 111:

**Penalty Per Violation Per Day****Period of Noncompliance**

\$ 250

1st through 7th day

\$ 500

8th through 14th day

\$ 1,000

15th through 30th day

\$ 2,500

31st day and beyond

113. In the event that EPA assumes performance of a portion or all of the Work pursuant to ¶ 68 (Work Takeover), Respondent shall be liable for a stipulated penalty in the amount of \$75,000 or 25% of the cost of the Work EPA performs, whichever is less. Stipulated penalties under this Paragraph are in addition to the remedies available to EPA under ¶¶ 68 (Work Takeover) and 132 (Access to Financial Assurance).

114. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. Penalties shall continue to accrue during any dispute resolution period except as provided below, and shall be paid within 15 days after the agreement or the receipt of EPA's decision. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under ¶ 5.5 (Approval of Deliverables) of the SOW, during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (b) with respect to a decision by the Regional Administrator, EPA Region 10 or the Deputy Regional Administrator under Section XVI (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the Regional Administrator or Deputy Regional Administrator issues a final decision regarding such dispute. Nothing in this Settlement shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement.

115. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement, EPA may give Respondent written notification of the failure and describe the noncompliance. EPA may send Respondent a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondent of a violation.

116. All penalties accruing under this Section shall be due and payable to EPA within 30 days after Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the Dispute Resolution procedures under Section XVI (Dispute Resolution) within the 30-day period. All payments to EPA under this Section shall indicate that the payment is for stipulated penalties and shall be made in accordance with ¶ 42 (Payments by Respondent for EPA Future Response Costs).

117. If Respondent fails to pay stipulated penalties when due, Respondent shall pay Interest on the unpaid stipulated penalties as follows: (a) if Respondent has timely invoked dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to ¶ 114 until the date of payment; and (b) if Respondent fails to timely invoke dispute resolution, Interest shall accrue from the date of demand under ¶ 116 until the date of payment. If Respondent fails to pay stipulated penalties and Interest when due, the United States may institute proceedings to collect the penalties and Interest.

118. The payment of penalties and Interest, if any, shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement.

119. Nothing in this Settlement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3); provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this Settlement, except in the case of a willful violation of this Settlement or in the event that EPA assumes performance of a portion or all of the Work pursuant to ¶ 68 (Work Takeover).

120. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement.

#### **XXXVIII. COVENANTS BY RESPONDENT RELEVANT ONLY TO THE NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

121. **Covenants by Performing Parties to Settling Funding Parties.** Subject to EPA's receipt of funds from Settling Funding Parties as required by the Settlement Agreement for Funding Remedial Design, Performing Parties covenant not to sue and agree not to assert any claims or causes of action in any forum, judicial or otherwise, against the Settling Funding Parties, or their contractors or employees, with respect to the work under this Settlement or the RD Payments provided under the Settlement Agreement for Funding Remedial Design. For purposes of this paragraph "work" shall mean all activities and obligations Performing Parties are required to perform under this Settlement, except those required by Section XI (Record Retention). Performing Parties agree that Settling Funding Parties have the right to enforce this covenant.

#### **XXXIX. EFFECT OF SETTLEMENT/CONTRIBUTION PROVISIONS RELEVANT ONLY TO THE NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

122. Nothing in this Amendment No. 2 shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this amendment, other than the Settling Funding Parties as provided in ¶ 121 (Covenants by Performing Parties to Settling Funding Parties) of this Settlement. Except as provided in Section XXI and XXXVIII (Covenants by

Respondent), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), defenses, claims, demands, and causes of action that each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this Settlement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

123. The Parties agree that this Settlement constitutes an administrative settlement pursuant to which Respondent has, as of the Effective Date, resolved liability to the United States within the meaning of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, or as may be otherwise provided by law, for the “matters addressed” in this Settlement. The “matters addressed” in this Settlement are solely the work conducted under Appendix B and Appendix C and EPA Future Response Costs paid.

124. The Parties further agree that this Settlement constitutes an administrative settlement pursuant to which Respondent has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

125. Respondent shall, with respect to any suit or claim brought by it for matters related to this Settlement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Respondent also shall, with respect to any suit or claim brought against it for matters addressed in this Settlement, notify EPA in writing within 10 days after service of the complaint or claim upon it. In addition, Respondent shall notify EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial, for matters related to this Settlement.

126. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenant by EPA set forth in Section XIX (Covenants by EPA).

#### **XXXX. FINANCIAL ASSURANCE PROVISIONS RELEVANT ONLY TO THE NAVIGATION CHANNEL AND U.S. MOORINGS PROJECT AREAS**

127. In order to ensure the completion of the Work conducted under Appendix B and Appendix C, Respondent shall secure financial assurance, initially in the amount of \$6,300,000 (“Estimated Cost of the Work”), for the benefit of EPA. The financial assurance must be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA or under the “Financial Assurance - Settlements” category on the

Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>, and satisfactory to EPA. Respondent may use multiple mechanisms if they are limited to surety bonds guaranteeing payment, letters of credit, trust funds, and/or insurance policies.

a. A surety bond guaranteeing payment and/or performance of the Work that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. An irrevocable letter of credit, payable to or at the direction of EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. a trust fund established for the benefit of EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;

d. A policy of insurance that provides EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency;

e. A demonstration by a Respondent that it meets the financial test criteria of ¶ 129, accompanied by a standby funding commitment, which obligates the affected Respondent to pay funds to or at the direction of EPA, up to the amount financially assured through the use of this demonstration in the event of a Work Takeover; or

f. A guarantee to fund or perform the Work executed in favor of EPA by a company: (1) that is a direct or indirect parent company of a Respondent or has a “substantial business relationship” (as defined in 40 C.F.R. § 264.141(h)) with a Respondent; and (2) can demonstrate to EPA’s satisfaction that it meets the financial test criteria of ¶ 129.

128. Respondent shall, within 30 days of the Effective Date, obtain EPA’s approval of the form of Respondent’s financial assurance. Within 30 days of such approval, Respondent shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the EPA Region 10, Office of Regional Counsel, 1200 Sixth Avenue, Suite 155, M/S 11-C07, Seattle, WA 98101.

129. Respondent seeking to provide financial assurance by means of a demonstration or guarantee under ¶ 127.e or 127.f, must, within 30 days of the Effective Date:

a. Demonstrate that:

(1) The affected Respondent or guarantor has:

i. Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total

liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

- ii. Net working capital and tangible net worth each at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

(2) The affected Respondent or guarantor has:

- i. A current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and
- ii. Tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

b. Submit to EPA for the affected Respondent or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant substantially identical to the sample letter and reports available from EPA or under the "Financial Assurance - Settlements" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>.

130. Respondent providing financial assurance by means of a demonstration or guarantee under ¶ 127.e or 127.f must also:

- a. Annually resubmit the documents described in ¶ 129.b within 90 days after the close of the affected Respondent's or guarantor's fiscal year;
- b. Notify EPA within 30 days after the affected Respondent or guarantor determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and
- c. Provide to EPA, within 30 days of EPA's request, reports of the financial condition of the affected Respondent or guarantor in addition to those specified in ¶ 129.b; EPA may make such a request at any time based on a belief that the affected Respondent or guarantor may no longer meet the financial test requirements of this Section.

131. Respondent shall diligently monitor the adequacy of the financial assurance. If Respondent becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, Respondent shall notify EPA of such information within 7 days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify the Respondent of such determination. Respondent shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. EPA may extend this deadline for such time as is reasonably necessary for the Respondent, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. Respondent shall follow the procedures of ¶ 133 (Modification of Amount, Form, or Terms of Financial Assurance) in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. Respondent's inability to secure financial assurance in accordance with this Section does not excuse performance of any other obligation under this Settlement.

#### **132. Access to Financial Assurance**

a. If EPA issues a notice of implementation of a Work Takeover under ¶ 68, then, in accordance with any applicable financial assurance mechanism and/or related standby funding commitment, EPA is entitled to: (1) the performance of the Work; and/or (2) require that any funds guaranteed be paid in accordance with ¶ 132.d.

b. If EPA is notified by the issuer of a financial assurance mechanism that it intends to cancel such mechanism, and the Respondent fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with ¶ 132.d.

c. If, upon issuance of a notice of implementation of a Work Takeover under ¶ 68, either: (1) EPA is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism and/or related standby funding commitment,

whether in cash or in kind, to continue and complete the Work; or (2) the financial assurance is a demonstration or guarantee under ¶ 127.e or 127.f, then EPA is entitled to demand an amount, as determined by EPA, sufficient to cover the cost of the remaining Work to be performed. Respondent shall, within 30 days of such demand, pay the amount demanded as directed by EPA.

d. Any amounts required to be paid under this ¶ 132 shall be, as directed by EPA: (i) paid to EPA in order to facilitate the completion of the Work by EPA or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the FDIC, in order to facilitate the completion of the Work by another person. If payment is made to EPA, EPA may deposit the payment into the EPA Hazardous Substance Superfund or into the Portland Harbor Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

e. All EPA Work Takeover costs not paid under this ¶ 132 must be reimbursed as Future Response Costs under Section XV (Payments of Response Costs).

**133. Modification of Amount, Form, or Terms of Financial Assurance.** Respondent may submit, on any anniversary of the Effective Date or at any other time agreed to by the Parties, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to EPA in accordance with ¶ 128, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. EPA will notify Respondent of its decision to approve or disapprove a requested reduction or change pursuant to this Paragraph. Respondent may reduce the amount of the financial assurance mechanism only in accordance with: (a) EPA's approval; or (b) if there is a dispute, the agreement or written decision resolving such dispute under Section XVI (Dispute Resolution). Respondent may change the form or terms of the financial assurance mechanism only in accordance with EPA's approval. Any decision made by EPA on a request submitted under this Paragraph to change the form or terms of a financial assurance mechanism shall not be subject to challenge by Respondent pursuant to the dispute resolution provisions of this Settlement or in any other forum. Within 30 days after receipt of EPA's approval of, or the agreement or decision resolving a dispute relating to, the requested modifications pursuant to this Paragraph, Respondent shall submit to EPA documentation of the reduced, revised, or alternative financial assurance mechanism in accordance with ¶ 128.

**134. Release, Cancellation, or Discontinuation of Financial Assurance.** Respondent may release, cancel, or discontinue any financial assurance provided under this Section only: (a) in accordance with EPA's approval of such release, cancellation, or discontinuation; or (b) if there is a dispute regarding the release, cancellation, or discontinuance of any financial assurance, in accordance with the agreement or final decision resolving such dispute under Section XVI (Dispute Resolution).



#### **XXXXI. INTEGRATION/APPENDICES**

135. This Settlement, as amended, and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement. The parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement. The following appendices are attached to and incorporated into this Settlement:

- a. Appendix B is the SOW for the B1 Navigation Channel Project Area
- b. Appendix C is the SOW for the U.S. Moorings Project Area
- c. Appendix D is a map of the B1 Navigation Channel Project Area
- d. Appendix E is a map of the U.S. Moorings Project Area
- e. Appendix F is Phase 2 Disbursement Amendment language

#### **XXXXII. NOTICE OF WORK COMPLETION**

136. When EPA determines that all Work has been fully performed in accordance with this Settlement with respect to the SOW for the B1 Navigation Channel Project Area (Appendix B) and the SOW for U.S. Moorings Project Area (Appendix C), with the exception of any continuing obligations as provided in ¶ 138, EPA will provide written notice to Respondent. Respondent may request that EPA make this determination.

137. If EPA determines that any such Work has not been completed in accordance with this Settlement, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent correct the deficiencies or modify the RD Work Plan if appropriate to correct such deficiencies. Respondent shall correct the deficiencies, or, if appropriate, implement the modified and approved RD Work Plan and shall submit a modified 100% Final Design Report for EPA approval in accordance with the EPA notice, subject to Respondent's right to invoke dispute resolution under Section XVI of the Settlement Agreement. If approved, EPA will issue the Notice of Work Completion.

138. Issuance of the Notice of Work Completion does not affect Respondent's continuing obligations: (1) obligations under Sections IX (Access/Institutional Controls), and X (Access to Information), and XI (Record Retention); and (2) reimbursement of EPA's Future Response Costs under Section XV (Payment of Response Costs) of the Settlement.

**XXXXIII. EFFECTIVE DATE**

139. This Settlement, as amended, shall be effective upon signature by the Superfund and Emergency Management Division, EPA Region 10.

**IT IS SO AGREED AND ORDERED;**

March 4, 2020

Dated

**U.S. ENVIRONMENTAL PROTECTION AGENCY:**

A handwritten signature in blue ink, appearing to read 'Sheila Fleming', is written over a horizontal line.

*for*

Sheila Fleming, Acting Director  
Superfund and Emergency Management Division  
EPA Region 10

Signature Page for Settlement regarding the Portland Harbor Superfund Site

**FOR** NW Natural  
[Print name of Respondent]

02/28/2020

Dated



MardiLyn Saathoff  
Sr. Vice President Regulatory & General Counsel  
NW Natural  
220 NW 2<sup>nd</sup> Avenue  
Portland, OR 97220

## **Appendix B**

### **Statement of Work**

**REMEDIAL DESIGN STATEMENT OF WORK  
PORTLAND HARBOR SUPERFUND SITE**

**B1 Navigation Channel Project Area**

**Portland, Multnomah County, State of Oregon**

**EPA Region 10**

**February 2020**

**TABLE OF CONTENTS**

1.	INTRODUCTION .....	1
2.	COMMUNITY INVOLVEMENT.....	2
3.	REMEDIAL DESIGN .....	3
4.	REPORTING .....	14
5.	DELIVERABLES .....	15
6.	SCHEDULES .....	23
7.	STATE AND TRIBAL PARTICIPATION .....	25
8.	REFERENCES .....	26

**Attachments**

Figure 1. Optimized Remedial Design Timeline

Attachment 1. Program Data Management Plan for Portland Harbor

Attachment 2. Template Sufficiency Assessment Summary Table

## **1. INTRODUCTION**

- 1.1 Purpose of the Statement of Work.** The U.S. Environmental Protection Agency (EPA) signed a Record of Decision for the Portland Harbor Superfund Site (Site) on January 3, 2017 (ROD) that selected Remedial Actions (RA) for the in-river portion of the Site from approximately river miles (RMs) 1.9 to 11.8. The ROD provides information about how Site data will influence Remedial Design (RD), remedial construction, and future maintenance of remediated areas. The ROD states that the actual technologies assigned during RD will be dependent on a number of characteristics and environmental conditions to ensure that the final constructed remedy is appropriate for area-specific conditions, e.g., Sediment Management Areas (SMAs). The ROD also identifies post-ROD / RD sampling activities that will support and refine the Site's Conceptual Site Model (CSM) to implement RD and RA. Any reference to the ROD in this SOW, also includes any future ROD amendments or Explanations of Significant Differences EPA may issue.

This Statement of Work (SOW) sets forth the procedures and requirements for implementing the RD Work at the B1 Navigation Channel Project Area (hereinafter identified as the Project Area), defined as the active cleanup area designated on Figures 31b and c of the ROD between approximately River Mile 5.1 and River Mile 6.5 in the federally-authorized navigation channel of the Willamette River, and more specifically depicted on the map attached as Appendix D to the Settlement Agreement.

### **1.2 Structure of the SOW**

- Section 2 (Community Involvement) sets forth EPA's and Respondent's responsibilities for community involvement.
- Section 3 (Remedial Design) sets forth the process for developing the RD, which includes the submission of specified primary deliverables.
- Section 4 (Reporting) sets forth Respondent's reporting obligations.
- Section 5 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Respondent's submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 6 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the RD.
- Section 7 (State and Tribal Participation) addresses State and Tribal participation.
- Section 8 (References) provides a list of references, including Uniform Resource Locations (URLs).

- 1.2** The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Settlement Agreement, have the meanings assigned to them in CERCLA, in such regulations, or in the Settlement Agreement, except that the term “Paragraph” or “¶” means a paragraph of the SOW, and the term “Section” means a section of the SOW, unless otherwise stated.
- 1.3 Relationship to other work at the Portland Harbor Superfund Site.** While all approved data, including baseline data will be considered, all final decisions regarding RD at the Project Area, including delineation of SMAs, implementation of any sampling necessary for design, and application of the ROD’s technology matrix, will be made under this Settlement Agreement and this SOW.

## **2. COMMUNITY INVOLVEMENT**

### **2.1 Community Involvement (CI) Responsibilities**

- (a) EPA has the lead responsibility for developing and implementing CI activities at the Site. Previously (during the Remedial Investigation/Feasibility Study (RI/FS) phase), EPA developed a Community Involvement Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities specific to the RD Work or the Project Area that are not already addressed or provided for in the existing CIP, including, if applicable, any Technical Assistance Grant (TAG), any use of the Technical Assistance Services for Communities (TASC) contract, and/or any Technical Assistance Plan (TAP).
- (b) If requested by EPA, Respondent shall participate in CI activities, including participation in: (1) the preparation of information regarding the RD Work for dissemination to the public, with consideration given to including mass media and/or Internet notification; and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondent’s support of EPA’s CI activities may include providing online access to initial submissions and updates of deliverables to: (1) any Community Advisory Groups, (2) any TAG recipients and their advisors; and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Respondent’s responsibilities for CI activities. All CI activities conducted by Respondent at EPA’s request are subject to EPA’s oversight. Upon EPA’s request, Respondent shall make Project Area-related data and information available to the public. EPA plans to coordinate its community outreach efforts with DEQ.
- (c) Respondent will explore the possibility of participating in EPA’s Superfund Job Training Initiative Program (SuperJTI) as it may relate to the RD Work or the Project Area. This program provides job training to communities affected by Superfund sites.

- (d) Respondent's CI Coordinator. Respondent shall, within 30 days of the effective date of the Settlement, designate and notify EPA of Respondent's CI Coordinator. Respondent may hire a contractor for this purpose. Respondent's notice must include the name, title, and qualifications of the Respondent's CI Coordinator. Respondent's CI Coordinator is responsible for providing support regarding EPA's CI activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the RD Work or the Project Area.

### **3. REMEDIAL DESIGN**

#### **3.1 Sufficiency Assessment.**

- (a) The Portland Harbor ROD Section 14.2.11 states that implementation of the Selected Remedy may need to be conducted in phases and/or work sequenced based on consideration of a range of factors including source control actions and recontamination potential. To evaluate source control actions and recontamination potential, a Sufficiency Assessment Report shall be submitted to EPA for comment and approval.

The objective of the Sufficiency Assessment is to evaluate upland (direct discharges, groundwater, river bank, overwater) and in-water sources of contaminants to determine whether they have been adequately investigated and sufficiently controlled or considered such that the RA can proceed. The Sufficiency Assessment will consider whether upland (direct discharges, groundwater, river bank, overwater) and in-water sources will adversely impact the short- or long-term effectiveness of the proposed RA. The Sufficiency Assessment should be completed following the schedule deadlines in ¶ 6.2.

- (b) The Sufficiency Assessment shall consider potential impacts from a range of potential sources, including but not limited to:
  - (1) Upland pathways (direct discharges, groundwater, river bank, and overwater);
  - (2) In-water sources of recontamination;
  - (3) Resuspension of sediments from natural and anthropogenic activities;
  - (4) Factors that may impact sediment cap effectiveness;
  - (5) Potential future use for near shore land and in-water uses; and
  - (6) Other future conditions (e.g., climate change impacts) that may impact recontamination potential.



- (c) The components of the Sufficiency Assessment Report shall include, as applicable to the Project Area:
- (1) Description of the Project Area setting, the upland and in-water source areas being evaluated and an overview of the remainder of the report.
  - (2) A CSM that describes the geographically relevant upland (direct discharges, groundwater, river bank, and overwater) and in-water sources of contamination, contaminants of concern (COCs) and migration pathways into the Project Area.
  - (3) A summary of available information regarding the source control status of direct discharges, groundwater, river bank, and overwater sources of COCs into the Project Area that may affect achieving any of the remedial action objectives by comparing to ROD Table 17 cleanup levels and Table 21 RALs and PTW thresholds as one line of evidence; identification of any sources, COCs and pathways that have not been effectively addressed and could impact the RA; and identification of data gaps.
  - (4) A summary of in-water sources of COCs to the Project Area that may affect achieving any of the remedial action objectives. One line of evidence in this evaluation will be comparing to ROD Table 17 cleanup levels and Table 21 RALs and PTW Thresholds including a description of any proposed measures to address in-water sources including the timing and expected effectiveness of these measures.
  - (5) An assessment of the degree to which the proposed remedy will address upland (direct discharges, overwater, groundwater, and river bank) and in-water sources of COCs to the Project Area.
  - (6) An assessment of the degree to which changed future conditions (e.g., changes in land and waterway use and climate change) may affect recontamination potential at the Project Area.
  - (7) The results of the Sufficiency Assessment that includes evaluation of the sufficiency of in-water source controls to reduce the potential for recontaminating the selected remedy following implementation. The assessment will consider the general magnitude of any potential recontamination effects and discuss implications to the selected remedy for the Project Area. The discussion will also present the limitations of the assessment approaches and any remaining data gaps.
  - (8) A sufficiency assessment template table of upland sources (direct discharges, groundwater, overwater, river bank) that explicitly identifies the potential sources and pathways at the Project Area and categorizes the

status of each source using the outcome categories: (A) sources are sufficiently controlled; (B) sources are conditionally controlled; and (C) sources are not sufficiently assessed or controlled. An example table is provided in Attachment 2 of this SOW. Completing the sufficiency assessment summary table is a valuable exercise to ensure that there is consensus on the status of potential sources at the Project Area. The goal of this table is to serve as the basis for EPA's sufficiency determination in informing respondent whether cleanup can go forward and, if potential sources remain, how those sources should be integrated into the in-water design. The sufficiency assessment summary table shall be updated and included in the Pre-Final (95%) RD as a final check to ensure remedial construction can commence.

- (9) Description of how data gaps, if any, will be addressed.
- (10) Conclusions and Recommendations. The Sufficiency Assessment Report shall present conclusions and recommendations. Recommendations will be expressed as one of three potential outcomes:
  - (i) Sources are sufficiently controlled: the report recommends the specified area of sediment cleanup proceed based on reasonable confidence that the relevant recontamination potential is as minimal as possible.
  - (ii) Sources are conditionally controlled: the report recommends the specified area of sediment cleanup proceed so long as certain additional controls or oversight are implemented in a reasonable timeframe or that any area information gaps are considered.
  - (iii) Sources are not sufficiently assessed or controlled: the report recommends that specified area of sediment cleanup not proceed until additional controls have been implemented and assessed for effectiveness.
- (11) References section listing each document cited in the report
- (d) The Sufficiency Assessment does not itself satisfy the requirements of the federal Clean Water Act, CERCLA or other authorities. For example, a site or area that has been evaluated for source control sufficiency for the in-water RA may still be required to take additional measures not governed by this Settlement Agreement to meet water quality permit or upland cleanup requirements.

Following remedy implementation, post-construction monitoring will be performed to evaluate remedy effectiveness. Post-construction monitoring will be designed to distinguish between recontamination and assessing whether the

remedy is functioning as intended to demonstrate long-term performance of the remedy across appropriate temporal and spatial scales. See ¶ 5.6(i) of this SOW.

**3.2 Pre-Design Investigation.** The purpose of the Pre-Design Investigation (PDI) is to identify and address data gaps by conducting field investigations to develop the Basis of Design Report and RD Work Plan.

- (a) **PDI Work Plan.** Respondent shall submit a PDI Work Plan (PDIWP) for EPA comment and approval. The PDIWP must include:
  - (1) An evaluation and summary of all available existing data, including baseline data within/near the B1 Navigation Channel Project Area, and description of data gaps for: preliminary SMA delineation consistent with EPA’s June 6, 2017 *Portland Harbor Superfund Site, Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring*; CSM refinement consistent with Section 14.2 (*Post-ROD Data Gathering and Other Information Verification*) of the ROD; and application of ROD Figure 28 (*Technology Application Decision Tree*). This includes additional field investigations, that must be completed to support RD and to refine the CSM. Data gap analysis will include:
    - (i) Surface and subsurface contaminant concentrations;
    - (ii) Surface water, sediment pore water and groundwater data;
    - (iii) Bathymetry;
    - (iv) Flood-rise analysis; and
    - (v) Non-aqueous phase liquid (NAPL) extent and mobility delineation, if applicable. NAPL, as consistent with the ROD, refers to “substantial presence of product” as defined in Section 3.6.2.1 of the Statement of Work to the 2009 ASAOC for Removal Action at the Gasco Sediments Site (CERCLA Docket No. 10-2009-0255) (Appendix A of the Settlement Agreement).
  - (2) A Project Area Field Sampling Plan, as described in ¶ 5.6(c) (Supporting Deliverables) of this SOW. The plan includes the details of the media to be sampled, contaminants or parameters for which sampling will be conducted, location (areal extent and depths), number of samples, and a project schedule;
  - (3) A Project Area Quality Assurance Project Plan (QAPP) as described in ¶ 5.6(d) (Supporting Deliverables) of this SOW;

- (4) A Project Area Health and Safety Plan (HASP), as described in ¶ 5.6(a) (Supporting Deliverables) of this SOW;
  - (5) A Project Area Emergency Response Plan as described in ¶ 5.6(b) (Supporting Deliverables) of this SOW; and
  - (6) A description of all necessary actions to ensure compliance with ¶ 3.13 (Off-Site Shipments) of this SOW.
- (b) **PDI Evaluation Report.** Following implementation of the PDI scope in the approved PDIWP, Respondent shall submit a PDI Evaluation Report for EPA comment and approval. This report must include:
- (1) Summary of the investigations performed;
  - (2) Summary of investigation results;
  - (3) Summary of validated data (i.e., tables and graphics);
  - (4) Data validation reports and laboratory data reports;
  - (5) Narrative interpretation of data and results;
  - (6) Results of statistical and modeling analyses, if applicable;
  - (7) Photographs documenting the work conducted; and
  - (8) Conclusions and recommendations on whether the data are sufficient to complete the BODR.

**3.3 Basis of Design Report (BODR).** The purpose of the BODR is to refine the SMA, update the CSM and refine the technology assignments to the SMA consistent with the Decision Tree in Figure 28 of the ROD. To the extent practicable, the BODR will incorporate information, evaluations and approaches developed in the Technical Evaluations Work Plan and BODR prepared under Appendix A of the Settlement Agreement. Respondent shall submit a BODR for EPA comment and approval. This document will describe the objectives, overall approach, schedule, milestone check in points and specific elements of the BODR. The BODR will:

- (a) Summarize the results of the sufficiency assessment and whether potential sources of recontamination have been adequately investigated and controlled or considered such that the RA can proceed.
- (b) Summarize existing site conditions and site factors which affect technology assignments including detailed reasonably anticipated future navigation and land

## **B1 Navigation Channel Project Area Remedial Design Statement of Work**

use information and other data, as depicted in the Decision Tree, and refinement of the CSM pertaining to the Project Area;

- (c) Summarize design criteria applicable to the Project Area as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995) and consistent with Section 14.2.9 (*Design Requirements*) and Section 14.2.10 (*Performance Standards*) of the ROD;
- (d) Describe Decision Tree analysis and identify a preferred remedial approach, including technology assignments and Project Area specific institutional controls, based on consistency with the applicable Remedial Action Objectives (RAOs) and ROD elements for the Project Area;
- (e) Identify long-term monitoring and maintenance considerations for the Project Area;
- (f) Identify design studies for RD, if any, such as subsurface and surface sediment sampling and benthic toxicity testing that may be needed to evaluate attainment of applicable RAOs and address proposed remedial technology means and methods, and gather other information necessary for RD for the Project Area; and
- (g) Describe a sequencing plan as well as an overall schedule to complete the design studies, RD and RA for the Project Area.

**3.4 RD Work Plan (RDWP).** Respondent shall submit a RDWP for EPA comment and approval. The RDWP must include:

- (a) Plans for implementing all RD activities identified in this SOW, in the BODR, in the RDWP, or as required by EPA to be conducted to develop the RD for the Project Area;
- (b) A description of the overall management strategy for performing the RD, including a proposal for phasing of design and construction, if applicable;
- (c) Detailed reasonably anticipated future navigation and land use information and other data to inform the Decision Tree in Figure 28 of the ROD;
- (d) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the RA as necessary to implement the Work;
- (e) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;

**B1 Navigation Channel Project Area Remedial Design  
Statement of Work**

- (f) Descriptions of any areas requiring clarification and/or anticipated problems, if any (e.g., data gaps);
- (g) Description of studies and design phases for any on-site transload facility to be used to transload dredged materials from the Project Area or any other area of the Site;
- (h) Description of any proposed supplemental PDI;
- (i) Description of any proposed treatability study;
- (j) Descriptions of any applicable permitting requirements and other regulatory requirements, if any;
- (k) Description of plans for obtaining access in connection with the Work, such as access agreements, property acquisition, property leases, and/or easements; and
- (l) Updates of all supporting deliverables required to accompany the PDIWP or supplemental PDIWP.

**3.5 Meetings.** Respondent shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.

**3.6 Supplemental PDI.** The purpose of the Supplemental PDI is to address data gaps identified in the RDWP by conducting additional field investigations in the Project Area.

- (a) **Supplemental PDI Work Plan.** If EPA requests, Respondent shall submit a Supplemental PDI Work Plan (SPDIWP) for EPA comment and approval. The SPDIWP must include all elements as described in ¶ 3.2(a).
- (b) **Supplemental PDI Evaluation Report.** Following the Supplemental PDIWP, Respondent shall submit a Supplemental PDI Evaluation Report for EPA comment and approval. This report must include the same elements as described in ¶ 3.2(b).

**3.7 Treatability Study.** If determined necessary by EPA, Respondent shall perform a Treatability Study (TS) to evaluate the effectiveness of a remedial technology (e.g., reactive cap).

- (a) Respondent shall submit a TS Work Plan (TSWP) for EPA comment and approval. Respondent shall prepare the TSWP in accordance with *EPA's Guide for Conducting Treatability Studies under CERCLA, Final* (Oct. 1992), as

supplemented for RD by the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995).

- (b) Following completion of the TS, Respondent shall submit a TS Evaluation Report for EPA comment and approval.
- (c) EPA may require Respondent to supplement the TS Evaluation Report and/or to perform additional treatability studies.

**3.8 Preliminary (30%) RD.** Respondent shall submit a Preliminary (30%) RD for the Project Area for EPA's comment. All information and activities to be performed under the Preliminary (30%) RD shall be included and updated, as needed, in subsequent RD submittals (i.e., 60%, 95%, and 100%). The Preliminary RD must include:

- (a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
- (b) Preliminary drawings and specifications;
- (c) Descriptions of permit requirements, if applicable;
- (d) A description of how the RA will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009), and the information described in Appendix M of the Portland Harbor Feasibility Study (June 2016);
- (e) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA;
- (f) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 5.6 (Supporting Deliverables): Institutional Controls Implementation and Assurance Plan; Waste Designation Memo; Biological Assessment; Clean Water Act Analysis; Project Area Monitoring Plan; Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; O&M Plan; and O&M Manual.
- (g) Respondent must demonstrate that any transload facility it intends to use is appropriate for handling and transloading contaminated sediments and other materials that might be dredged by Respondent. In the event Respondent wishes to use a transload facility within the Site for transferring dredged materials from the Project Area, Respondent will provide design specifications for that transload facility, whether prepared by Respondent or another owner or operator. If necessary, EPA shall assist Respondent in obtaining the required design specifications from the transload facility owner or operator. Such specifications

## **B1 Navigation Channel Project Area Remedial Design Statement of Work**

shall include information for transload-specific Applicable or Relevant and Appropriate Requirements that must be complied with to build and operate the transload facility. In addition, the transload facility's design specifications must address the following: (1) location of transload operations; (2) identification of contaminated groundwater and soil within the foot print of the transload operations; and (3) plans to remove or remediate these contaminated media during construction of the transload facility, or an analysis of how the presence and operation of the transload facility will not inhibit or prevent implementation of ongoing source control measures and potential remedial measures identified in DEQ's pending upland Record of Decision for the upland property, if applicable. If Respondent intends to use a transload facility outside of the Portland Harbor Superfund Site (see NCP definition of "on-site") for dredged materials from the Project Area, the design specifications provided by Respondent (which may be prepared by another owner or operator) must include Clean Water Act (CWA) Sections 404 and 401 permit application design information to minimize spillage, offsite tracking, worker exposure and ensure stormwater management for approval before submittal to the United States Army Corps of Engineers and DEQ, respectively.

- (h) Respondent shall use best efforts to include in the RD information from owners of submerged lands that are within the Project Area. Such information shall include, but not be limited to, the owner's future reasonably anticipated river use that should be considered in the decision tree process and design, shipping schedules, and known buried infrastructure. The RD shall document in writing the landowners that were contacted and the information received for all properties in the Project Area. EPA and DEQ assistance may be required to gain information from the property owner.

**3.9 Intermediate (60%) RD.** Respondent shall submit the Intermediate (60%) RD for EPA's comment. The Intermediate RD must: (a) be a continuation and expansion of the Preliminary RD; (b) address EPA's comments regarding the Preliminary RD; and (c) include the same elements as are required for the Preliminary (30%) RD.

**3.10 Pre-Final (95%) RD.** Respondent shall submit the Pre-final (95%) RD for EPA's comment. The Pre-final RD must be a continuation and expansion of the previous design submittal and must address EPA's comments regarding the Intermediate RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD must include:

- (a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's MasterFormat 2016;

## **B1 Navigation Channel Project Area Remedial Design Statement of Work**



- (b) Survey and engineering drawings showing existing Project Area features, such as elements, property borders, easements, and Project Area conditions;
- (c) Pre-Final versions of the same elements and deliverables as are required for the Intermediate RD;
- (d) A specification for photographic documentation of the RA; and
- (e) Updates of all supporting deliverables required to accompany the Preliminary (30%) RD, including an updated sufficiency assessment summary table per ¶ 3.1(c)(8) as a final check to ensure remedial construction can commence.

**3.11 Final (100%) RD.** Respondent shall submit the Final (100%) RD for EPA approval. The Final RD must address EPA’s comments on the Pre-final RD and must include final versions of all Pre-final deliverables.

### **3.12 Emergency Response and Reporting**

- (a) **Emergency Response and Reporting.** If any event occurs during performance of the RD Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondent shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 3.12(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.
- (b) **Release Reporting.** Upon the occurrence of any event during performance of the RD Work that Respondent are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondent shall immediately notify the National Response Center (phone 1-800-424-8802) and authorized EPA officer orally.
- (c) The “authorized EPA officer” for purposes of immediate oral notifications and consultations under ¶ 3.12(a) and ¶ 3.12(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 10 (if neither EPA Project Coordinator is available).
- (d) For any event covered by ¶ 3.12(a) and ¶ 3.12(b), Respondent shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the

actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.

- (e) The reporting requirements under ¶ 3.12 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

### **3.13 Off-Site Shipments**

- (a) Respondent may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondent obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- (b) Respondent may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, it provides notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondent also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondent shall provide the notice as soon as practicable after the award of the contract and before the Waste Material is shipped.
- (c) Respondent may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's *Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

## **4. REPORTING**

- 4.1 Progress Reports.** Commencing with the quarter following the Effective Date of the Settlement Agreement and until issuance of Notice of Work Completion pursuant to Section XXXXII of the Settlement Agreement, Respondent shall submit progress reports to EPA on a quarterly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:
- (a) The actions that have been taken toward achieving compliance with the Settlement Agreement;
  - (b) A summary of all results of validated sampling, tests, and all other data received or generated by Respondent;
  - (c) A list of all deliverables that Respondent submitted to EPA;
  - (d) A list of all activities scheduled for the next quarter;
  - (e) Information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the RD Work, and a description of efforts made to mitigate those delays or anticipated delays;
  - (f) A list of any modifications to the work plans or other schedules that Respondent has proposed or that have been approved by EPA; and
  - (g) A list of all activities undertaken in support of the CIP during the reporting period and those to be undertaken in the next quarter.
- 4.2 Notice of Progress Report Schedule Changes.** If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 4.1(d), changes, Respondent shall notify EPA of such change at least seven days before performance of the activity.

## **5. DELIVERABLES**

- 5.1 Applicability.** Respondent shall submit all deliverables for EPA approval or for EPA comment as specified in the SOW. In the event ODEQ is authorized as the Project Coordinator, Respondent shall submit deliverables to ODEQ with copies to EPA. If neither is specified, the deliverable does not require EPA's approval or comment. ¶ 5.2 (In Writing) through 5.4 (Formatting Specifications) apply to all deliverables. ¶ 5.5 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.
- 5.2 In Writing.** All deliverables under this SOW must be in writing unless otherwise specified.
- 5.3 General Requirements for Deliverables**
- (a) Except as otherwise provided in this SOW, Respondent shall direct all deliverables required by this SOW to the EPA Project Coordinator: Sean Sheldrake, Remedial Project Manager, Superfund and Emergency Management Division, U.S. Environmental Protection Agency, 1200 6th Ave., Ste. 155, M/S 12-D12-1, phone (206) 553-1220, email sheldrake.sean@epa.gov.
  - (b) All deliverables provided to the State and Tribal representatives in accordance with ¶ 7 (State and Tribal Participation) shall be directed to
    - David Lacey and Sarah Greenfield, Department of Environmental Quality, Northwest Region Portland Office, 700 NE Multnomah St. Ste 600, Portland, OR 97232-4100, (503) 229-5354 (David Lacey), david.j.lacey@state.or.us, (503) 229-5445 (Sarah Greenfield), sarah.greenfield@state.or.us
    - The Five Tribes (individual tribal contacts may be updated as necessary):
      - c/o Gail French Fricano, IEc, Industrial Economics, Incorporated, 2067 Massachusetts Ave., Cambridge, MA 02140, (617) 354-0074, GFricano@indecon.com
      - c/o Courtney Johnson (for Nez Perce Tribe), Crag Law Center, 3141 E. Burnside St., Portland, OR 97214, (503) 525-2728, courtney@crag.org
    - Laura Shira, Yakama Nation Fisheries, Post Office Box 151, Toppenish, WA 98948, (509) 985-3561, shil@yakamafish-nsn.gov.
  - (c) All deliverables must be submitted by the deadlines in the RD Schedule and RDWP, as applicable. Respondent shall submit all deliverables to EPA in electronic form, e.g. email pdfs and/or maintain file transfer protocol (ftp) sites as

requested by EPA. Formatting specifications for sampling and monitoring data and spatial data are addressed in ¶ 5.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 11” by 17”, Respondent shall also provide EPA with paper copies of such exhibits.

## **5.4 Formatting Specifications**

- (a) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable (EDD) format (Attachment 1 of the SOW) or as specified by EPA. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes. All data must be formatted such that they can be easily uploaded to the Portland Harbor Superfund Site database (e.g., Scribe). Reports shall be submitted in a format approved by EPA, such as in pdf format with all metadata inserted, 508 tagging done to the extent practicable, in one file per deliverable (versus many), and include bookmarks to the extent practicable to enhance readability.
- (b) Spatial data, including spatially-referenced data and geospatial data, shall be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum, consistent with the format used for such submissions in the RI/FS for the Portland Harbor Superfund Site or as approved by EPA. If applicable, submissions shall include the collection method(s). Projected coordinates may optionally be included but must be documented (four aspects include projection, zone, datum, and units). Spatial data shall be accompanied by metadata, and such metadata shall be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://www.epa.gov/geospatial/epa-metadata-editor>. Respondent is required to upload data collected to EPA’s Scribe environmental data management tool or other tool as prescribed by EPA.
- (c) Each file must include an attribute name for each Project Area unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.
- (d) Spatial data submitted by Respondent does not, and is not intended to, define the boundaries of the Project Area.

## **5.5 Approval of Deliverables (See Paragraphs 23 and 24 of the Settlement Agreement)**

**5.6 Supporting Deliverables.** Respondent shall submit each of the following supporting deliverables for EPA comment and approval, except as otherwise approved by EPA. Respondent shall develop the deliverables in accordance with all applicable regulations, guidance, and policies (see ¶ 8 (References)). Respondent shall update each of these supporting deliverables as necessary or appropriate during the RD Work, and/or as requested by EPA. Supporting deliverables to each deliverable are specified in the schedule of ¶ 6.2.

- (a) **Health and Safety Plan.** The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by implementing the RD Work. Respondent shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP required by this RD SOW should cover RD activities and should be, as appropriate, updated to cover activities during the RA and updated to cover activities after RA completion. (Updates may be needed for RA activities and after RA completion.) EPA does not approve the HASP but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.
- (b) **Emergency Response Plan.** The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Project Area (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:
  - (1) Name of the person or entity responsible for responding in the event of an emergency incident;
  - (2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;
  - (3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;
  - (4) Notification activities in accordance with ¶ 3.12(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the

Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and

- (5) A description of all necessary actions to ensure compliance with ¶ 3.12a (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the RD Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.
- (c) **Field Sampling Plan.** The Field Sampling Plan (FSP) addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. Respondent shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988). The description of data gaps as required in ¶ 3.2(a)(1) will serve as the basis for the sample collection activities in the FSP. The lateral and vertical extent of contamination exceeding RALs and PTW thresholds will be delineated to the Project Area boundaries (the navigation channel between River Miles 5.1 and 6.5) based on 150-foot core spacing density and will start from the SMAs identified in the evaluation and summary of all existing data set forth in Section 3.2(a)(1). If the contiguous lateral and vertical extent of contamination has not been delineated at the downstream boundary (River Mile 5.1 of the navigation channel), the area of delineation in the navigation channel will be extended to no farther downstream than River Mile 4.8
- (d) **Quality Assurance Project Plan.** The Quality Assurance Project Plan (QAPP) augments the FSP and addresses sample analysis and data handling regarding the RD Work. The QAPP must include a detailed explanation of Respondent's quality assurance, quality control, and chain of custody procedures for all investigations, treatability, design, compliance, and monitoring samples. Respondent shall develop the QAPP in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R- 5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R-02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B- 04/900A through 900C (Mar. 2005). The QAPP also must include procedures:
  - (1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Respondent in implementing the Settlement Agreement (Respondent's Labs);
  - (2) To ensure that Respondent's Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;

**B1 Navigation Channel Project Area Remedial Design  
Statement of Work**

- (3) To ensure that Respondent's Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, ILM05.4 (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, SOM01.2 (amended Apr. 2007); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010) or other methods acceptable to EPA;
  - (4) To ensure that Respondent's Labs participate in an EPA-accepted QA/QC program or other QA/QC program acceptable to EPA;
  - (5) For Respondent to provide EPA with notice at least 28 days prior to any sample collection activity;
  - (6) For Respondent to provide split samples and/or duplicate samples to EPA upon request;
  - (7) For EPA to take any additional samples that it deems necessary;
  - (8) For EPA to provide to Respondent, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling;
  - (9) For Respondent to submit to EPA all sampling and tests results and other data in connection with the implementation of the Settlement Agreement.
- (e) **Institutional Controls Implementation and Assurance Plan.** Institutional controls (ICs) at the Site will be implemented to: (1) protect human health and the environment by limiting exposure to contamination left in place; and (2) protect the long-term integrity of the engineered components of the Selected Remedy. The City of Portland and State of Oregon will develop a site-wide Institutional Control Implementation and Assurance Plan (ICIAP). In coordination with EPA and Respondent for other Project Areas, Respondent will develop a Project Area-specific ICIAP during RD which will, at a minimum, identify the specific and necessary Project Area ICs that will be implemented; plans to implement, maintain, and enforce the ICs; and the parties responsible for implementing and monitoring each IC necessary at the Project Area, consistent with Section 14.2.6. (*Institutional Controls*) of the ROD. Upon approval by EPA, Respondent will provide its Project Area ICIAP to the City and State for incorporation into the site-wide ICIAP. The ICIAP shall be developed in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, and EPA/540/R-09/001 (Dec. 2012) and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated*



*Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012) or as amended or superseded. The ICIAP must include the following additional requirements:

- (1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and
- (2) Legal descriptions and survey maps that are prepared according to current American Land Title Association (ALTA) Survey guidelines and certified by a licensed surveyor.

Among others, three types of ICs have been proposed for the Site that may be used at the Site: (1) Fish Advisories and Educational Outreach; (2) Waterway Use Restrictions or Regulated Navigation Areas (RNAs); and (3) Land Use/Access Restrictions.

- (f) **Waste Designation Memo.** The waste designation memo, if appropriate, will describe the characterization of any RCRA wastes (evaluated as part of the RD) and present the data needs necessary to arrange for the offsite disposal of the wastes at an appropriate facility. Waste designation within the Project Area shall be consistent with Section 3.6.3.1 of Appendix A of the Settlement Agreement.
- (g) **Biological Assessment (BA).** The Respondent shall include a Project Area BA or a supplement to EPA's programmatic Site-wide BA for the preferred alternative as needed to help facilitate National Oceanic and Atmospheric Administration (NOAA) consultation on substantive requirements for the project, as well as a Clean Water Act (CWA) memorandum, to include time for EPA reviews and any necessary revision. The BA shall identify the presence of threatened, endangered, and proposed or candidate species, or their habitat, within the vicinity of the Project Area and shall comply with the substantive requirements of the Endangered Species Act. The BA shall characterize baseline conditions of existing habitat; address potential project impacts that the remedy may have on these species, their habitat, and their food stocks; and describe best management practices and conservation measures designed to avoid or minimize any negative impacts.
- (h) **Clean Water Act Analysis.** Respondent shall submit a memorandum that provides sufficient information to demonstrate compliance of the proposed RA at the Project Area with the substantive requirements of Section 404(b)(1) and other applicable sections of the CWA. The memorandum shall supplement the information gathered from the Feasibility Study regarding, long- and short-term impacts from the RA at the Project Area, minimization of adverse effects, compliance with the ROD, and an analysis of the need for any mitigation.

## **B1 Navigation Channel Project Area Remedial Design Statement of Work**

- (i) **Project Area Monitoring Plan.** The purpose of the Project Area Monitoring Plan (PAMP) is to obtain baseline information regarding the extent of contamination in affected media at the Project Area; to obtain information, through short- and long-term monitoring, about the movement of and changes in contamination throughout the Project Area, before and during implementation of the RA; to obtain information regarding contamination levels to determine whether Performance Standards (PS) are achieved; and to obtain information to determine whether to perform additional actions, including further Project Area monitoring. As appropriate, approved data from Project Area Pre-RD and RD sampling and Site-wide baseline data may be used in the PAMP. The PAMP must include:
- (1) Description of the environmental media to be monitored;
  - (2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;
  - (3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Project Area-related requirements;
  - (4) Description of verification sampling procedures;
  - (5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies; and
  - (6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement).
- (j) **Construction Quality Assurance/Quality Control Plan (CQA/QCP).** The purpose of the Construction Quality Assurance/Quality Control Plan (CQA/QCP) is to describe planned and systemic activities that provide confidence and that verify that the RA construction will and do satisfy all plans, specifications, and related requirements, including quality objectives. The CQA/QCP must:
- (1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/QCP;
  - (2) Describe the PS required to be met to achieve Completion of the RA;

- (3) Describe the activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
  - (4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/QCP;
  - (5) Describe industry standards and technical specifications used in implementing the CQA/QCP;
  - (6) Describe procedures for tracking construction deficiencies from identification through corrective action;
  - (7) Describe procedures for documenting all CQA/QCP activities; and
  - (8) Describe procedures for retention of documents and for final storage of documents.
- (k) **Transportation and Off-Site Disposal Plan.** The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with ¶ 3.13 (Off-Site Shipments). The TODP must include:
- (1) Proposed routes for off-site shipment of Waste Material;
  - (2) Identification of communities affected by shipment of Waste Material; and
  - (3) Description of plans to minimize impacts on affected communities.
- (l) **O&M Plan.** The O&M Plan describes the requirements for inspecting, operating, and maintaining the RA. Respondent shall develop the O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:
- (1) Description of PS required to be met to implement the ROD;
  - (2) Description of activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
  - (3) **O&M Reporting.** Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;
  - (4) Description of corrective action in case of systems failure, including:
    - (i) alternative procedures to prevent the release or threatened release of

Waste Material which may endanger public health and the environment or may cause a failure to achieve PS; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and

- (5) Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.
- (m) **O&M Manual.** The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Respondent shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).

## 6. SCHEDULES

**6.1 Applicability and Revisions.** The following schedule provides an RD timeline under which all deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the schedule set forth below. The schedule identifies deliverables that can be developed concurrently for efficiency. EPA's expectations are an optimized RD timeline as presented in **Figure 1**. Respondent may submit proposed revised schedules for EPA approval. Upon EPA's approval, the revised schedules supersede the schedule set forth below, and any previously-approved schedule.

### 6.2 Schedule

	Description of Deliverable	Included Supporting Deliverable	¶ Ref.	Deadline
	Notification of Respondent's CI Coordinator		2.1(d)	30 days after Effective Date of the Settlement Agreement
1a	Draft Sufficiency Assessment Report		3.1	90 days after Effective Date of the Settlement Agreement <sup>1</sup>
1b	Final Sufficiency Assessment Report		3.1	45 days after EPA's comments on the Draft Sufficiency Assessment Report <sup>1</sup>
2a	Draft PDI Work Plan	FSP, QAPP, HASP, ERP	3.2(a)	90 days after Effective Date of the Settlement Agreement. <sup>1</sup>
2b	Final PDI Work Plan	Same as above	3.2(a)	45 days after EPA's comments on the Draft PDI Work Plan <sup>1</sup>

	<b>Description of Deliverable</b>	<b>Included Supporting Deliverable</b>	<b>¶ Ref.</b>	<b>Deadline</b>
3a	Draft PDI Evaluation Report		3.2(b)	As set forth in the approved PDI Work Plan <sup>1</sup>
3b	Final PDI Evaluation Report		3.2(b)	As set forth in the approved PDI Work Plan <sup>1</sup>
4a	Draft BODR		3.3	90 days after EPA approval of the Final PDI Evaluation Report <sup>1</sup>
4b	Final BODR	Same as above	3.3	45 days after EPA's comments on the Draft BODR <sup>1</sup>
5a	Draft RDWP	Updates to FSP, QAPP, HASP, ERP	3.4	90 days after EPA's approval on the Final BODR <sup>1</sup>
5b	Final RDWP	Same as above	3.4	45 days after EPA's comments on the Draft RDWP <sup>1</sup>
6a	Draft Supplemental PDI Work Plan (if needed)	FSP, QAPP, HASP, ERP	3.6(a)	As set forth in the draft RDWP <sup>1</sup>
6b	Final Supplemental PDI Work Plan (if needed)	Same as above	3.6(a)	As set forth in the draft RDWP <sup>1</sup>
7a	Draft Supplemental PDI Evaluation Report (if needed)		3.6(b)	As set forth in the approved Final RDWP <sup>1</sup>
7b	Final Supplemental PDI Evaluation Report (if needed)		3.6(b)	As set forth in the approved Final RDWP <sup>1</sup>
8a	Draft Treatability Study Work Plan (if required)		3.7(a)	As set forth in the draft RDWP <sup>1</sup>
8b	Final Treatability Study Work Plan (if required)		3.7(a)	As set forth in the draft RDWP RDWP <sup>1</sup>
9a	Draft Treatability Study Evaluation Report (if required)		3.7(b)	As set forth in the approved Final RDWP <sup>1</sup>
9b	Final Treatability Study Evaluation Report (if required)		3.7(b)	As set forth in the approved Final RDWP <sup>1</sup>
10	Preliminary (30%) RD	All supporting deliverables described in ¶ 5.6	3.8	As set forth in the approved Final RDWP <sup>1</sup> Work on the 30% design will begin prior to

**B1 Navigation Channel Project Area Remedial Design  
Statement of Work**

	<b>Description of Deliverable</b>	<b>Included Supporting Deliverable</b>	<b>¶ Ref.</b>	<b>Deadline</b>
				completion of the PDI Reports but will not be completed until after the PDI Reports are completed.
11	Intermediate (60%) RD	Same as above	3.9	As set forth in the approved Final RDWP
12	Pre-final (95%) RD	Same as above and updated sufficiency assessment summary table	3.10	As set forth in the approved Final RDWP
13	Final (100%) RD	Same as above	3.11	As set forth in the approved Final RDWP
14	Progress Reports		4.1	Quarterly <sup>1</sup>

Notes:

<sup>1</sup> Preparation of these deliverables can occur concurrently for an efficient RD schedule. An example showing EPA's expectations for an optimized RD timeline is shown in **Figure 1**.

## **7. STATE AND TRIBAL PARTICIPATION**

**7.1 Copies.** Respondent shall, at any time it sends a deliverable to EPA, send a copy of such deliverable to DEQ and Tribal Governments identified in the Settlement Agreement. EPA shall be responsible for coordinating comments with the State and Tribes to meet the review schedule. Written comments on the deliverables provided to EPA from the State or Tribes shall be provided to the Respondent when EPA provides comments to Respondent. Respondent shall copy other agency Memorandum of Understanding partners (Oregon Department of Fish and Wildlife, NOAA, and U.S. Department of the Interior). EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Respondent, send a copy of such document to the State and Tribes and the agency partners.

**7.2 Review and Comment.** The State and Tribes will have a reasonable opportunity for review and comment prior to:

- (a) Any EPA approval or disapproval under ¶ 5.5 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval, and
- (b) Any disapproval of, or Notice of Work Completion under Section XXXXII of the Settlement Agreement (Notice of Work Completion).

### **B1 Navigation Channel Project Area Remedial Design Statement of Work**

- (c) Any modifications of this SOW or related deliverables under ¶ 89 and Section XXVII of the Settlement Agreement.

## **8. REFERENCES**

**8.1** The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 8.2:

- (a) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G 89/004 (Oct. 1988).
- (b) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).
- (c) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).
- (d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).
- (e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr. 1990).
- (f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).
- (g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).
- (h) Permits and Permit “Equivalency” Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).
- (i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R 92/071A (Nov. 1992).
- (j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).
- (k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995). Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).
- (l) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

**B1 Navigation Channel Project Area Remedial Design  
Statement of Work**

- (m) Operation and Maintenance in the Superfund Program, OSWER 9200.1-37FS, EPA/540/F-01/004 (May 2001).
- (n) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).
- (o) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).
- (p) Quality Systems for Environmental Data and Technology Programs -- Requirements with Guidance for Use, ANSI/ASQ E4-2004 (2004).
- (q) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
- (r) Superfund Community Involvement Handbook, EPA/540/K-05/003 (Apr. 2005).
- (s) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).
- (t) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).
- (u) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (v) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).
- (w) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).
- (x) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), available at <https://www.epa.gov/geospatial/geospatial-policies-and-standards> and <https://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (y) Principles for Greener Cleanups (Aug. 2009), available at <https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.
- (z) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).
- (aa) Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230), (July 2010), <https://www.epa.gov/cwa-404/section-404b1-guidelines-40-cfr-230>.

**B1 Navigation Channel Project Area Remedial Design  
Statement of Work**



- (bb) Recommended Evaluation of Institutional Controls: Supplement to the “Comprehensive Five-Year Review Guidance,” OSWER 9355.7-18 (Sep. 2011).
- (cc) Construction Specifications Institute's MasterFormat 2016, available from the Construction Specifications Institute,  
<https://www.csiresources.org/practice/standards/masterformat>.
- (dd) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)
- (ee) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).
- (ff) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).
- (gg) EPA’s Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), <http://www.epaossc.org/HealthSafetyManual/manual-index.htm>
- (hh) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
- (ii) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017).
- (jj) USEPA Portland Harbor Superfund Site, Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring (June. 2017).

**8.2** A more complete list may be found on the following EPA Web pages:

Laws, Policy, and Guidance <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>

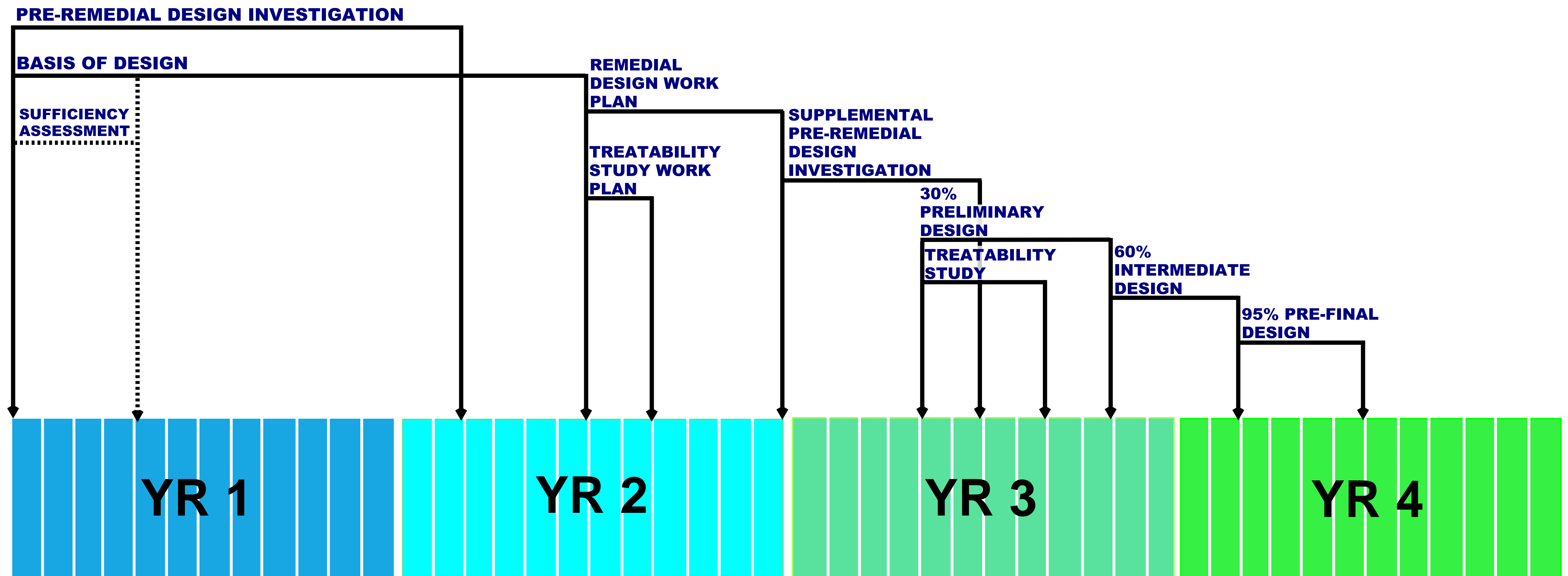
Test Methods Collections <https://www.epa.gov/measurements/collection-methods>

**8.3** For any regulation or guidance referenced in the Settlement or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Respondent receive notification from EPA of the modification, amendment, or replacement.

**B1 Navigation Channel Project Area Remedial Design  
Statement of Work**

## **Figure 1**

### **Optimized Remedial Design Timeline**



\* Current schedule allows 2.5 months for PRPs to create initial draft of RDWP and 30% RD along with 3.5 months for EPA/partner review and comments. The 3.5 months includes a review/comment cycle of the initial draft document by EPA and TCT, development of the draft final document by PRP, and a final review by EPA. This review process will be shortened for the 60% RD and 95% RD as EPA expects the PRPs to have incorporated EPA comments from the 30% RD.

**FIGURE 1. OPTIMIZED REMEDIAL DESIGN TIMELINE**

## **Attachment 1**

### **Program Data Management Plan for Portland Harbor Including Electronic Data Deliverable Format**

# **Program Data Management Plan**

## **Portland Harbor Remedial Design Investigation Portland Harbor Superfund Site**

Prepared by  
***U.S. Environmental Protection Agency Region 10***  
***August 2018***



## TABLE OF CONTENTS

<b>1.0 Introduction .....</b>	<b>2</b>
1.1 Site Background.....	2
1.2 Objective and Scope .....	2
1.2.1 Data Categories .....	3
1.2.2 Major Stakeholder Groups, Performing Parties, and Community Groups.....	3
1.2.3 Major Data Collection Activities.....	4
<b>2.0 Data Management .....</b>	<b>4</b>
2.1 Data Management Platform .....	5
2.2 Roles and Responsibilities .....	5
2.2.1 Performing Parties.....	6
2.2.2 Data Manager .....	6
2.2.3 EPA Remedial Project Managers.....	7
2.2.4 EPA Regional Scribe.NET Data Coordinator.....	7
2.3 Data Elements .....	8
2.3.1 Project Identification Information.....	8
2.3.2 Environmental Monitoring Data .....	8
2.3.3 Locational Data.....	8
2.4 Data Repository .....	9
<b>3.0 Data Verification .....</b>	<b>9</b>
<b>4.0 Data Reporting Procedures .....</b>	<b>9</b>
<b>5.0 Data Access .....</b>	<b>9</b>

## Figures

<b>Figure 1. Data Consolidation and Archiving .....</b>	<b>5</b>
<b>Figure 2. Process Workflow.....</b>	<b>6</b>

## Appendices

<b>Appendix A – Required Data Elements</b>	
<b>Appendix B – Data Element Valid Values</b>	
<b>Appendix C – Data Management Conceptual Model</b>	

## **Definitions and Acronyms**

ASASOC	Administrative Settlement Agreement and Order on Consent
DMP	data management plan
EDD	electronic data deliverables
EPA	U.S. Environmental Protection Agency
ERT	EPA Emergency Response Team located in Edison, NJ
HUC	hydrologic unit code
ID	identification
ODEQ	Oregon Department of Environmental Quality
PHSS	Portland Harbor Superfund Site
RPM	Remedial Project Manager (EPA Region 10)
Scribe	data management application (created for ERT)
Scribe.NET	web-based portal for archiving Scribe project files and data

## **1.0 Introduction**

To ensure that environmental data collected at the Portland Harbor Superfund Site (PHSS) adhere to specific standards and practices, a programmatic level data management plan (DMP) was developed that provides guidance and data requirements for the various parties involved with the pre-design and design related data collection activities. While this DMP is a standalone document, it is to be used in concert with the Administrative Settlement Agreement and Order on Consent (ASAOC) statement of work, Region 10 data management plan, and the respective quality management plans developed for each performing party sampling effort.

### **1.1 Site Background**

The site is located along the lower reach of the Willamette River in Portland, Oregon, and extends from approximately river mile 1.9 to 11.8. While the site is extensively industrialized, it is within a region characterized by commercial, residential, recreational, and agricultural uses. Land use along the lower Willamette River in the site includes marine terminals, manufacturing, other commercial operations, public facilities, parks, and open spaces. The State of Oregon owns certain submerged and submersible lands underlying navigable and tidally influenced waters. The ownership of submerged and submersible lands is complicated and has changed over time.

This lower reach was once a shallow, meandering portion of the Willamette River but has been redirected and channelized via filling and dredging. A federally maintained navigation channel, extending nearly bank-to-bank in some areas, doubles the natural depth of the river and allows transit of large ships into the active harbor. Much of the river bank contains overwater piers and berths, port terminals and slips, and other engineered features. While a series of dams in the upper Willamette River watershed moderate's fluctuations of flow in the lower portions of the river, flooding still occurs approximately every 20 years, with the last occurring in 1996.

Armoring to stabilize banks covers approximately half of the harbor shoreline, which is integral to the operation of activities that characterize Portland Harbor. Riprap is the most common bank-stabilization measure. However, upland bulkheads and rubble piles are also used to stabilize the banks. Seawalls are used to control periodic flooding as most of the original wetlands bordering the Willamette in the Portland Harbor area have been filled. Some river bank areas and adjacent parcels have been abandoned and allowed to revegetate, and beaches have formed along some modified shorelines due to relatively natural processes.

Development of the river has resulted in major modifications to the ecological function of the lower Willamette River. However, several species of invertebrates, fishes, birds, amphibians, and mammals, including some protected by the Endangered Species Act, use habitats that occur within and along the river. The river is also an important rearing site and pathway for migration of anadromous fishes, such as salmon and lamprey. Various recreational fisheries, including salmon, bass, sturgeon, crayfish, and others, are active within the lower Willamette River.

### **1.2 Objective and Scope**

The objective of this DMP is to ensure that environmental data and supporting information are collected and managed in a manner that preserves, protects, and makes the information available to all stakeholders, performing parties, and other affected groups. This DMP applies to data and



information collected in support of the PHSS by the performing party's activities as related to the remedial design effort and per the individual ASAOC. While it does not cover all information (e.g., photos, field logs) that is managed for specific projects, it is intended to address those types of data deemed critical to decision making for the site. Appendix C provides a conceptual model depicting the comprehensive approach to the management of data derived from previous and future studies at the PHSS. The subsections below identify the general data categories, performing parties collecting environmental data, and major sampling activities.

### ***1.2.1 Data Categories***

This plan identifies standard data elements and data management processes for the following data categories:

- Project identification information
- Environmental sampling data
- Locational data

The individual data elements for each of these categories represent the minimal amount of information that is needed for project specific decision making and data sharing among stakeholders and performing parties. These are further identified in the Data Management section.

### ***1.2.2 Major Stakeholder Groups***

The major stakeholder groups have been identified as those groups who are actively involved in site-wide planning and environmental data collection and sharing for this site. The major stakeholders include signatories to the 2001 Memorandum of Understanding, performing parties, and community groups:

- Memorandum of understanding members
  - U.S. Environmental Protection Agency (EPA) Region 10
  - Oregon Department of Environmental Quality
  - Confederated Tribes and Bands of the Yakama Nation
  - Confederated Tribes of the Grand Ronde Community of Oregon
  - Confederated Tribes of Siletz Indians
  - Confederated Tribes of the Umatilla Indian Reservation
  - Confederated Tribes of the Warm Springs Reservation of Oregon
  - Nez Perce Tribe
  - National Oceanic and Atmospheric Administration
  - Oregon Department of Fish and Wildlife
  - U.S. Department of the Interior
- Performing Parties (these are typically potentially responsible parties)
- Primary community groups
  - Community Advisory Group
  - Willamette Riverkeeper
  - Portland Harbor Community Advisory Group

### ***1.2.3 Remedial Design Sampling Activities***

For the remedial design efforts, a performing party would implement an investigation to supplement existing site-wide data to inform and support remedial design.

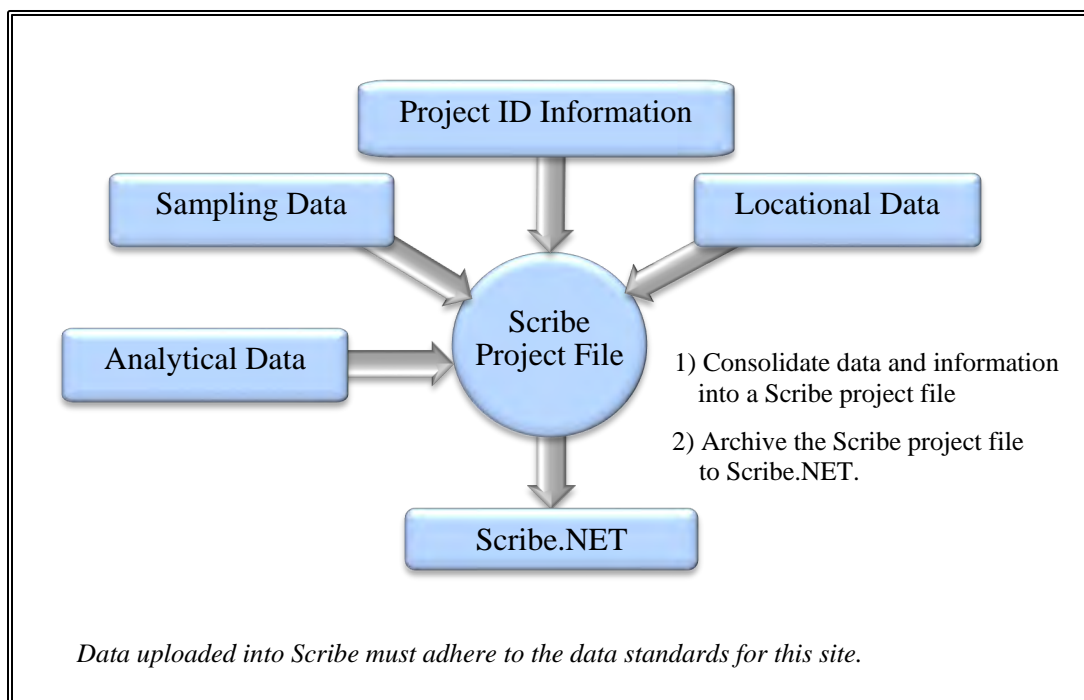
The following types of sample collection activities may be completed as specified in each respective EPA-approved sampling plan submitted by performing parties:

- Surface sediment sampling
- Fish tissue sampling
- Surface water sampling
- Sediment coring
- Soil sampling
- Porewater sampling

## **2.0 Data Management**

Effective data management among the Portland Harbor performing parties relies upon delivery of data to a central repository using a common data management platform. The platform selected for the PHSS is Scribe, and the repository is the Region 10 subscription to Scribe.NET. Although individual performing parties may have diverse data management systems, the Scribe software and Scribe.NET repository is required for consolidation and access to project information, sampling data, and applicable locational data for each sampling activity. For many projects Scribe will already be in use for managing environmental samples. In those cases, the same Scribe project files can be used to document the project information, receive the sampling data, and publish the complete set of information to Scribe.NET. A simplified data flow for the Scribe data management process is illustrated on Figure 1. The Scribe Project ID is required for each data set and is provided by the EPA Scribe.NET Data Coordinator. Sampling Data comprises sample nomenclature identification, temporal data, and details specific to the sampling event. Locational Data comprise the spatial information for each sample.

Independent of the Scribe and Scribe.NET repository, a site-wide repository is being developed by the State of Oregon to capture and provide access to comprehensive Portland Harbor data. Appendix C provides a conceptual model depicting the comprehensive approach to the management of data derived from previous and future studies as a part of the PHSS.

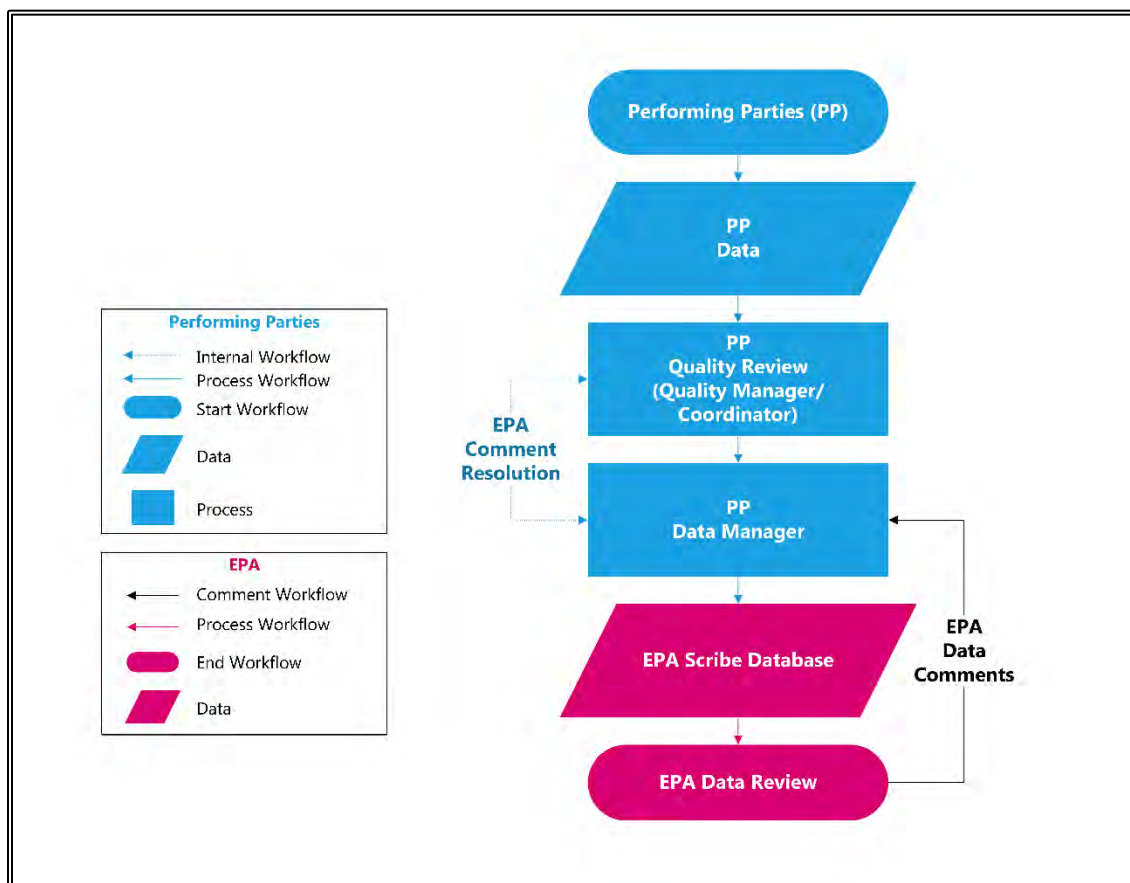
**Figure 1. Data Flow and Archiving for Scribe**

## 2.1 Data Management Platform

The data management platform selected for the PHSS is Scribe. This software is based on a Microsoft database and is available for download ([www.ert.org](http://www.ert.org)). In addition to the Scribe software, an EPA Region 10 template, which contains the required data fields, data lists, and validation criteria, needs to be downloaded and installed. For each project, a Scribe project file is created. Here, the project-specific information is entered, which identifies both the performing party or group conducting the sampling and the type of sampling activity performed.

## 2.2 Roles and Responsibilities

The major roles and responsibilities for data management are identified for the performing parties in addition to the role of the data manager within each organization. The performing parties will be responsible for their own in-house data management but will designate a “data manager” who will fill the role as defined within this DMP. Figure 2 provides an overview of the workflow between EPA Region 10 and the performing parties.

**Figure 2. Process Workflow**

### 2.2.1 Performing Parties

EPA Region 10 has the primary responsibility for oversight of all sampling and monitoring activities. EPA has identified the minimal data elements and data delivery requirements that would allow it to achieve its oversight goals and share data among the other stakeholders, performing parties, and community groups. Each of the performing parties is responsible for collecting the necessary data elements covered under their respective sampling activity as approved by EPA, and providing that information to EPA by submitting electronic data deliverables (EDD's) or entering or uploading the information into a Scribe project file, and publishing (archiving) the complete file to Scribe.NET. Coordination with EPA and the Oregon Department of Environmental Quality (ODEQ) is required to ensure data requirements for a sampling event are met. To accomplish this task on a project-specific basis, the performing party will need:

- DMPs to cover their respective sampling activities
- A data manager designated to complete the Scribe project file or EDD's

Details regarding the roles and responsibilities of the data manager are provided in the following section.

### 2.2.2 Data Manager

Each of the performing parties will need to designate a data manager to create the EDD submittals or create and manage the Scribe project file and upload the file to Scribe.NET. Regardless of the

data management system each performing party utilizes, a Scribe EDD or Scribe project file is required for consolidation and archiving of the project data to a designated national server. The major responsibilities of the data manager are:

- Creation of EDD submittals or the Creation of the Scribe project file
- Coordination with EPA and/or ODEQ regarding all data matters.
- Participation in the Portland Harbor data management coordination calls for ongoing discussion and updates or suggested revisions to this DMP

Designation and training for the data manager can be coordinated with the EPA's Regional Scribe.NET Data Coordinator if direct use of Scribe project files is planned. Web training sessions are also available from the EPA Emergency Response Team (ERT) on a regular basis. To begin, the data manager will need to go to the ERT website ([www.ert.org](http://www.ert.org)) and download on to their computer:

- Scribe (Version 3.9.4 or current)
- EPA Region 10 Scribe template

Once these have been installed, the EPA Region 10 template will need to be selected during the startup of Scribe after which it will become the default template for future projects. As a security measure, once a Scribe project file has been started, it stays locked to the originating computer until it has been relinquished by the data manager. Data and information can be uploaded into Scribe via an import wizard or hand entered through the user interface. During use, it is a recommended practice to regularly back up the Scribe project file to Scribe.NET to preserve the information in the event the originating computer is lost, stolen, or experiences a system failure.

It is anticipated that there will be no coordination with respect to the EPA regional laboratory program for any of the sampling events conducted by any performing party. Section 2.2.4 describes how contact may be made to discuss specific requirements regarding Scribe EDD submittals and/or Region 10 Scribe template.

### ***2.2.3 EPA Remedial Project Managers***

EPA's oversight of the performing parties at the Portland Harbor site resides with EPA's Superfund Remedial Project Managers (RPM). The RPM will work directly with the performing parties on the direction and type of environmental sampling activities conducted. This includes data quality objective development; approval of sampling plans; and acceptance of sampling reports, assessments, and data for entry into the agency's administrative record. Central to this role is the identification of critical data needs on each approved sampling activity at each sediment management area. In addition, the RPM will participate in the Portland Harbor data management calls and coordinate with the performing party's data manager for refinements to the DMP if needed.

### ***2.2.4 EPA Regional Scribe.NET Data Coordinator***

The EPA Scribe.NET Data Coordinator (to be determined) is the project's EPA Scribe data management point of contact and reviews all EPA Region 10 Scribe deliverables for adherence to the EPA Region 10 DMP.

As part of the Portland Harbor data management coordination calls, the EPA Scribe.NET Data Coordinator will communicate with all performing parties regarding all data issues related to the management of data, Scribe EDD submittals and/or Scribe templates. The coordinator will also be the central point of contact for all technical information and database requirements related to the publishing of data to Scribe.NET.

## **2.3 Data Elements**

As stated in Section 1.2.1, the plan identifies standard data elements for project identification information, environmental sampling data, and locational data. A complete list of data elements is provided in Appendix A and the valid values in Appendix B. Valid values are also provided as drop-down entry items in the Region 10 Scribe template/Portland Harbor template (when available). The following sections summarize the information in these appendices as they relate to the major data categories.

### ***2.3.1 Project Identification Information***

Project identifiers provide the necessary descriptive information (metadata) about the project. This allows data users an efficient way of categorizing and searching archived Scribe project files. A complete list of these data elements is found in Appendix A under the Site and Event Categories. Critical among these is identification of the project, monitoring organization, and type of monitoring activity (see Appendix A; Events – Activity data element). The Activity data type is a Superfund identifier that distinguishes environmental data by its intended programmatic use (i.e., Performance Evaluation, Remedial Action). The EPA Region 10 template contains a list of valid values for the Activity data element. It is important for the data manager to verify with the EPA RPM on the agreed upon Activity type during the project planning.

### ***2.3.2 Environmental Sampling Data***

The data elements for environmental sampling data allow for a complete identification of the analytical results such that the data may be subject to interpretation. This includes the identification of the sample matrix, sample collection time, measurement parameter, units of measurement, limits of detection, dates of analysis, analytical method, and so on. A complete list of these data elements and their descriptors are in Appendix A under the Samples and Lab Results categories. For data being uploaded into the Lab Results table of Scribe, the sample numbers must match up against the sample numbers that are already loaded into the Samples table.

### ***2.3.3 Locational Data***

The locational data establish the spatial representativeness of the environmental sample and are critical for data analysis. These include latitude, longitude, datum, elevation, and geomethod for sample collection points. Additional spatial identifiers for water monitoring (e.g., hydrologic unit codes [HUCs]) have been added for this site as these were identified as required geospatial identifiers by EPA. Valid values for the HUCs have been incorporated into the Region 10 template. A complete list of the locational data elements is in Appendix A under the Location and Samples categories.

## **2.4 Data Repository**

The repository for archiving and retrieving Scribe project files is Scribe.NET. This repository resides within a national server maintained by ERT and is accessed directly from Scribe. For each project file, a unique ID is assigned at the time the file is first published to Scribe.NET. Access to the archived Scribe project file can be granted to other stakeholders, performing parties, and groups upon submitting a request to ERT; however, the repository files can only be updated from the computer that originated the file (unless the Scribe project file is relinquished by the originator in Scribe). Independent of the Scribe.NET repository, a site-wide repository being developed by the State of Oregon, will capture and provide access to comprehensive Portland Harbor site data.

## **3.0 Data Verification**

If the Scribe project is initiated by a performing party for Portland Harbor, Scribe is configured to undergo a self-inspection of information as part of the data generation or file upload process. The Region 10 template contains auditor rules for verification of Scribe project files as they are uploaded to Scribe.NET. Close observance of these rules is the responsibility of the data manager.

## **4.0 Data Reporting Procedures**

Final project information, sampling, and locational data are delivered to EPA in the form of an EDD or Scribe project file that has been fully populated and published to Scribe.NET. Upon completion of Scribe project file and upload to Scribe.NET, the performing party data manager notifies the EPA RPM and the EPA Scribe.NET Data Coordinator and provides the Scribe project ID number (assigned at the time of publishing to Scribe.NET) associated with the project for identification and access by EPA Region 10. The concept for integrating the analytical and locational data of Scribe.NET with the comprehensive data management repository is provided in Appendix C.

## **5.0 Data Access**

Major stakeholder groups have been identified as those groups who are actively involved in site-wide planning and environmental data collection and sharing for the PHSS. The major stakeholders include signatories to the 2001 Memorandum of Understanding, performing parties, and community groups. These stakeholders are provided access to the Portland Harbor subscription of Scribe.NET. Data access is performed through Scribe. For all the Portland Harbor Scribe project files, each stakeholder, performing party, or primary community groups has data access rights and can download the Scribe project file from Scribe. Only the originating performing party data manager can update files that have been published to Scribe.NET. Appendix C provides a conceptual model depicting the comprehensive approach to the site-wide management and sharing of data derived from previous and future studies at the PHSS.

## **6.0 References**

U.S. EPA. *Memorandum: Superfund Site Data Definitions and Recommended Practices*.  
29 Nov. 2017.



## **Appendix A – Required Data Elements**

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
CASE_NUMBER	C	Unique ID that identifies groups of sample batches under a specific project. Required for the Contract Lab Program. Valid values are determined by the CLP Contract.	Possible values are determined by the CLP Contract.	Text	5	Scribe / Lab	COC.CaseNumber	N	In Scribe this is found in the "COC.CaseNumber" and "Site.CaseNumber" fields. In the xml file it is the Site.CaseNumber element. There's no place for this in the Scribe LabResults Table.
SAMPLE_DELIVERY_GROUP	C	A set of samples scheduled under a Case Number (max = 20). Required for the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text	30	Lab	LabResults.Lab_Batch_No	Y	Generated by the Lab.
SAMPLE_ID	C	EPA Sample Number. Required if data are reported by the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text	25	Lab	SamplesTags.CLP_Samp_No LabResults.CLP_Samp_No	Y	Originates in Scribe from the "SamplesTags.CLP_Sample_No" field and is also uploaded into the "LabResults.Sample_CLP_No" field. Generated by Lab in EDD.
CAS_NUMBER	R	Chemical Abstracts Service (CAS) Registry Number for the chemical compound or element reported.	Possible values are determined by the CAS Registry.	Text	50	Lab	LabResults.Cas_No	Y	Generated by the Lab.
ANALYTE	R	Name of the chemical compound or element that was measured.	Name comprised of any combination of alpha-numeric values which may also contain hyphens and commas.	Text	60	Lab	LabResults.Analyte	Y	Generated by the Lab.
FINAL_RESULT	R	The final validated result of the chemical compound or element that was measured.	Numeric value which may be integer or decimal.	Text	8	Lab / Data Reviewer	LabResults.Result	Y	Generated by the Lab & verified by Data Reviewer. May be edited in EDM whereas the "Lab_Result" field below cannot be edited during data validation. The Final_Result field is mandatory for MEL and other (sub-contracted, government, etc.) labs.
RESULT_UNITS	R	The units of measurement for the "Final Result" and "Lab Result".	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab	LabResults.Result_Units	Y	Generated by the Lab.
FINAL_VALIDATION_QUALIFIER	R	National Functional Guidelines Data Validation or MEL Data Qualifiers. These should be identified in the QAPP.	Possible values assigned by the National Functional Guidelines or QAPP.	Text	10	EDM / Data Reviewer	LabResults.Result_Qualifier	Y	Generated by the EDM or Data Reviewer.
DATA_VAL_LABEL	R	EPA Data Validation Label Code from the “Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use”. Identifies the rigor of the data validation or review.	Possible values assigned by the guidance document.	Text	250	EDM / Data Reviewer	LabResults.QA_Comment	Y	Generated by the EDM or Data Reviewer. The Scribe LabResults Table will utilize the QA Comment field in order to accommodate this critical data element.
SAMPLE_ADJUSTED_CRQL	R	The Contract Required Quantitation Limit (CRQL) or lab's Reporting Limit that has been adjusted for sample weight, sample volume, dilution, percent solids, etc.	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.Quantitation_Limit	Y	Generated by the Lab.
SAMPLE_ADJUSTED_MDL	R	The Method Detection Limit (MDL) that has been adjusted for sample weight, sample volume, dilution, percent solids, etc.	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.MDL	Y	Generated by the Lab.
LAB_RESULT	C	The pre-validated analytical result as reported by the testing lab (CLP only).	Numeric value which may be integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The "Final_Result" data element which passes validation/lab verification will be uploaded into the Scribe lab results table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
LAB_QUALIFIERS	C	Lab Applied Data Qualifier(s). Qualifer codes which describe certain aspects of data utility or quality (e.g., non-detect, estimated value, etc.).	Possible value defined by either the CLP Statement of Work or the lab.	Text	10	Lab	LabResults.Lab_Result_Qualifier	Y	Generated by the Lab.
METHOD_CRQL	R	Un-adjusted CRQL or Reporting Limit	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.Reporting_Limit	Y	Generated by the Lab.
NONMOISTURE_SAMPLE_ADJUSTED_CRQL	NA	Contract Required Quantitation Limit (CRQL) or Reporting Limit that is adjusted for sample weight, volume, dilution, <b>BUT NOT</b> percent solids. Created by the data review program used to validate CLP data.	Numeric value which may be integer or decimal.	Text	8	EDM		N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CRQL_UNITS	R	Sample Adjusted Contract Required Quantitation Limit (CRQL) or Reporting Limit Units of Measurement.	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab	LabResults.Quantitation_Limit_Units LabResults.Reporting_Limit_Units	Y	Generated by the Lab. The Quantitation and Reporting Limit data elements as we're applying them use the same units of measurement so this data element needs to be uploaded into two different fields.
INSTRUMENT_MDL	O	Instrument Detection Limit (MDL) that is not adjusted for sample mass/volume or percent moisture (solids).	Numeric value which may be integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. R10 Does not use this field.
NONMOISTURE_SAMPLE_ADJUSTED_MDL	NA	Method Detection Limit (MDL) that is adjusted for sample weight, volume, dilution, <b>BUT NOT</b> percent solids. Created by the data review program used to validate CLP data.	Numeric value which may be integer or decimal.	Text	8	EDM		N	There's no data field for this in the Scribe LabResults Table. R10 Does not use this field.
MDL_UNITS	R	MDL Measurement Units	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab	LabResults.MDL_Units	Y	Generated by the Lab.
PERCENT_SOLIDS	R	The Percent Solids for soils and sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Text	8	Lab	LabResults.Percent_Solids	Y	Generated by the Lab.
PERCENT_MOISTURE	R	The Percent Moisture content for soils or sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Text	8	Lab	LabResults.Percent_Moisture	Y	Generated by the Lab.
DILUTION_FACTOR	R	Dilution Factor applied to the digest or extract. The dilution factor is only applied when the laboratory has diluted the extract or digest due to a high concentration of analyte(s).	Integer values e.g., 1, 2, 3, etc.	Text	8	Lab	LabResults.Dilution_Factor	Y	Generated by the Lab.
ANALYSIS_FRACTION	R	Identifies the type of analysis fraction or method category of the analysis.	Possible values determined by the CLP Contract or reporting Lab.	Text	100	Lab	LabResults.Analysis	Y	Generated by the Lab.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
ANALYSIS_LEVEL	C	The concentration range or level performed by the lab for the analytical methods.	Possible values are determined by the CLP Contract. Examples: trace, low, med	Text	15	Lab		N	There's no data field for this in the Scribe LabResults Table.
REPORTING_BASIS	R	Indicates whether the results were adjusted due to the moisture content of the sample.	Sediment samples = DRY or WET depending upon whether moisture correction was applied.	Text	10	Lab	LabResults.Basis	Y	Generated by the Lab.
SAMPLE_DATE_TIME	R	The Date & Time of Sample Collection	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY HH:MM:SS	Date/Time	20	Scribe	Samples.Sampleddate LabResults.Date_Collected	Y	Originates in Scribe but is not overwritten in COC XML resubmittals. This is due to the ability to edit this information in EDM during data validation. To allow overwrite via COC XML resubmittal would violate a business rule against duel overwrite input pathways and introduce an vulnerability to the system. Sample Date & Time are concatenated from two Scribe COC XML fields.
DATE_SHIPPED	R	Date of Sample Shipment.	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY. For Matrix Spike, Post-Digestion Spike, Duplicates, Matrix Spike Duplicate = Ship Date of associated Parent Sample	Date	20	Scribe	COC.DateShipped	N	There's no data field for this in the Scribe LabResults Table and it already appears in the COC Table.
DATE_TIME_RECEIVED	R	Date & Time of Sample Receipt at Lab.	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY HH:MM:SS  For Matrix Spike, Post-Digestion Spike, Duplicate, Matrix Spike Duplicate = Sample Receipt Date and Time of associated Parent Sample	Date/Time	20	Lab	LabResults.Date_Received	Y	Generated by the Lab. Need to double check the date/time fields in the LabResults Table. The Scribe Table Defn. file shows the length of these fields to be "8" but we need them to be "20".
PREP_DATE_TIME	R	Date & Time of Sample Digestion/Extraction.	For all laboratory samples = MM/DD/YYYY HH:MM:SS  For Matrix Spike, Post-Digestion Spike, Duplicate, Matrix Spike Duplicate = Sample Receipt Date and Time of associated Parent Sample	Date/Time	20	Lab	LabResults.Date_Extracted	Y	Generated by the Lab.
ANALYSIS_DATE_TIME	R	The Date & Time of Analysis of the sample digest or extract.	For all laboratory samples = MM/DD/YYYY HH:MM:SS	Date/Time	20	Lab	LabResults.Date_Analyzed	Y	Generated by the Lab.
LAB_SAMPLE_TYPE	R	Identifies types of samples as either "field" or specific lab QCbut does not identify field QC types. Required by the Contract Lab Program.	Possible values are determined by the CLP Contract or Reporting Lab. Examples: Field_Sample, Method_Blank, Matrix_Spike, Serial_Dilution, etc.	Text	40	Lab	LabResults.QC_Type	Y	Generated by the Lab. This data type uses Lab QC long names (e.g., "Laboratory_Control_Sample) and perfectly matches the data definition of the QC_Type data field. The previously identified Sample_Type_Code was only 10 characters long.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SAMPLE_MATRIX	R	Identifies the matrix type of soil, water, etc. as reported by the lab. Required by the Contract Lab Program.	Possible values are determined by the CLP Contract or reporting Lab. Examples: Water, Soil, Sediment, Wipe, Filter	Text	20	Lab	LabResults.Matrix_ID	Y	Generated by the Lab. CLP has it's definitions but does it also need to match up with the Samples.Matrix Scribe data field? I thought these were populated separately.
RESULT_COMMENT	C	Concatenated result information (can be from FORM I Comment Field)	Comments are recorded in the Lab and reported.	Text	250	Lab	LabResults.Comments	Y	Generated by the Lab. For the CLP this was concatenated from the Form I comment field to provide information such as size fraction.
LAB_NAME	R	Laboratory Name (long name)	Possible values are determined by the CLP Contract or reporting Lab.	Text	50	Lab	LabResults.Lab_Name	Y	Generated by the Lab.
LAB_CODE	C	An abbreviated form of the Lab Name.	Possible values are determined by the CLP Contract. The abbreviated lab name is a code used for reporting.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
CONTRACT_NUMBER	C	Laboratory Contract Number assigned under the CLP.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
METHOD_NUMBER_OR_CLP_SOW	R	CLP SOW Value or "Method Source:Method Number", e.g., SW:9060A	Valid EPA or other reference methods or CLP SOW editions. Examples: ISM01.3, 6010, 8270, etc.	Text	100	Lab	LabResults.Analytical_Method	Y	Generated by the Lab.
MA_NUMBER	C	The Modified Analysis (MA) Number is a tracking number used by the CLP for non-standard or altered methods.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
TR_COC_NUMBER	R	The Traffic Report (TR) /Chain of Custody Form Number is a unique tracking number assigned to the COC.	Long segmented number separated by hyphens.	Text	30	Scribe	SamplesTags.COC LabResults.Lab_Coc_No	Y	Generated by the Lab.
LAB_SAMPLE_ID	C	Laboratory Sample ID (internal ID#). Labs issue their own sample IDs for internal sample tracking and reporting purposes.	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab	LabResults.Lab_Samp_No	N	Generated by the Lab.
LAB_FILE_ID	C	Laboratory File ID (Internal to the lab only)	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab		N	There's no data field for this in the Scribe LabResults Table.
INSTRUMENT_ID	C	Unique Instrument Identification Number	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab		N	There's no data field for this in the Scribe LabResults Table.
SAMPLE_ALIQUOT	R	The mass or volume of sample that removed for extraction or digestion.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.SubSample_Amount	Y	Generated by the Lab.
SAMPLE_ALIQUOT_UNITS	R	The units of measurement for the mass or volume of sample that removed for extraction or digestion.	Examples: "g" for grams, "mL" for milliliters.	Text	20	Lab	LabResults.SubSample_Amount_Unit	Y	Generated by the Lab.
FINAL_VOLUME	R	The final volume of the sample Digest or Extract.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.Final_Volume	Y	Generated by the Lab.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
FINAL_VOLUME_UNITS	R	Volume of Sample Digest /Extract Units	For Organic: uL For Inorganic: mL	Text	20	Lab	LabResults.Final_Volume_Unit	Y	Generated by the Lab.
SOIL_EXTRACT_VOLUME	C	The volume of extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_EXTRACT_VOLUME_UNITS	C	Soil Extract Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_ALIQUOT_VOLUME	C	The volume of aliquot removed from the extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_ALIQUOT_VOLUME_UNITS	C	Soil Aliquot Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
PURGE_VOLUME	C	For analysis of Volatile Organic Compounds, the volume of an aqueous sample that is used to "purge" the VOCs.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.Final_Volume	Y	Generated by the Lab.
PURGE_VOLUME_UNITS	C	Purge Volume Units (VOA)	For Organic (VOA only): mL	Text	20	Lab	LabResults.Final_Volume_Unit	Y	Generated by the Lab.
SPIKE_ADDED	C	Amount Added for Lab Matrix Spike or Spike Duplicate sample or Laboratory Control Sample	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
CONCENTRATED_EXTRACT_VOLUME	C	Concentrated Extract Volume (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
CONCENTRATED_EXTRACT_VOLUME_UNITS	C	Concentrated Extract Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
INJECTION_VOLUME	C	The volume of extrac injected into the instrument. (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
INJECTION_VOLUME_UNITS	C	Injection Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
PREPARATION_METHOD	R	Type of Extraction for Organics or Digestion for Inorganics. "SONC" for sonication etc. (SVOA/PEST/PCB) of Organics and most relevant method digestion numbers for Inorganic.	Possible values are determined by the CLP Contract or reporting Lab. For Organic: Sonication, Soxhlet, Pressurized_Fluid , Liq_Liq, Liq_Membrane For Inorganic: 200.7, 200.8, 3050B, 3015A, 3051A, 7300, 7470A, 7471B, Midi-distillation, Micro-distillation	Text	100	Lab	LabResults.Extraction_Method	Y	Generated by the Lab.



Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
GPC_CLEANUP	C	Cleanup Type (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): Y or N	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
GPC_FACTOR	C	1.0 if no GPC, 2.0 if GPC is performed (SVOA/PEST/PCB)	"1.0 if no GPC, 2.0 if GPC is performed" derived from presence or absence of GPC value in CLEANUP_TYPE field	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
DECANTED	C	Identifies if the Lab decanted the sample in a Yes or No response. (SVOA/PEST/PCB)	Contract or reporting Lab. For Organic (SVOA, Pesticides, PCBs): Decanted or Not_Decanted	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
PH	C	The pH Determination of a soil or water sample. Reported in pH Units (SVOA/PEST/PCB, and Inorganic water samples)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
COLOR_BEFORE	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
COLOR_AFTER	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
CLARITY_BEFORE	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
CLARITY_AFTER	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
TEXTURE	O	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
ARTIFACTS	O	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
COOLER_TEMP	R	Recorded temperature of the sample cooler upon Receipt at the Lab.	Recorded in Degrees Celcius.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
SAMPLE_FRACTION	C	Identifies the representativeness of a water sample due to any pretreatment (e.g., filtration at 0.45 micron).	"D" for dissolved (filtered at 0.45 micron), "F" for other filtered, "T" for total (unfiltered). If "F" is used then the filter size/type should be entered in the Result_Comment field.	Text	1	Scribe	LabResults.Total_Or_Dissolved	Y	Generated by the Lab.
METHOD_SPECIATION	C	Part of a chemical characteristic (Nitrogen "As" ...)	Detemined by the analytical method.	Text	30	Lab		N	Generated by the Lab. There's no data field for this in the Scribe LabResults Table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SAMPLE_SUBMATRIX	R	Scribe Matrix, expanded to include surface water, surface sediment etc. Use a custom list in Scribe	Examples: Air, AirIndoor, Sediment, Sediment Subsurface, Sediment Surface, Soil, Soil Surface, Soil Subsurface, SoilGas, Tissue, Waste, Waste SolidWaste, Waste LiquidWaste, Water, Water SurfaceWater, Water GroundWater, Water Potable, Water SepticEffluent, Water Stormwater	Text	40	Scribe	Samples.Matrix	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_REASON	R	General program or technical reason for the study. Program reasons are specific and tie the data collection to more prescribed data uses.	Examples: Emergency Response, Site Investigation, Preliminary Assessment, Site Assessment, Remedial Investigation, Remedial Action	Text	30	Scribe	Site.Site_Action	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLE_COLLECTION_METHOD	R	Sample Collection Method (i.e., Grab, Composite, Discrete Interval)	Examples: Grab, Composite, Discrete Interval	Text	30	Scribe	Samples.SampleCollection	N	Already in Scribe. No place for it in the Scribe LabResults Table.
EPA_REGION	R	"EPA Region" plus the Regional designation number (EPA Region 10)	Valid Values: "EPA Region" + 1 - 10	Text	15	Scribe	Site.EPARegionNumber	N	Already in Scribe. No place for it in the Scribe LabResults Table.
STATION_LOCATION	R	Station Location Codes	Determined by the project.	Text	50	Scribe	Location.Location	N	Originates in Scribe but is not overwritten in COC XML resubmittals. This is due to the ability to edit this information in EDM during data validation. To allow overwrite via COC XML resubmittal would violate a business rule against duel overwrite input pathways and introduce an vulnerability to the system.
LOCATION_DESCRIPTION	R	Further describes the Station Location.	Determined by the project.	Text	100	Scribe	Location.LocationDescription	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SAMPLE_NUMBER	R	The Scribe / field sample number. This may be Scribe generated or a Regionally assigned number.	Possible value determined by the Scribe Project Manager or the Regional Sample Control Coordinator.	Text	50	Scribe	Samples.Samp_No LabResults.Samp_No	Y	Originates in Scribe in the "Samples.Samp_No" field but is also uploaded into the "LabResults.Sample_CLP_No" field.
LOCATION_ZONE	R	The type of area that is impacted by the sample location.	Examples: Lake, Land, River/Stream, Well	Text	25	Scribe	Location.LocationZone	N	Already in Scribe. No place for it in the Scribe LabResults Table.
LATITUDE	R	The geographic latitude where the sample was collected or field measurement was taken.	12 character decimal degrees. Decimal places should be carried out to a minimum of 6 places in order to ensure minimal accuracy.	Text	12	Scribe	Location.Latitude	N	Already in Scribe. No place for it in the Scribe LabResults Table.
LONGITUDE	R	The geographic longitude where the sample was collected or field measurement was taken.	12 character decimal degrees (preceded by a negative sign "-" for North America). Decimal places should be carried out to a minimum of 6 places in order to ensure minimal accuracy.	Text	12	Scribe	Location.Longitude	N	Already in Scribe. No place for it in the Scribe LabResults Table.
DATUM	R	The horizontal coordinate system reference Datum name.	WGS84	Text	50	Scribe	Location.Datum	N	Already in Scribe. No place for it in the Scribe LabResults Table.



Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
GEOMETHOD	R	The method used to determine latitude and longitude.	GPS, Survey	Text	30	Scribe	Location.GeoMethod	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION	C	The determined elevation of a geographic point where the sample was collected or field measurement was taken. This is required for groundwater monitoring wells and where surface elevation data is needed for a project.	In feet or meters, need to provide for GW Wells that have been surveyed and not just GPS.	Text	8	Scribe	Location.Surf_Elev	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_UNITS	C	The units of measurement for the surface elevation data. This is required when surface elevation measurements are reported.	meters, feet	Text	20	Scribe	Location.Surf_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_METHOD	C	The method used to determine the surface elevation. This is required when surface elevation measurements are reported.	GPS, Survey	Text	30	Scribe	Location.ElevMethod	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_DATUM	C	The vertical control datum for the surface elevation measurement. This is required when surface elevation measurements are reported.	NAVD88	Text	50	Scribe	Location.ElevDatum	N	Already in Scribe. No place for it in the Scribe LabResults Table.
TOP_DEPTH	C	Top depth of Sample Collection (for cores) or depth of sample collection for a monitoring well.	Numeric value may be an integer or decimal.	Text	8	Scribe	Samples.Samp_Depth	N	Already in Scribe. No place for it in the Scribe LabResults Table.
BOTTOM_DEPTH	C	Depth To bottom of sample collection for a core sample.	Numeric value may be an integer or decimal.	Text	8	Scribe	Samples.Samp_Depth_To	N	Already in Scribe. No place for it in the Scribe LabResults Table.
TOP_DEPTH_UNITS	C	Units of Sample Depth	Feet or meters	Text	20	Scribe	Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
BOTTOM_DEPTH_UNITS	C	Units of the Bottom Depth	Feet or meters	Text	20	Scribe	Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLER_NAME	R	Sampler Name	Full name of the sampler.	Text	30	Scribe	Samples.Sampler	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_COMPANY_CONTACT	R		Full name of the sampling contact. Person usually coordinates sample collection on behalf of the sampling company.	Text	50	Scribe	Site.CTRContact	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_COMPANY_NAME	R	Sampling Company Name	Full name of the sampling company.	Text	50	Scribe	Site.Contractor	N	Already in Scribe. No place for it in the Scribe LabResults Table.
PROJECT_NAME	R	Site Name / Project Name	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM	Site.Site_Name	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SITE_PROJECT_CODE	R	Regional Project Code	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM	COC.ProjectCode	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling. Also hand entered onto COC during COC generation and uploaded to lab in COC XML.
SITE_EVENT_ID	R	EventID. Use to group data by sampling/monitoring events (i.e. EOC, Site Assessment) (Primary Key)	A unique ID used by Scribe.	Text	50	Scribe	Site.Control_No	N	Already in Scribe. No place for it in the Scribe LabResults Table.
STATE	R	State where sample collection occurred. This field is populated in CLPSS during ASR entry	2 Character State Abbreviation	Text	20	RSCC/EDM	Stite.Site_State	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.
CITY	R	City where sample collection occurred. This field is populated in CLPSS during ASR entry	Full City Name	Text	60	RSCC/EDM	Site.Area	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.
CERCLIS	R	CERLIS ID	The CERCLIS identification. Used only by the Superfund program.	Text	20	Scribe	Site.CERCLIS	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SITE_NUMBER	R	Scribesite key (Primary Key)	A unique ID used by Scribe.	Text	12	Scribe	Site.Site_No	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_NET_PROJECT_ID	R	ScribeNetID Project ID	A unique ID used by Scribe.	Text	4	Scribe	Site.ScribeNetProjectID	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SAMPLES_ID	NA	Scribe Database AutoGenerated Number	A unique ID used by Scribe.	Text	4	Scribe	Samples.SampleID	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLE_TAG	R	Container ID codes - autogenerated if left blank	A unique ID used by Scribe.	Text	15	Scribe	SamplesTags.Tag	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_COMMENT	C	Comment field from Scribe	Filled in by sampler to denote special sample treatment or conditions. Required if the entry is filled in by Scribe.	Text	255	Scribe	Samples.Remarks	N	Already in Scribe. No place for it in the Scribe LabResults Table.
FIELD_SAMPLE_TYPE	R	Distinguishes field samples from lab QC, field QC and other associated sample types.	Possible values used in the Scribe template. Example: "Field Sample", etc.	Text	30	Scribe	Samples.SampleType	N	Already in Scribe. No place for it in the Scribe LabResults Table.
VERSION_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
DATA_PROVIDER	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARENT_SAMPLE_NAME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARENT_SAMPLE_LOCATION	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LAB_REPLICATE_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_SOURCE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
ORGANIC_YN	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PRESERVATIVE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TEST_BATCH_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PREP_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYSIS_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_ANALYSIS_LOCATION	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COLUMN_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RUN_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYSIS_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYST_NAME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYTE_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
REPORTABLE_RESULT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
DETECT_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TIC_RETENTION_TIME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TIC_RETENTION_TIME_UNITS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
EXPECTED_VALUE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_ORIGINAL_CONC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_MEASURED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_RECOVERY	R	Percent Recovery of lab QC types (matrix spikes, surrogates, etc).	Numbers are represented as "%".	Text	8	Lab	LabResults.Percent_Recovery	Y	Generated by the Lab.
QC_DUP_ORIGINAL_CONC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_ADDED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_MEASURED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
QC_DUP_SPIKE_RECOVERY	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_LCL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_UCL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD_CL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD_STATUS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_RUN	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARAMID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PAR_VAL_UNCERT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RESULT_ERROR_DELTA	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
INTERPRETED_QUALIFIERS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SYS_LOC_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TASK_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COLLECTION_QUARTER	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_CLASS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COMPOSITE_DESC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACH_LOT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACHATE_METHOD	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACHATE_DATE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
LEACHATE_TIME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RESP	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_1	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_2	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_3	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COMMENT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

## **Appendix B – Data Element Valid Values**

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Events	Activity	Remedial Design
Events	Activity	Remedial Design Oversight
Events	QAPP_Approved	Y
Events	QAPP_Approved	N
Events	QAPP_ApprovedBy	US EPA Region 10
Events	QAPP_ApprovedBy	ODEQ
Location	CountryCode	US
Location	CountyCode	051
Location	Datum	NAD83
Location	Datum	UNKWN
Location	Datum	WGS84
Location	ElevDatum	NAVD88
Location	ElevDatum	NGVD29
Location	ElevDatum	OTHER
Location	ElevDatum	UNKWN
Location	ElevMethod	Altimetry
Location	ElevMethod	GPS
Location	ElevMethod	Interpolation
Location	ElevMethod	Other
Location	ElevMethod	Survey
Location	GeoMethod	GPS-Unspecified
Location	GeoMethod	Unknown
Location	GeoMethod	GPS
Location	GeoMethod	Interpolation
Location	GeoMethod	Survey
Location	HorizAccuracyMeasureUnit	Ft
Location	HorizAccuracyMeasureUnit	Meter
Location	HucEightDigitCode	17090012
Location	HucTwelveDigitCode	170900120201
Location	HucTwelveDigitCode	170900120202
Location	HucTwelveDigitCode	170900120301
Location	HucTwelveDigitCode	170900120305
Location	HucTwelveDigitCode	170900120304
Location	HucTwelveDigitCode	170900120302
Location	HucTwelveDigitCode	170900120303
Location	HucTwelveDigitCode	170900120102
Location	HucTwelveDigitCode	170900120104
Location	HucTwelveDigitCode	170900120101
Location	HucTwelveDigitCode	170900120103
Location	<Structuring of location (Site, subsite[by river mile], and SMA) will be determined with the EPA RPM> Developed as a part of the Portland Harbor Scribe Template.	
Location	LocationZone	Borehole
Location	LocationZone	Canal Transport

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Location	LocationZone	Combined Sewer
Location	LocationZone	Estuary
Location	LocationZone	Facility Industrial
Location	LocationZone	Facility Other
Location	LocationZone	Lake
Location	LocationZone	Land
Location	LocationZone	Land Flood Plain
Location	LocationZone	Landfill
Location	LocationZone	Ocean
Location	LocationZone	Other-Ground Water
Location	LocationZone	Other-Seawater
Location	LocationZone	Other-Surface Water
Location	LocationZone	Other-Surface Water
Location	LocationZone	Pond-Stormwater
Location	LocationZone	Reservoir
Location	LocationZone	River/Stream
Location	LocationZone	River/Stream
Location	LocationZone	Seep
Location	LocationZone	Spring
Location	LocationZone	Storm Sewer
Location	LocationZone	Test Pit
Location	LocationZone	Waste Pit
Location	LocationZone	Waste Sewer
Location	LocationZone	Well
Location	LocationZone	Wetland Undifferentiated
Location	State Code	OR
Location	Sub_Basin	Lower Willamette
Samples	Activity	Pre-Design
Samples	Activity	Design
Samples	Matrix	Air
Samples	Matrix	Air Indoor
Samples	Matrix	Asbestos
Samples	Matrix	Biological
Samples	Matrix	Benthic
Samples	Matrix	Drinking Water
Samples	Matrix	Dust
Samples	Matrix	Filtered Water
Samples	Matrix	Ground Water Dissolved
Samples	Matrix	Ground Water Total
Samples	Matrix	Habitat
Samples	Matrix	Lab Sand
Samples	Matrix	Liquid Waste
Samples	Matrix	Porewater Dissolved
Samples	Matrix	Porewater Total
Samples	Matrix	Potable Water
Samples	Matrix	Saline Water Dissolved
Samples	Matrix	Saline Water Total



### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	Matrix	Sand
Samples	Matrix	Sediment
Samples	Matrix	Sediment <2mm
Samples	Matrix	Sediment <63um
Samples	Matrix	Sediment 125-250um
Samples	Matrix	Sediment 63-125um
Samples	Matrix	Sediment 63-250um
Samples	Matrix	Sediment Bulk
Samples	Matrix	Sediment Subsurface
Samples	Matrix	Sediment Surface
Samples	Matrix	Septic Effluent
Samples	Matrix	Soil
Samples	Matrix	Soil Gas
Samples	Matrix	Soil Subsurface
Samples	Matrix	Soil Surface
Samples	Matrix	Solid Waste
Samples	Matrix	Stormwater
Samples	Matrix	Surface Water
Samples	Matrix	Surface Water Dissolved
Samples	Matrix	Surface Water Total
Samples	Matrix	Tissue
Samples	Matrix	Waste
Samples	Matrix	Subsurface Soil/Sediment
Samples	Matrix	Surface Soil/Sediment
Samples	Samp_Depth_Units	Ft
Samples	SampleCollection	Activity Trap
Samples	SampleCollection	A-Frame Net
Samples	SampleCollection	Anchor Box Dredge
Samples	SampleCollection	Artificial Substrate
Samples	SampleCollection	Backpack Electroshock
Samples	SampleCollection	Beach Seine Net
Samples	SampleCollection	Beam Trawl
Samples	SampleCollection	Benthic Corer (Other)
Samples	SampleCollection	Benthic Dredge (Other)
Samples	SampleCollection	Benthic Grab (Other)
Samples	SampleCollection	Birge Closing Net
Samples	SampleCollection	Black Light Trap
Samples	SampleCollection	Block Net
Samples	SampleCollection	Boat-Mounted Electroshock
Samples	SampleCollection	Bod Dredge
Samples	SampleCollection	Bongo Net
Samples	SampleCollection	Boomerang Corer
Samples	SampleCollection	Boomerang Grab
Samples	SampleCollection	Box Corer
Samples	SampleCollection	Box Sampler
Samples	SampleCollection	Brail
Samples	SampleCollection	Bucket

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Burrell Epibenthic Sled
Samples	SampleCollection	Campbell Grab
Samples	SampleCollection	Cast Net
Samples	SampleCollection	Center Bag
Samples	SampleCollection	Chain Dredge
Samples	SampleCollection	Clam-Shell Grab
Samples	SampleCollection	Clarke-Bumpus Net
Samples	SampleCollection	Concussion
Samples	SampleCollection	Creel Survey
Samples	SampleCollection	Danish Seine Net
Samples	SampleCollection	Dart Corer (Gravity)
Samples	SampleCollection	D-Frame Net
Samples	SampleCollection	DH-81
Samples	SampleCollection	DH-95
Samples	SampleCollection	Dietz-Lafond Grab
Samples	SampleCollection	Dip Net
Samples	SampleCollection	Draw Down
Samples	SampleCollection	Drift Gill Net
Samples	SampleCollection	Drilled Sampler
Samples	SampleCollection	Drive Sampler (Generic)
Samples	SampleCollection	Drop Net
Samples	SampleCollection	Ekman Grab
Samples	SampleCollection	Electric Seine
Samples	SampleCollection	Electroshock (Other)
Samples	SampleCollection	Emergence Trap
Samples	SampleCollection	English Umbrella Net
Samples	SampleCollection	Erwin Piston Corer
Samples	SampleCollection	Ewing Gravity Corer
Samples	SampleCollection	Experimental Brail
Samples	SampleCollection	Experimental Gill Net
Samples	SampleCollection	Fish Weir
Samples	SampleCollection	Free Fall Grab
Samples	SampleCollection	Fry Trap
Samples	SampleCollection	Funnel Trap
Samples	SampleCollection	Fyke Net
Samples	SampleCollection	Glass Slide
Samples	SampleCollection	Glass Slide Device
Samples	SampleCollection	Gravity Corer (Generic)
Samples	SampleCollection	Hand Corer
Samples	SampleCollection	Herring Trawl
Samples	SampleCollection	Hess Sampler
Samples	SampleCollection	Hester-Dendy
Samples	SampleCollection	Hook And Line
Samples	SampleCollection	Hydraulic Grab
Samples	SampleCollection	Hydroacoustics
Samples	SampleCollection	Hydroplastic (PVC) Corer
Samples	SampleCollection	Insect Trap

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Isaacs-Kidd Trawl
Samples	SampleCollection	Juday Trap
Samples	SampleCollection	Kemmerer Bottle
Samples	SampleCollection	Kick Net
Samples	SampleCollection	Kullenberg Gravity Corer
Samples	SampleCollection	Larval Light Fish Trap
Samples	SampleCollection	Long Line
Samples	SampleCollection	Marmap Neuston Net
Samples	SampleCollection	Minnow Seine Net
Samples	SampleCollection	Miscellaneous (Other)
Samples	SampleCollection	Mochness Net
Samples	SampleCollection	Modified Surber Sampler
Samples	SampleCollection	MTD Net
Samples	SampleCollection	Nansen Bottle
Samples	SampleCollection	Natural Substrate
Samples	SampleCollection	Net Vertical Tow (Other)
Samples	SampleCollection	Net/Horizontal Tow (Other)
Samples	SampleCollection	Net/Non Tow (Other)
Samples	SampleCollection	Niskin Bottle
Samples	SampleCollection	Norpac Net
Samples	SampleCollection	Orange-Peel Grab
Samples	SampleCollection	Original Surber Sampler
Samples	SampleCollection	Other Toxicant
Samples	SampleCollection	Otter Trawl
Samples	SampleCollection	Pair Trawl
Samples	SampleCollection	Pamatmat Multiple Quartz Corer
Samples	SampleCollection	Peterson Grab
Samples	SampleCollection	Petite Ponar Grab
Samples	SampleCollection	Phleger Corer (Gravity)
Samples	SampleCollection	Pipe Dredge
Samples	SampleCollection	Piston Corer (Generic)
Samples	SampleCollection	Plankton Net
Samples	SampleCollection	Plexiglass Slide Device
Samples	SampleCollection	Plexiglass Trap
Samples	SampleCollection	Plummet Net
Samples	SampleCollection	Polar Orga. Chem. Integrative Sampler
Samples	SampleCollection	Ponar Grab
Samples	SampleCollection	Pound Net
Samples	SampleCollection	Pram Electroshock
Samples	SampleCollection	Probe/Sensor
Samples	SampleCollection	Pull Sled
Samples	SampleCollection	Pump/Air Lift
Samples	SampleCollection	Pump/Bailer
Samples	SampleCollection	Pump/Centrifugal
Samples	SampleCollection	Pump/Jet
Samples	SampleCollection	Pump/Non-Submersible
Samples	SampleCollection	Pump/Peristaltic

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Pump/Piston
Samples	SampleCollection	Pump/Rotary
Samples	SampleCollection	Pump/Submersible
Samples	SampleCollection	Pump/Turbine
Samples	SampleCollection	Purse Seine Net
Samples	SampleCollection	Push Net
Samples	SampleCollection	Push Point Sampler
Samples	SampleCollection	Radiello
Samples	SampleCollection	Rectangular Net
Samples	SampleCollection	Remotely Operated Vehicle
Samples	SampleCollection	Rock Basket
Samples	SampleCollection	Roller Frame Trawl
Samples	SampleCollection	Rotenone
Samples	SampleCollection	Roving Drop Net
Samples	SampleCollection	Scoop Fish Grab
Samples	SampleCollection	Sediment Trap
Samples	SampleCollection	Seine Net
Samples	SampleCollection	Semipermeable Membrane Device
Samples	SampleCollection	Set (Passive) Gill Net
Samples	SampleCollection	Shelby Tube
Samples	SampleCollection	Ship Sea Chest
Samples	SampleCollection	Shipek Grab
Samples	SampleCollection	SHOVEL
Samples	SampleCollection	Shrimp Trawl
Samples	SampleCollection	Simple Conical Net
Samples	SampleCollection	Single-Vessel Operated Tow Net
Samples	SampleCollection	Smith-McIntire Grab
Samples	SampleCollection	Sodium Cyanide
Samples	SampleCollection	Spear/Gun
Samples	SampleCollection	Spear/Hand
Samples	SampleCollection	Spear/Hawaiian Sling
Samples	SampleCollection	Split Spoon
Samples	SampleCollection	Square-Mouth Net
Samples	SampleCollection	Stainless Steel Spoon
Samples	SampleCollection	Stationary Drop Net
Samples	SampleCollection	Still Camera
Samples	SampleCollection	Stop Net
Samples	SampleCollection	Storm Water Sampler
Samples	SampleCollection	Stovepipe Sampler
Samples	SampleCollection	Stream-Side Electroshock
Samples	SampleCollection	Suction Dredge
Samples	SampleCollection	Summa
Samples	SampleCollection	Surber Sampler
Samples	SampleCollection	Syringe
Samples	SampleCollection	Terminal Bag
Samples	SampleCollection	Tile Plate
Samples	SampleCollection	Tow Net

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Towed Dredge
Samples	SampleCollection	Trammel Net
Samples	SampleCollection	Trap Net
Samples	SampleCollection	Trap Substrate (Other)
Samples	SampleCollection	Traveling Screen
Samples	SampleCollection	Trot Line
Samples	SampleCollection	T-Sampler
Samples	SampleCollection	Tucker Net
Samples	SampleCollection	Two-Vessel Operated Tow Net
Samples	SampleCollection	Van Dorn Bottle
Samples	SampleCollection	Van Veen Grab
Samples	SampleCollection	Variable Mesh Gill Net
Samples	SampleCollection	Vibrating Corer
Samples	SampleCollection	Video Camera
Samples	SampleCollection	Vinyl Tube
Samples	SampleCollection	Visual Sighting
Samples	SampleCollection	Water Bottle
Samples	SampleCollection	Water Sampler (Other)
Samples	SampleCollection	WBH-96
Samples	SampleCollection	Whirl-pak bag
Samples	SampleCollection	Wisconsin-Style Net
Samples	SampleCollection	Yankee Trawl
Samples	SampleCollection	Young Grab
Samples	Sampler	<Performing Parties> Will be added as they are defined and organized into groups
Samples	SampleType	Depth Integrated Sample
Samples	SampleType	Field Duplicate
Samples	SampleType	Field Msr/Obs
Samples	SampleType	Field Sample
Samples	SampleType	Incremental Sampling Horiz
Samples	SampleType	Incremental Sampling Vert
Samples	SampleType	QC Blank - Bottle/Preservative
Samples	SampleType	QC Blank - Field
Samples	SampleType	QC Blank - Filter
Samples	SampleType	QC Blank - Rinsate/Equipment
Samples	SampleType	QC Blank - Trip
Samples	SampleType	Sample-Composite Without Parents
LabResults	Analysis	<To be determined from performing party site specific sampling plan>
LabResults	Analyte	1,1-Dichloroethane
LabResults	Analyte	1,1-Dichloroethene
LabResults	Analyte	1,1-Dichloroethylene
LabResults	Analyte	1,1,1-Trichloroethane
LabResults	Analyte	1,1,1,-Trichloroethane
LabResults	Analyte	1,1,2-Trichloroethane
LabResults	Analyte	Trichloroethane
LabResults	Analyte	1,1,2,2-Tetrachloroethane

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Tetrachloroethane
LabResults	Analyte	1,2-Dibromoethane
LabResults	Analyte	Dibromoethane
LabResults	Analyte	1,2-Dichloroethane
LabResults	Analyte	Ethylene dichloride
LabResults	Analyte	1,2-Dichloropropane
LabResults	Analyte	Propylene dichloride
LabResults	Analyte	1,2,3-Trichloropropane
LabResults	Analyte	1,2,3,4,7,8-HxCDF
LabResults	Analyte	1,2,3,7,8-PeCDD
LabResults	Analyte	1,2,4-Trichlorobenzene
LabResults	Analyte	1,2-Dichlorobenzene
LabResults	Analyte	1,3-Dichlorobenzene
LabResults	Analyte	1,4-Dichlorobenzene
LabResults	Analyte	2-Butanone
LabResults	Analyte	Methyl Ethyl Ketone
LabResults	Analyte	2-Hexanone
LabResults	Analyte	2-Chloroethylvinyl Ether
LabResults	Analyte	2,4,5-TP (Silvex)
LabResults	Analyte	2,2'-oxybis(1- Chloropropane)
LabResults	Analyte	2,3,4,6-Tetrachlorophenol
LabResults	Analyte	2,3,4,7,8-PeCDF
LabResults	Analyte	2,3,7,8-TCDF
LabResults	Analyte	2,3,7,8-TCDD-Dioxin
LabResults	Analyte	2,3,7,8-TCDD
LabResults	Analyte	2,4,5-Trichlorophenol
LabResults	Analyte	2,4,6-Trichlorophenol
LabResults	Analyte	2,4-Dichlorophenol
LabResults	Analyte	2,4-D
LabResults	Analyte	2,4-Dimethylphenol
LabResults	Analyte	Dinitrophenol
LabResults	Analyte	2,4-Dinitrophenol
LabResults	Analyte	2,4-Dinitrotoluene
LabResults	Analyte	2,6-Dinitrotoluene
LabResults	Analyte	2-Chloronaphthalene
LabResults	Analyte	2-Chlorophenol
LabResults	Analyte	2-Methylnaphthalene
LabResults	Analyte	o-Cresol
LabResults	Analyte	2-Methylphenol
LabResults	Analyte	2-Nitroaniline
LabResults	Analyte	2-Nitrophenol
LabResults	Analyte	3,3'-Dichlorobenzidine
LabResults	Analyte	3,3'- Dichlorobenzidine
LabResults	Analyte	3-Nitroaniline
LabResults	Analyte	Methyl isobutyl ketone
LabResults	Analyte	4-Methyl-2-Pentanone
LabResults	Analyte	4-Bromophenyl- phenylether

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	4-Bromophenyl phenyl ether
LabResults	Analyte	3-Methyl-4-chlorophenol
LabResults	Analyte	4-Chloro-3-methylphenol
LabResults	Analyte	4-Chloro-3- methylphenol
LabResults	Analyte	4-Chloroaniline
LabResults	Analyte	4-Chlorophenyl phenyl ether
LabResults	Analyte	4-Chlorophenyl- phenyl ether
LabResults	Analyte	4-Methylphenol
LabResults	Analyte	p-Cresol
LabResults	Analyte	4-Nitroaniline
LabResults	Analyte	4-Nitrophenol
LabResults	Analyte	Acenaphthene
LabResults	Analyte	Acenaphthylene
LabResults	Analyte	Acrolein
LabResults	Analyte	Acrylonitrile
LabResults	Analyte	Aldrin
LabResults	Analyte	Aluminum
LabResults	Analyte	Aluminim
LabResults	Analyte	Anthracene
LabResults	Analyte	Antimony
LabResults	Analyte	Arsenic
LabResults	Analyte	Benzene
LabResults	Analyte	Benzo(a)anthracene
LabResults	Analyte	Benzo(a)pyrene
LabResults	Analyte	Benzo(b)fluoranthene
LabResults	Analyte	Benzo(ghi)perylene
LabResults	Analyte	Benzo(g,h,i)perylene
LabResults	Analyte	Benzo(k)fluoranthene
LabResults	Analyte	Benzoic Acid
LabResults	Analyte	Benzyl alcohol
LabResults	Analyte	bis(2-Chloroethoxy) methane
LabResults	Analyte	Bis(2-chloroethyl) ether
LabResults	Analyte	bis(2-Chloroethyl)ether
LabResults	Analyte	bis(2-Ethylhexyl) phthalate
LabResults	Analyte	Di(2-ethylhexyl)phthalate
LabResults	Analyte	Bromochloromethane
LabResults	Analyte	Bromodichloromethane
LabResults	Analyte	Dichlorobromomethane
LabResults	Analyte	Tribromomethane
LabResults	Analyte	Bromoform
LabResults	Analyte	Bromomethane
LabResults	Analyte	Methyl Bromide
LabResults	Analyte	Butylbenzylphthalate
LabResults	Analyte	Butyl benzyl phthalate
LabResults	Analyte	Cadmium
LabResults	Analyte	Carbazole
LabResults	Analyte	Carbon Disulfide

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Tetrachloromethane
LabResults	Analyte	Carbon Tetrachloride
LabResults	Analyte	Chlorobenzene, total
LabResults	Analyte	Chlorobenzene
LabResults	Analyte	Chlorobenzene (each)
LabResults	Analyte	Chlorodibromomethane
LabResults	Analyte	Dibromochloromethane
LabResults	Analyte	Chloroethane
LabResults	Analyte	Chloroform
LabResults	Analyte	Methyl Chloride
LabResults	Analyte	Chloromethane
LabResults	Analyte	Chromium
LabResults	Analyte	Chrysene
LabResults	Analyte	cis-1,2-Dichloroethylene
LabResults	Analyte	cis-1,2-Dichloroethene
LabResults	Analyte	cis-1,3-Dichloropropene
LabResults	Analyte	Copper
LabResults	Analyte	Cyanide
LabResults	Analyte	Cyanide, free (total)
LabResults	Analyte	Dibenzo(a,h)anthracene
LabResults	Analyte	Dibenzo(a,h)- anthracene
LabResults	Analyte	Dibenzofuran
LabResults	Analyte	Dibromomethane
LabResults	Analyte	Dichlorodifluoromethane
LabResults	Analyte	DDD
LabResults	Analyte	4,4'-DDD
LabResults	Analyte	p,p'-DDD
LabResults	Analyte	p,p'-DDE
LabResults	Analyte	4,4'-DDE
LabResults	Analyte	EDDE
LabResults	Analyte	DDE
LabResults	Analyte	p,p'-DDT
LabResults	Analyte	Total DDT
LabResults	Analyte	4,4'-DDT
LabResults	Analyte	DDT
LabResults	Analyte	Dieldrin
LabResults	Analyte	Diethylphthalate
LabResults	Analyte	Dimethyl phthalate
LabResults	Analyte	Dimethylphthalate
LabResults	Analyte	Di-n-butyl phthalate
LabResults	Analyte	Di-n-butylphthalate
LabResults	Analyte	n-Butylphthalate
LabResults	Analyte	Di-n-octyl phthalate
LabResults	Analyte	Di-n-octylphthalate
LabResults	Analyte	Endosulfan I
LabResults	Analyte	a-Endosulfan
LabResults	Analyte	b-Endosulfan



### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Endosulfan II
LabResults	Analyte	Endosulfan sulfate
LabResults	Analyte	Endrin
LabResults	Analyte	Endrin aldehyde
LabResults	Analyte	Endrin ketone
LabResults	Analyte	Ethyl benzene
LabResults	Analyte	Ethylbenzene
LabResults	Analyte	Fluoranthene
LabResults	Analyte	Fluorene
LabResults	Analyte	Heptachlor
LabResults	Analyte	Heptachlor Epoxide
LabResults	Analyte	Hexachlorobenzene
LabResults	Analyte	Hexachlorobutadiene
LabResults	Analyte	Hexachlorocyclopentadiene
LabResults	Analyte	Hexachloroethane
LabResults	Analyte	Indeno(1,2,3-c,d)pyrene
LabResults	Analyte	Indeno(1,2,3-cd)- pyrene
LabResults	Analyte	Iodomethane
LabResults	Analyte	Isophorone
LabResults	Analyte	Isopropylbenzene
LabResults	Analyte	Manganese
LabResults	Analyte	Mercury
LabResults	Analyte	Mercury, Inorganic
LabResults	Analyte	Methoxychlor
LabResults	Analyte	Methylmercury
LabResults	Analyte	2-Methyl-4,6-Dinitrophenol
LabResults	Analyte	4,6-Dinitro-2- methylphenol
LabResults	Analyte	4,6-Dinitro-2-methylphenol
LabResults	Analyte	Methylene chloride
LabResults	Analyte	Dichloromethane
LabResults	Analyte	Methyl tert-Butyl Ether
LabResults	Analyte	Naphthalene
LabResults	Analyte	Nickel
LabResults	Analyte	Nitrobenzene
LabResults	Analyte	N-Nitroso-di-n propylamine
LabResults	Analyte	N-Nitrosodi-n-propylamine
LabResults	Analyte	N-Nitrosodiphenylamine
LabResults	Analyte	N-Nitroso diphenylamine
LabResults	Analyte	Pentachlorophenol
LabResults	Analyte	Phenanthrene
LabResults	Analyte	Phenol
LabResults	Analyte	Pyrene
LabResults	Analyte	Selenium
LabResults	Analyte	Silver
LabResults	Analyte	Styrene
LabResults	Analyte	Tetrachloroethylene
LabResults	Analyte	Tetrachloroethene

### Data Element Valid Values

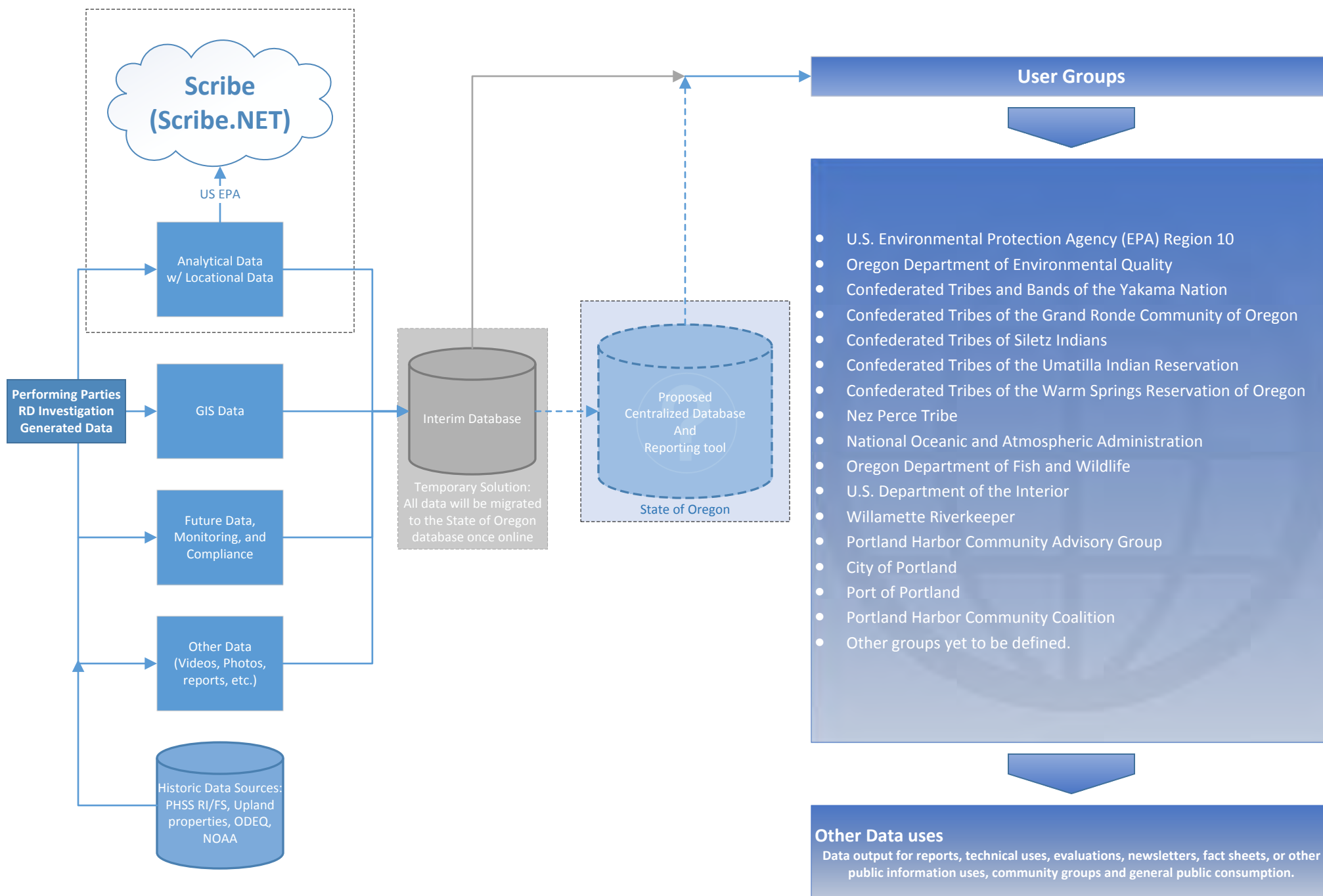
Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Toluene
LabResults	Analyte	Toxaphene
LabResults	Analyte	1,2-Trans-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethene
LabResults	Analyte	trans-1,3-Dichloropropene
LabResults	Analyte	trans-1,4-Dichloro-2-Butene
LabResults	Analyte	Tributyl tin
LabResults	Analyte	Trichloroethylene
LabResults	Analyte	Trichloroethene
LabResults	Analyte	Trichlorofluoromethane
LabResults	Analyte	Vanadium
LabResults	Analyte	Vinyl Acetate
LabResults	Analyte	Vinyl Chloride
LabResults	Analyte	Xylene
LabResults	Analyte	Xylene, total
LabResults	Analyte	Xylenes (total)
LabResults	Analyte	Zinc
LabResults	Analyte	alpha-BHC
LabResults	Analyte	a-BHC
LabResults	Analyte	beta-BHC
LabResults	Analyte	b-BHC
LabResults	Analyte	g-BHC
LabResults	Analyte	gamma-BHC (Lindane)
LabResults	Analyte	Lindane (g-BHC)
LabResults	Analyte	delta-BHC
LabResults	Analyte	d-BHC
LabResults	Result_Units	<To be determined from performing party site specific sampling plan>
LabResults	Total_or_Dissolved	Total
LabResults	Total_or_Dissolved	Dissolved
LabResults	Total_or_Dissolved	NA
LabResults	Total_or_Dissolved	DI Leach
LabResults	Total_or_Dissolved	MWM (Meteoric Water Mobility Ext)
LabResults	Total_or_Dissolved	SPLP
LabResults	Total_or_Dissolved	Suspended
LabResults	Total_or_Dissolved	TCLP
LabResults	Total_or_Dissolved	Acid Soluble
LabResults	Total_or_Dissolved	Bioavailable
LabResults	Total_or_Dissolved	Comb Available
LabResults	Total_or_Dissolved	Extractable
LabResults	Total_or_Dissolved	Filterable
LabResults	Total_or_Dissolved	Fixed
LabResults	Total_or_Dissolved	Free Available
LabResults	Total_or_Dissolved	Inorganic
LabResults	Total_or_Dissolved	Non-filterable
LabResults	Total_or_Dissolved	Non-settleable

**Data Element Valid Values**

<b>Category (Database Table)</b>	<b>Data Element (Database Field)</b>	<b>Valid Value</b>
LabResults	Total_or_Dissolved	Non-volatile
LabResults	Total_or_Dissolved	Organic
LabResults	Total_or_Dissolved	Pot. Dissolved
LabResults	Total_or_Dissolved	Settleable
LabResults	Total_or_Dissolved	Supernate
LabResults	Total_or_Dissolved	Total Recoverable
LabResults	Total_or_Dissolved	Total Residual
LabResults	Total_or_Dissolved	Vapor
LabResults	Total_or_Dissolved	Volatile
LabResults	Total_or_Dissolved	WAD
LabResults	Analytical_Method	<To be determined from performing party site specific sampling plan>
LabResults	Basis	Wet
LabResults	Basis	Dry
LabResults	Lab_Name	<To be determined from performing party site specific sampling plan>
LabResults	QA_Comment	Final
LabResults	QA_Comment	Accepted
LabResults	QA_Comment	Preliminary
LabResults	QA_Comment	Rejected
LabResults	QA_Comment	Validated
LabResults	Result_Qualifier	J
LabResults	Result_Qualifier	U
LabResults	Result_Qualifier	UJ
LabResults	Result_Qualifier	J-
LabResults	Result_Qualifier	J+
LabResults	Result_Qualifier	R
LabResults	Validated	Yes
LabResults	Validated	No
LabResults	ValidationLevel	S2BVEM
LabResults	ValidationLevel	S3VEM
LabResults	ValidationLevel	S4VEM
LabResults	ValidationLevel	NA
LabResults	ValueType	Actual
LabResults	ValueType	Calculated
LabResults	ValueType	Blank Corrected Calc
LabResults	ValueType	Control Adjusted
LabResults	ValueType	Estimated

## **Appendix C - Data Management Conceptual Model**

## Data Management Conceptual Model



## **Attachment 2**

### **Template Sufficiency Assessment Summary Table**

[Name] Project Area Sufficiency Assessment Summary

[date]

[illegible]

## **Appendix C**

### **Statement of Work**



**REMEDIAL DESIGN STATEMENT OF WORK  
PORTLAND HARBOR SUPERFUND SITE**

**U.S. Moorings Project Area**

**Portland, Multnomah County, State of Oregon**

**EPA Region 10**

**February 2020**

**TABLE OF CONTENTS**

1.	INTRODUCTION .....	1
2.	COMMUNITY INVOLVEMENT.....	2
3.	REMEDIAL DESIGN .....	3
4.	REPORTING .....	14
5.	DELIVERABLES .....	15
6.	SCHEDULES .....	23
7.	STATE AND TRIBAL PARTICIPATION .....	26
8.	REFERENCES .....	26

**Attachments**

Figure 1. Optimized Remedial Design Timeline

Attachment 1. Program Data Management Plan for Portland Harbor

Attachment 2. Template Sufficiency Assessment Summary Table

## **1. INTRODUCTION**

- 1.1 Purpose of the Statement of Work.** The U.S. Environmental Protection Agency (EPA) signed a Record of Decision for the Portland Harbor Superfund Site (Site) on January 3, 2017 (ROD) that selected Remedial Actions (RA) for the in-river portion of the Site from approximately river miles (RMs) 1.9 to 11.8. The ROD provides information about how Site data will influence Remedial Design (RD), remedial construction, and future maintenance of remediated areas. The ROD states that the actual technologies assigned during RD will be dependent on a number of characteristics and environmental conditions to ensure that the final constructed remedy is appropriate for area-specific conditions, e.g., Sediment Management Areas (SMAs). The ROD also identifies post-ROD / RD sampling activities that will support and refine the Site's Conceptual Site Model (CSM) to implement RD and RA. Any reference to the ROD in this SOW, also includes any future ROD amendments or Explanations of Significant Differences EPA may issue.

This Statement of Work (SOW) sets forth the procedures and requirements for implementing the RD Work at the US Moorings Project Area (hereinafter identified as the Project Area), defined as “the active cleanup area designated on Figure 31 b and c of the ROD between approximately the downstream end of the St. John’s Bridge to River Mile 6.1 on the west side of the Willamette River, and more specifically depicted on the map attached as Appendix E to the Settlement Agreement. The Project Area includes certain river banks from top of the bank to the river.

As described in the ROD, soils/sediment or riverbanks identified in the ROD with known contaminated river banks and/or those that are contiguous with an SMA (as determined from RD Work) will be evaluated to determine if they are contaminated and pose design considerations. If a river bank poses a recontamination concern and should be remediated in conjunction with the sediment RA, it will undergo RD utilizing remedial technologies consistent with contiguous contaminated sediment. Further upland source control assessments, if needed, will be addressed as upland source issues by the Oregon Department of Environmental Quality (DEQ) and individual property owners or as necessary through EPA’s authorities.

### **1.2 Structure of the SOW**

- Section 2 (Community Involvement) sets forth EPA’s and Respondent’s responsibilities for community involvement.
- Section 3 (Remedial Design) sets forth the process for developing the RD, which includes the submission of specified primary deliverables.
- Section 4 (Reporting) sets forth Respondent’s reporting obligations.

- Section 5 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Respondent's submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 6 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the RD.
- Section 7 (State and Tribal Participation) addresses State and Tribal participation.
- Section 8 (References) provides a list of references, including Uniform Resource Locations (URLs).

**1.2** The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Settlement Agreement, have the meanings assigned to them in CERCLA, in such regulations, or in the Settlement Agreement, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated.

**1.3 Relationship to other work at the Portland Harbor Superfund Site.** While all approved data, including baseline data will be considered, all final decisions regarding RD at the Project Area, including delineation of SMAs, implementation of any sampling necessary for design, and application of the ROD's technology matrix, will be made under this Settlement Agreement and this SOW.

## **2. COMMUNITY INVOLVEMENT**

### **2.1 Community Involvement (CI) Responsibilities**

- (a) EPA has the lead responsibility for developing and implementing CI activities at the Site. Previously (during the Remedial Investigation/Feasibility Study (RI/FS) phase), EPA developed a Community Involvement Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities specific to the RD Work or the Project Area that are not already addressed or provided for in the existing CIP, including, if applicable, any Technical Assistance Grant (TAG), any use of the Technical Assistance Services for Communities (TASC) contract, and/or any Technical Assistance Plan (TAP).
- (b) If requested by EPA, Respondent shall participate in CI activities, including participation in: (1) the preparation of information regarding the RD Work for dissemination to the public, with consideration given to including mass media and/or Internet notification; and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondent's support of EPA's CI activities may include providing online access to initial submissions and updates of deliverables to: (1) any Community Advisory Groups,

(2) any TAG recipients and their advisors; and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Respondent's responsibilities for CI activities. All CI activities conducted by Respondent at EPA's request are subject to EPA's oversight. Upon EPA's request, Respondent shall make Project Area-related data and information available to the public. EPA plans to coordinate its community outreach efforts with DEQ.

- (c) Respondent will explore the possibility of participating in EPA's Superfund Job Training Initiative Program (SuperJTI) as it may relate to the RD Work or the Project Area. This program provides job training to communities affected by Superfund sites.
- (d) Respondent's CI Coordinator. Respondent shall, within 30 days of the effective date of the Settlement, designate and notify EPA of Respondent's CI Coordinator. Respondent may hire a contractor for this purpose. Respondent's notice must include the name, title, and qualifications of the Respondent's CI Coordinator. Respondent's CI Coordinator is responsible for providing support regarding EPA's CI activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the RD Work or the Project Area.

### **3. REMEDIAL DESIGN**

#### **3.1 Sufficiency Assessment.**

- (a) The Portland Harbor ROD Section 14.2.11 states that implementation of the Selected Remedy may need to be conducted in phases and/or work sequenced based on consideration of a range of factors including source control actions and recontamination potential. To evaluate source control actions and recontamination potential, a Sufficiency Assessment Report shall be submitted to EPA for comment and approval.

The objective of the Sufficiency Assessment is to evaluate upland (direct discharges, groundwater, river bank, overwater) and in-water sources of contaminants to determine whether they have been adequately investigated and sufficiently controlled or considered such that the RA can proceed. The Sufficiency Assessment will consider whether upland (direct discharges, groundwater, river bank, overwater) and in-water sources will adversely impact the short- or long-term effectiveness of the proposed RA. The Sufficiency Assessment should be completed following the schedule deadlines in ¶6.2.

- (b) The Sufficiency Assessment shall consider potential impacts from a range of potential sources, including but not limited to:

- (1) Upland pathways (direct discharges, groundwater, river bank, and overwater);
  - (2) In-water sources of recontamination;
  - (3) Resuspension of sediments from natural and anthropogenic activities;
  - (4) Factors that may impact sediment cap effectiveness;
  - (5) Potential future use for near shore land and in-water uses; and
  - (6) Other future conditions (e.g., climate change impacts) that may impact recontamination potential.
- (c) The components of the Sufficiency Assessment Report shall include:
- (1) Description of the Project Area setting, the upland and in-water source areas being evaluated and an overview of the remainder of the report.
  - (2) A CSM that describes the geographically relevant upland (direct discharges, groundwater, river bank, and overwater) and in-water sources of contamination, contaminants of concern (COCs) and migration pathways into the Project Area.
  - (3) A summary of available information regarding the source control status of direct discharges, groundwater, river bank, and overwater sources of COCs into the Project Area that may affect achieving any of the remedial action objectives by comparing to ROD Table 17 cleanup levels and Table 21 RALs and PTW thresholds as one line of evidence; identification of any sources, COCs and pathways that have not been effectively addressed and could impact the RA; and identification of data gaps.
  - (4) A summary of in-water sources of COCs to the Project Area that may affect achieving any of the remedial action objectives. One line of evidence in this evaluation will be comparing to ROD Table 17 cleanup levels and Table 21 RALs and PTW Thresholds including a description of any proposed measures to address in-water sources including the timing and expected effectiveness of these measures.
  - (5) An assessment of the degree to which the proposed remedy will address upland (direct discharges, overwater, groundwater, and river bank) and in-water sources of COCs to the Project Area.
  - (6) An assessment of the degree to which changed future conditions (e.g., changes in land and waterway use and climate change) may affect recontamination potential at the Project Area.

- (7) The results of the Sufficiency Assessment that includes evaluation of the sufficiency of upland and in-water source controls to reduce the potential for recontaminating the selected remedy following implementation. The assessment will consider the general magnitude of any potential recontamination effects and discuss implications to the selected remedy for the Project Area. The discussion will also present the limitations of the assessment approaches and any remaining data gaps.
- (8) A sufficiency assessment template table of upland sources (direct discharges, groundwater, overwater, river bank) that explicitly identifies the potential sources and pathways at the Project Area and categorizes the status of each source using the outcome categories: (A) sources are sufficiently controlled; (B) sources are conditionally controlled; and (C) sources are not sufficiently assessed or controlled. An example table is provided in Attachment 2 of this SOW. Completing the sufficiency assessment summary table is a valuable exercise to ensure that there is consensus on the status of potential sources at the Project Area. The goal of this table is to serve as the basis for EPA's sufficiency determination in informing respondent whether cleanup can go forward and, if potential sources remain, how those sources should be integrated into the in-water design. The sufficiency assessment summary table shall be updated and included in the Pre-Final (95%) RD as a final check to ensure remedial construction can commence.
- (9) Description of how data gaps, if any, will be addressed.
- (10) Conclusions and Recommendations. The Sufficiency Assessment Report shall present conclusions and recommendations. Recommendations will be expressed as one of three potential outcomes:
  - (i) Sources are sufficiently controlled: the report recommends the specified area of sediment cleanup proceed based on reasonable confidence that the relevant recontamination potential is as minimal as possible.
  - (ii) Sources are conditionally controlled: the report recommends the specified area of sediment cleanup proceed so long as certain additional controls or oversight are implemented in a reasonable timeframe or that any area information gaps are considered.
  - (iii) Sources are not sufficiently assessed or controlled: the report recommends that specified area of sediment cleanup not proceed until additional controls have been implemented and assessed for effectiveness.

- (11) References section listing each document cited in the report
- (d) The Sufficiency Assessment does not itself satisfy the requirements of the federal Clean Water Act, CERCLA or other authorities. For example, a site or area that has been evaluated for source control sufficiency for the in-water RA may still be required to take additional measures not governed by this Settlement Agreement to meet water quality permit or upland cleanup requirements.

Following remedy implementation, post-construction monitoring will be performed to evaluate remedy effectiveness. Post-construction monitoring will be designed to distinguish between recontamination and assessing whether the remedy is functioning as intended to demonstrate long-term performance of the remedy across appropriate temporal and spatial scales. See ¶ 5.6(i) of this SOW.

**3.2 Pre-Design Investigation.** The purpose of the Pre-Design Investigation (PDI) is to identify and address data gaps by conducting field investigations to develop the Basis of Design Report and RD Work Plan.

- (a) **PDI Work Plan.** Respondent shall submit a PDI Work Plan (PDIWP) for EPA comment and approval. The PDIWP must include:
  - (1) An evaluation and summary of all available existing data, including baseline data within/near the US Moorings Project Area, and description of data gaps for: preliminary SMA delineation consistent with EPA’s June 6, 2017 *Portland Harbor Superfund Site, Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring*; CSM refinement consistent with Section 14.2 (*Post-ROD Data Gathering and Other Information Verification*) of the ROD; and application of ROD Figure 28 (*Technology Application Decision Tree*). This includes additional field investigations, that must be completed to support RD and to refine the CSM. Data gap analysis will include:
    - (i) Surface and subsurface contaminant concentrations;
    - (ii) Surface water, sediment pore water and groundwater data;
    - (iii) Bathymetry;
    - (iv) Flood-rise analysis; and
    - (v) Non-aqueous phase liquid (NAPL) extent and mobility delineation, if applicable. NAPL, as consistent with the ROD, refers to “substantial presence of product” as defined in Section 3.6.2.1 of the Statement of Work to the 2009 ASAO for Removal Action at the Gasco Sediments Site (CERCLA Docket No. 10-2009-0255) (Appendix A of the Settlement Agreement).

- (2) A Project Area Field Sampling Plan, as described in ¶ 5.6(c) (Supporting Deliverables) of this SOW. The plan includes the details of the media to be sampled, contaminants or parameters for which sampling will be conducted, location (areal extent and depths), number of samples, and a project schedule;
  - (3) A Project Area Quality Assurance Project Plan (QAPP) as described in ¶ 5.6(d) (Supporting Deliverables) of this SOW;
  - (4) A Project Area Health and Safety Plan (HASP), as described in ¶ 5.6(a) (Supporting Deliverables) of this SOW;
  - (5) A Project Area Emergency Response Plan as described in ¶ 5.6(b) (Supporting Deliverables) of this SOW; and
  - (6) A description of all necessary actions to ensure compliance with ¶ 3.13 (Off-Site Shipments) of this SOW.
- (b) **PDI Evaluation Report.** Following implementation of the PDI scope in the approved PDIWP, Respondent shall submit a PDI Evaluation Report for EPA comment and approval. This report must include:
- (1) Summary of the investigations performed;
  - (2) Summary of investigation results;
  - (3) Summary of validated data (i.e., tables and graphics);
  - (4) Data validation reports and laboratory data reports;
  - (5) Narrative interpretation of data and results;
  - (6) Results of statistical and modeling analyses, if applicable;
  - (7) Photographs documenting the work conducted; and
  - (8) Conclusions and recommendations on whether the data are sufficient to complete the BODR.



- 3.3 Basis of Design Report (BODR).** The purpose of the BODR is to refine the SMA, update the CSM and refine the technology assignments to the SMA consistent with the Decision Tree in Figure 28 of the ROD. To the extent practicable, the BODR will incorporate information, evaluations and approaches developed in the Technical Evaluations Work Plan and BODR prepared under Appendix A of the Settlement Agreement. Respondent shall submit a BODR for EPA comment and approval. This document will describe the objectives, overall approach, schedule, milestone check in points and specific elements of the BODR. The BODR will:
- (a) Summarize the results of the sufficiency assessment and whether potential sources of recontamination have been adequately investigated and controlled or considered such that the RA can proceed.
  - (b) Summarize existing site conditions and site factors which affect remediation technology assignments including detailed reasonably anticipated future navigation and land use information and other data, as depicted in the Decision Tree, and refinement of the CSM pertaining to the Project Area;
  - (c) Summarize design criteria applicable to the Project Area as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995) and consistent with Section 14.2.9 (*Design Requirements*) and Section 14.2.10 (*Performance Standards*) of the ROD;
  - (d) Describe Decision Tree analysis and identify a preferred remedial approach, including technology assignments and Project Area specific institutional controls, based on consistency with the applicable Remedial Action Objectives (RAOs) and ROD elements for the Project Area;
  - (e) Identify long-term monitoring and maintenance considerations for the Project Area;
  - (f) Identify design studies for RD, if any, such as subsurface and surface sediment sampling and benthic toxicity testing that may be needed to evaluate attainment of applicable RAOs and address proposed remedial technology means and methods, and gather other information necessary for RD for the Project Area; and
  - (g) Describe a sequencing plan as well as an overall schedule to complete the design studies, RD and RA for the Project Area.

**3.4 RD Work Plan (RDWP).** Respondent shall submit a RDWP for EPA comment and approval. The RDWP must include:

- (a) Plans for implementing all RD activities identified in this SOW, in the BODR, in the RDWP, or as required by EPA to be conducted to develop the RD for the Project Area;
- (b) A description of the overall management strategy for performing the RD, including a proposal for phasing of design and construction, if applicable;
- (c) Detailed reasonably anticipated future navigation and land use information and other data to inform the Decision Tree in Figure 28 of the ROD;
- (d) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the RA as necessary to implement the Work;
- (e) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;
- (f) Descriptions of any areas requiring clarification and/or anticipated problems, if any (e.g., data gaps);
- (g) Description of studies and design phases for any on-site transload facility to be used to transload dredged materials from the Project Area or any other area of the Site;
- (h) Description of any proposed supplemental PDI;
- (i) Description of any proposed treatability study;
- (j) Descriptions of any applicable permitting requirements and other regulatory requirements, if any;
- (k) Description of plans for obtaining access in connection with the Work, such as access agreements, property acquisition, property leases, and/or easements; and
- (l) Updates of all supporting deliverables required to accompany the PDIWP or supplemental PDIWP.

**3.5 Meetings.** Respondent shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.

**U.S. Moorings Project Area Remedial Design  
Statement of Work**

**3.6 Supplemental PDI.** The purpose of the Supplemental PDI is to address data gaps identified in the RDWP by conducting additional field investigations in the Project Area.

- (a) **Supplemental PDI Work Plan.** If EPA requests, Respondent shall submit a Supplemental PDI Work Plan (SPDIWP) for EPA comment and approval. The SPDIWP must include all elements as described in ¶ 3.2(a).
- (b) **Supplemental PDI Evaluation Report.** Following the Supplemental PDIWP, Respondent shall submit a Supplemental PDI Evaluation Report for EPA comment and approval. This report must include the same elements as described in ¶ 3.2(b).

**3.7 Treatability Study.** If determined necessary by EPA, Respondent shall perform a Treatability Study (TS) to evaluate the effectiveness of a remedial technology (e.g., reactive cap).

- (a) Respondent shall submit a TS Work Plan (TSWP) for EPA comment and approval. Respondent shall prepare the TSWP in accordance with *EPA's Guide for Conducting Treatability Studies under CERCLA, Final* (Oct. 1992), as supplemented for RD by the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995).
- (b) Following completion of the TS, Respondent shall submit a TS Evaluation Report for EPA comment and approval.
- (c) EPA may require Respondent to supplement the TS Evaluation Report and/or to perform additional treatability studies.

**3.8 Preliminary (30%) RD.** Respondent shall submit a Preliminary (30%) RD for the Project Area for EPA's comment. All information and activities to be performed under the Preliminary (30%) RD shall be included and updated, as needed, in subsequent RD submittals (i.e., 60%, 95%, and 100%). The Preliminary RD must include:

- (a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
- (b) Preliminary drawings and specifications;
- (c) Descriptions of permit requirements, if applicable;
- (d) A description of how the RA will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener*

*Cleanups* (Aug. 2009), and the information described in Appendix M of the Portland Harbor Feasibility Study (June 2016);

- (e) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA;
- (f) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 5.6 (Supporting Deliverables): Institutional Controls Implementation and Assurance Plan; Waste Designation Memo; Biological Assessment; Clean Water Act Analysis; Project Area Monitoring Plan; Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; O&M Plan; and O&M Manual.
- (g) Respondent must demonstrate that any transload facility it intends to use is appropriate for handling and transloading contaminated sediments and other materials that might be dredged by Respondent. In the event Respondent wishes to use a transload facility within the Site for transferring dredged materials from the Project Area, Respondent will provide design specifications for that transload facility, whether prepared by Respondent or another owner or operator. If necessary, EPA shall assist Respondent in obtaining the required design specifications from the transload facility owner or operator. Such specifications shall include information for transload-specific Applicable or Relevant and Appropriate Requirements that must be complied with to build and operate the transload facility. In addition, the transload facility's design specifications must address the following: (1) location of transload operations; (2) identification of contaminated groundwater and soil within the foot print of the transload operations; and (3) plans to remove or remediate these contaminated media during construction of the transload facility, or an analysis of how the presence and operation of the transload facility will not inhibit or prevent implementation of ongoing source control measures and potential remedial measures identified in DEQ's pending upland Record of Decision for the upland property, if applicable. If Respondent intends to use a transload facility outside of the Portland Harbor Superfund Site (see NCP definition of "on-site") for dredged materials from the Project Area, the design specifications provided by Respondent (which may be prepared by another owner or operator) must include Clean Water Act (CWA) Sections 404 and 401 permit application design information to minimize spillage, offsite tracking, worker exposure and ensure stormwater management for approval before submittal to the United States Army Corps of Engineers and DEQ, respectively; and
- (h) Respondent shall use best efforts to include in the RD information from owners of river banks and/or submerged lands that are within the Project Area. Such information shall include, but not be limited to, the owner's future anticipated river use that should be considered in the decision tree process and design,

shipping schedules, and known buried infrastructure. The RD shall document in writing the landowners that were contacted and the information received for all properties in the Project Area. EPA and DEQ assistance may be required to gain information from the property owner.

**3.9 Intermediate (60%) RD.** Respondent shall submit the Intermediate (60%) RD for EPA's comment. The Intermediate RD must: (a) be a continuation and expansion of the Preliminary RD; (b) address EPA's comments regarding the Preliminary RD; and (c) include the same elements as are required for the Preliminary (30%) RD.

**3.10 Pre-Final (95%) RD.** Respondent shall submit the Pre-final (95%) RD for EPA's comment. The Pre-final RD must be a continuation and expansion of the previous design submittal and must address EPA's comments regarding the Intermediate RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD must include:

- (a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's MasterFormat 2016;
- (b) Survey and engineering drawings showing existing Project Area features, such as elements, property borders, easements, and Project Area conditions;
- (c) Pre-Final versions of the same elements and deliverables as are required for the Intermediate RD;
- (d) A specification for photographic documentation of the RA; and
- (e) Updates of all supporting deliverables required to accompany the Preliminary (30%) RD, including an updated sufficiency assessment summary table per ¶ 3.1(c)(8) as a final check to ensure remedial construction can commence.

**3.11 Final (100%) RD.** Respondent shall submit the Final (100%) RD for EPA approval. The Final RD must address EPA's comments on the Pre-final RD and must include final versions of all Pre-final deliverables.

**3.12 Emergency Response and Reporting**

- (a) **Emergency Response and Reporting.** If any event occurs during performance of the RD Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may

present an immediate threat to public health or welfare or the environment, Respondent shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 3.12(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.

- (b) **Release Reporting.** Upon the occurrence of any event during performance of the RD Work that Respondent is required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondent shall immediately notify the National Response Center (phone 1-800-424-8802) and authorized EPA officer orally.
- (c) The “authorized EPA officer” for purposes of immediate oral notifications and consultations under ¶ 3.12(a) and ¶ 3.12(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 10 (if neither EPA Project Coordinator is available).
- (d) For any event covered by ¶ 3.12(a) and ¶ 3.12(b), Respondent shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.
- (e) The reporting requirements under ¶ 3.12 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

### **3.13 Off-Site Shipments**

- (a) Respondent may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondent obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- (b) Respondent may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, it provides notice to the appropriate state environmental official in the receiving facility’s state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the

name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondent also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondent shall provide the notice as soon as practicable after the award of the contract and before the Waste Material is shipped.

- (c) Respondent may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's *Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

#### **4. REPORTING**

**4.1 Progress Reports.** Commencing with the quarter following the Effective Date of the Settlement Agreement and until issuance of Notice of Work Completion pursuant to Section XXXXII of the Settlement Agreement, Respondent shall submit progress reports to EPA on a quarterly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

- (a) The actions that have been taken toward achieving compliance with the Settlement Agreement;
- (b) A summary of all results of validated sampling, tests, and all other data received or generated by Respondent;
- (c) A list of all deliverables that Respondent submitted to EPA;
- (d) A list of all activities scheduled for the next quarter;
- (e) Information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the RD Work, and a description of efforts made to mitigate those delays or anticipated delays;
- (f) A list of any modifications to the work plans or other schedules that Respondent has proposed or that have been approved by EPA; and
- (g) A list of all activities undertaken in support of the CIP during the reporting period and those to be undertaken in the next quarter.

- 4.2 Notice of Progress Report Schedule Changes.** If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 4.1(d), changes, Respondent shall notify EPA of such change at least seven days before performance of the activity.

## **5. DELIVERABLES**

- 5.1 Applicability.** Respondent shall submit all deliverables for EPA approval or for EPA comment as specified in the SOW. In the event ODEQ is authorized as the Project Coordinator, Respondent shall submit deliverables to ODEQ with copies to EPA. If neither is specified, the deliverable does not require EPA's approval or comment. ¶ 5.2 (In Writing) through 5.4 (Formatting Specifications) apply to all deliverables. ¶ 5.5 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.
- 5.2 In Writing.** All deliverables under this SOW must be in writing unless otherwise specified.
- 5.3 General Requirements for Deliverables**
- (a) Except as otherwise provided in this SOW, Respondent shall direct all deliverables required by this SOW to the EPA Project Coordinator: Sean Sheldrake Remedial Project Manager, Superfund and Emergency Management Division, U.S. Environmental Protection Agency, 1200 6th Ave., Ste. 155, M/S 12-D12-1, phone (206) 553-1220, email sheldrake.sean@epa.gov.
  - (b) All deliverables provided to the State and Tribal representatives in accordance with ¶ 7 (State and Tribal Participation) shall be directed to
    - David Lacey and Sarah Greenfield, Department of Environmental Quality, Northwest Region Portland Office, 700 NE Multnomah St., Ste 600, Portland, OR 97232-4100, (503) 229-5354 (David Lacey), david.j.lacey@state.or.us, (503) 229-5445 (Sarah Greenfield), sarah.greenfield@state.or.us
    - The Five Tribes (individual tribal contacts may be updated as necessary):
      - c/o Gail French Fricano, IEc, Industrial Economics, Incorporated, 2067 Massachusetts Ave., Cambridge, MA 02140, (617) 354-0074, GFricano@indecon.com



- c/o Courtney Johnson (for Nez Perce Tribe), Crag Law Center,  
3141 E. Burnside St., Portland, OR 97214, (503) 525-2728,  
courtney@crag.org
  - Laura Shira, Yakama Nation Fisheries, Post Office Box 151, Toppenish,  
WA 98948, (509) 985-3561, shil@yakamafish-nsn.gov.
- (c) All deliverables must be submitted by the deadlines in the RD Schedule and RDWP, as applicable. Respondent shall submit all deliverables to EPA in electronic form, e.g. email pdfs and/or maintain file transfer protocol (ftp) sites as requested by EPA. Formatting specifications for sampling and monitoring data and spatial data are addressed in ¶ 5.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 11” by 17”, Respondent shall also provide EPA with paper copies of such exhibits.

#### **5.4 Formatting Specifications**

- (a) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable (EDD) format (Attachment 1 of the SOW) or as specified by EPA. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes. All data must be formatted such that they can be easily uploaded to the Portland Harbor Superfund Site database (e.g., Scribe). Reports shall be submitted in a format approved by EPA, such as in pdf format with all metadata inserted, 508 tagging done to the extent practicable, in one file per deliverable (versus many), and include bookmarks to the extent practicable to enhance readability.
- (b) Spatial data, including spatially-referenced data and geospatial data, shall be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum, consistent with the format used for such submissions in the RI/FS for the Portland Harbor Superfund Site or as approved by EPA. If applicable, submissions shall include the collection method(s). Projected coordinates may optionally be included but must be documented (four aspects include projection, zone, datum, and units). Spatial data shall be accompanied by metadata, and such metadata shall be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://www.epa.gov/geospatial/epa-metadata->

[editor](#). Respondent is required to upload data collected to EPA's Scribe environmental data management tool or other tool as prescribed by EPA.

- (c) Each file must include an attribute name for each Project Area unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.
- (d) Spatial data submitted by Respondent does not, and is not intended to, define the boundaries of the Project Area.

## **5.5 Approval of Deliverables (See Paragraphs 23 and 24 of the Settlement Agreement)**

**5.6 Supporting Deliverables.** Respondent shall submit each of the following supporting deliverables for EPA comment and approval, except as otherwise approved by EPA. Respondent shall develop the deliverables in accordance with all applicable regulations, guidance, and policies (see ¶ 8 (References)). Respondent shall update each of these supporting deliverables as necessary or appropriate during the RD Work, and/or as requested by EPA. Supporting deliverables to each deliverable are specified in the schedule of ¶ 6.2.

- (a) **Health and Safety Plan.** The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by implementing the RD Work. Respondent shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP required by this RD SOW should cover RD activities and should be, as appropriate, updated to cover activities during the RA and updated to cover activities after RA completion. (Updates may be needed for RA activities and after RA completion.) EPA does not approve the HASP but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.
- (b) **Emergency Response Plan.** The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Project Area (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:
  - (1) Name of the person or entity responsible for responding in the event of an emergency incident;

- (2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;
  - (3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;
  - (4) Notification activities in accordance with ¶ 3.12(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and
  - (5) A description of all necessary actions to ensure compliance with ¶ 3.12a (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the RD Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.
- (c) **Field Sampling Plan.** The Field Sampling Plan (FSP) addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. Respondent shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988). The description of data gaps as required in ¶ 3.2(a)(1) will serve as the basis for the sample collection activities in the FSP. The lateral and vertical extent of contamination exceeding RALs and PTW thresholds will be delineated to the Project Area boundaries both upstream and downstream based on 150-foot core spacing density and will start from the SMAs identified in the evaluation and summary of all existing data set forth in ¶ 3.2(a)(1). The lateral and vertical extent of contamination into the navigation channel is not bound by the Project Area boundary on that side, but rather must be delineated also based on 150-foot core spacing density but to no more than one half distance across the channel and will start from the SMAs identified in the evaluation and summary of all existing data set forth in ¶ 3.2(a)(1).
- (d) **Quality Assurance Project Plan.** The Quality Assurance Project Plan (QAPP) augments the FSP and addresses sample analysis and data handling regarding the RD Work. The QAPP must include a detailed explanation of Respondent's quality assurance, quality control, and chain of custody procedures for all investigations, treatability, design, compliance, and monitoring samples. Respondent shall develop the QAPP in accordance with

**U.S. Moorings Project Area Remedial Design  
Statement of Work**

*EPA Requirements for Quality Assurance Project Plans, QA/R- 5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002); and Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B- 04/900A through 900C (Mar. 2005). The QAPP also must include procedures:*

- (1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Respondent in implementing the Settlement Agreement (Respondent's Labs);
  - (2) To ensure that Respondent's Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;
  - (3) To ensure that Respondent's Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4* (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2* (amended Apr. 2007); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2* (Jan. 2010) or other methods acceptable to EPA;
  - (4) To ensure that Respondent's Labs participate in an EPA-accepted QA/QC program or other QA/QC program acceptable to EPA;
  - (5) For Respondent to provide EPA with notice at least 28 days prior to any sample collection activity;
  - (6) For Respondent to provide split samples and/or duplicate samples to EPA upon request;
  - (7) For EPA to take any additional samples that it deems necessary;
  - (8) For EPA to provide to Respondent, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling;
  - (9) For Respondent to submit to EPA all sampling and tests results and other data in connection with the implementation of the Settlement Agreement.
- (e) **Institutional Controls Implementation and Assurance Plan.** Institutional controls (ICs) at the Site will be implemented to: (1) protect human health and the environment by limiting exposure to contamination left in place; and (2) protect the long-term integrity of the engineered components of the Selected Remedy. The City of Portland and State of Oregon will develop a site-wide Institutional

Control Implementation and Assurance Plan (ICIAP). In coordination with EPA and Respondent for other Project Areas, Respondent will develop a Project Area-specific ICIAP during RD which will, at a minimum, identify the specific and necessary Project Area ICs that will be implemented; plans to implement, maintain, and enforce the ICs; and the parties responsible for implementing and monitoring each IC necessary at the Project Area, consistent with Section 14.2.6. (*Institutional Controls*) of the ROD. Upon approval by EPA, Respondent will provide its Project Area ICIAP to the City and State for incorporation into the site-wide ICIAP. The ICIAP shall be developed in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, and EPA/540/R-09/001 (Dec. 2012) and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012) or as amended or superseded. The ICIAP must include the following additional requirements:

- (1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and
- (2) Legal descriptions and survey maps that are prepared according to current American Land Title Association (ALTA) Survey guidelines and certified by a licensed surveyor.

Among others, three types of ICs have been proposed for the Site that may be used at the Site: (1) Fish Advisories and Educational Outreach; (2) Waterway Use Restrictions or Regulated Navigation Areas (RNAs); and (3) Land Use/Access Restrictions.

- (f) **Waste Designation Memo.** The waste designation memo, if appropriate, will describe the characterization of any RCRA wastes (evaluated as part of the RD) and present the data needs necessary to arrange for the offsite disposal of the wastes at an appropriate facility. Waste designation within the Project Area shall be consistent with Section 3.6.3.1 of Appendix A of the Settlement Agreement.
- (g) **Biological Assessment (BA).** The Respondent shall include a Project Area BA or a supplement to EPA's programmatic Site-wide BA for the preferred alternative as needed to help facilitate National Oceanic and Atmospheric Administration (NOAA) consultation on substantive requirements for the project, as well as a Clean Water Act (CWA) memorandum, to include time for EPA reviews and any necessary revision. The BA shall identify the presence of threatened, endangered, and proposed or candidate species, or their habitat, within the vicinity of the Project Area and shall comply with the substantive requirements of the Endangered Species Act. The BA shall characterize baseline conditions of

existing habitat; address potential project impacts that the remedy may have on these species, their habitat, and their food stocks; and describe best management practices and conservation measures designed to avoid or minimize any negative impacts.

- (h) **Clean Water Act Analysis.** Respondent shall submit a memorandum that provides sufficient information to demonstrate compliance of the proposed RA at the Project Area with the substantive requirements of Section 404(b)(1) and other applicable sections of the CWA. The memorandum shall supplement the information gathered from the Feasibility Study regarding, long- and short-term impacts from the RA at the Project Area, minimization of adverse effects, compliance with the ROD, and an analysis of the need for any mitigation.
- (i) **Project Area Monitoring Plan.** The purpose of the Project Area Monitoring Plan (PAMP) is to obtain baseline information regarding the extent of contamination in affected media at the Project Area; to obtain information, through short- and long-term monitoring, about the movement of and changes in contamination throughout the Project Area, before and during implementation of the RA; to obtain information regarding contamination levels to determine whether Performance Standards (PS) are achieved; and to obtain information to determine whether to perform additional actions, including further Project Area monitoring. As appropriate, approved data from Project Area Pre-RD and RD sampling and Site-wide baseline data may be used in the PAMP. The PAMP must include:
  - (1) Description of the environmental media to be monitored;
  - (2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;
  - (3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Project Area-related requirements;
  - (4) Description of verification sampling procedures;
  - (5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies; and
  - (6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as

higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement).

- (j) **Construction Quality Assurance/Quality Control Plan (CQA/QCP).** The purpose of the Construction Quality Assurance/Quality Control Plan (CQA/QCP) is to describe planned and systemic activities that provide confidence and that verify that the RA construction will and do satisfy all plans, specifications, and related requirements, including quality objectives. The CQA/QCP must:
  - (1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/QCP;
  - (2) Describe the PS required to be met to achieve Completion of the RA;
  - (3) Describe the activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
  - (4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/QCP;
  - (5) Describe industry standards and technical specifications used in implementing the CQA/QCP;
  - (6) Describe procedures for tracking construction deficiencies from identification through corrective action;
  - (7) Describe procedures for documenting all CQA/QCP activities; and
  - (8) Describe procedures for retention of documents and for final storage of documents.
- (k) **Transportation and Off-Site Disposal Plan.** The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with ¶ 3.13 (Off-Site Shipments). The TODP must include:
  - (1) Proposed routes for off-site shipment of Waste Material;
  - (2) Identification of communities affected by shipment of Waste Material; and
  - (3) Description of plans to minimize impacts on affected communities.
- (l) **O&M Plan.** The O&M Plan describes the requirements for inspecting, operating, and maintaining the RA. Respondent shall develop the O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:

- (1) Description of PS required to be met to implement the ROD;
  - (2) Description of activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
  - (3) **O&M Reporting.** Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;
  - (4) Description of corrective action in case of systems failure, including: (i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve PS; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and
  - (5) Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.
- (m) **O&M Manual.** The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Respondent shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).

## 6. SCHEDULES

- 6.1 Applicability and Revisions.** The following schedule provides an RD timeline under which all deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the schedule set forth below. The schedule identifies deliverables that can be developed concurrently for efficiency. EPA's expectations are an optimized RD timeline as presented in **Figure 1**. Respondent may submit proposed revised schedules for EPA approval. Upon EPA's approval, the revised schedules supersede the schedule set forth below, and any previously-approved schedule.



## 6.2 Schedule

	<b>Description of Deliverable</b>	<b>Included Supporting Deliverable</b>	<b>¶ Ref.</b>	<b>Deadline</b>
	Notification of Respondent's CI Coordinator		2.1(d)	30 days after Effective Date of the Settlement Agreement
1a	Draft Sufficiency Assessment Report		3.1	90 days after Effective Date of the Settlement Agreement <sup>1</sup>
1b	Final Sufficiency Assessment Report		3.1	45 days after EPA's comments on the Draft Sufficiency Assessment Report <sup>1</sup>
2a	Draft PDI Work Plan	FSP, QAPP, HASP, ERP	3.2(a)	90 days after Effective Date of the Settlement Agreement <sup>1</sup>
2b	Final PDI Work Plan	Same as above	3.2(a)	45 days after EPA's comments on the Draft PDI Work Plan <sup>1</sup>
3a	Draft PDI Evaluation Report		3.2(b)	As set forth in the approved PDI Work Plan <sup>1</sup>
3b	Final PDI Evaluation Report		3.2(b)	As set forth in the approved PDI Work Plan <sup>1</sup>
4a	Draft BODR		3.3	90 days after EPA approval of the Final PDI Evaluation Report <sup>1</sup>
4b	Final BODR	Same as above	3.3	45 days after EPA's comments on the Draft BODR <sup>1</sup>
5a	Draft RDWP	Updates to FSP, QAPP, HASP, ERP	3.4	90 days after EPA's approval on the Final BODR <sup>1</sup>
5b	Final RDWP	Same as above	3.4	45 days after EPA's comments on the Draft RDWP <sup>1</sup>
6a	Draft Supplemental PDI Work Plan (if needed)	FSP, QAPP, HASP, ERP	3.6(a)	As set forth in the draft RDWP <sup>1</sup>
6b	Final Supplemental PDI Work Plan (if needed)	Same as above	3.6(a)	As set forth in the draft RDWP <sup>1</sup>
7a	Draft Supplemental PDI Evaluation Report (if needed)		3.6(b)	As set forth in the approved Final RDWP <sup>1</sup>
7b	Final Supplemental PDI Evaluation Report (if needed)		3.6(b)	As set forth in the approved Final RDWP <sup>1</sup>

### U.S. Moorings Project Area Remedial Design Statement of Work

	<b>Description of Deliverable</b>	<b>Included Supporting Deliverable</b>	<b>¶ Ref.</b>	<b>Deadline</b>
8a	Draft Treatability Study Work Plan (if required)		3.7(a)	As set forth in the draft RDWP <sup>1</sup>
8b	Final Treatability Study Work Plan (if required)		3.7(a)	As set forth in the draft RDWP RDWP <sup>1</sup>
9a	Draft Treatability Study Evaluation Report (if required)		3.7(b)	As set forth in the approved Final RDWP <sup>1</sup>
9b	Final Treatability Study Evaluation Report (if required)		3.7(b)	As set forth in the approved Final RDWP <sup>1</sup>
10	Preliminary (30%) RD	All supporting deliverables described in ¶ 5.6	3.8	As set forth in the approved Final RDWP <sup>1</sup> Work on the 30% design will begin prior to completion of the PDI Reports but will not be completed until after the PDI Reports are completed.
11	Intermediate (60%) RD	Same as above	3.9	As set forth in the approved Final RDWP
12	Pre-final (95%) RD	Same as above and updated sufficiency assessment summary table	3.10	As set forth in the approved Final RDWP
13	Final (100%) RD	Same as above	3.11	As set forth in the approved Final RDWP
14	Progress Reports		4.1	Quarterly <sup>1</sup>

Notes:

<sup>1</sup> Preparation of many of these deliverables can occur concurrently for an efficient RD schedule. Figure 1 outlines EPA's expectations for an optimized RD timeline.

## **7. STATE AND TRIBAL PARTICIPATION**

- 7.1 Copies.** Respondent shall, at any time it sends a deliverable to EPA, send a copy of such deliverable to DEQ and Tribal Governments identified in the Settlement Agreement. EPA shall be responsible for coordinating comments with the State and Tribes to meet the review schedule. Written comments on the deliverables provided to EPA from the State or Tribes shall be provided to the Respondent when EPA provides comments to Respondent. Respondent shall copy other agency Memorandum of Understanding partners (Oregon Department of Fish and Wildlife, NOAA, and U.S. Department of the Interior). EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Respondent, send a copy of such document to the State and Tribes and the agency partners.
- 7.2 Review and Comment.** The State and Tribes will have a reasonable opportunity for review and comment prior to:
- (a) Any EPA approval or disapproval under ¶ 5.5 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval, and
  - (b) Any disapproval of, or Notice of Work Completion under Section XXXXII of the Settlement Agreement (Notice of Work Completion).
  - (c) Any modifications of this SOW or related deliverables under ¶ 89 and Section XXVII of the Settlement Agreement.

## **8. REFERENCES**

- 8.1** The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 8.2:
- (a) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G 89/004 (Oct. 1988).
  - (b) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).
  - (c) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

- (d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).
- (e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr. 1990).
- (f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).
- (g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).
- (h) Permits and Permit "Equivalency" Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).
- (i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R 92/071A (Nov. 1992).
- (j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).
- (k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995). Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).
- (l) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).
- (m) Operation and Maintenance in the Superfund Program, OSWER 9200.1-37FS, EPA/540/F-01/004 (May 2001).
- (n) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).
- (o) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).
- (p) Quality Systems for Environmental Data and Technology Programs -- Requirements with Guidance for Use, ANSI/ASQ E4-2004 (2004).
- (q) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
- (r) Superfund Community Involvement Handbook, EPA/540/K-05/003 (Apr. 2005).

**U.S. Moorings Project Area Remedial Design  
Statement of Work**

- (s) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).
- (t) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).
- (u) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (v) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).
- (w) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).
- (x) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), available at <https://www.epa.gov/geospatial/geospatial-policies-and-standards> and <https://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (y) Principles for Greener Cleanups (Aug. 2009), available at <https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.
- (z) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).
- (aa) Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230), (July 2010), <https://www.epa.gov/cwa-404/section-404b1-guidelines-40-cfr-230>.
- (bb) Recommended Evaluation of Institutional Controls: Supplement to the “Comprehensive Five-Year Review Guidance,” OSWER 9355.7-18 (Sep. 2011).
- (cc) Construction Specifications Institute's MasterFormat 2016, available from the Construction Specifications Institute, <https://www.csiresources.org/practice/standards/masterformat>.
- (dd) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)
- (ee) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).
- (ff) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).

**U.S. Moorings Project Area Remedial Design  
Statement of Work**

- (gg) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), <http://www.epaossc.org/HealthSafetyManual/manual-index.htm>
- (hh) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
- (ii) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017).
- (jj) USEPA Portland Harbor Superfund Site, Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring (June. 2017).

**8.2** A more complete list may be found on the following EPA Web pages:

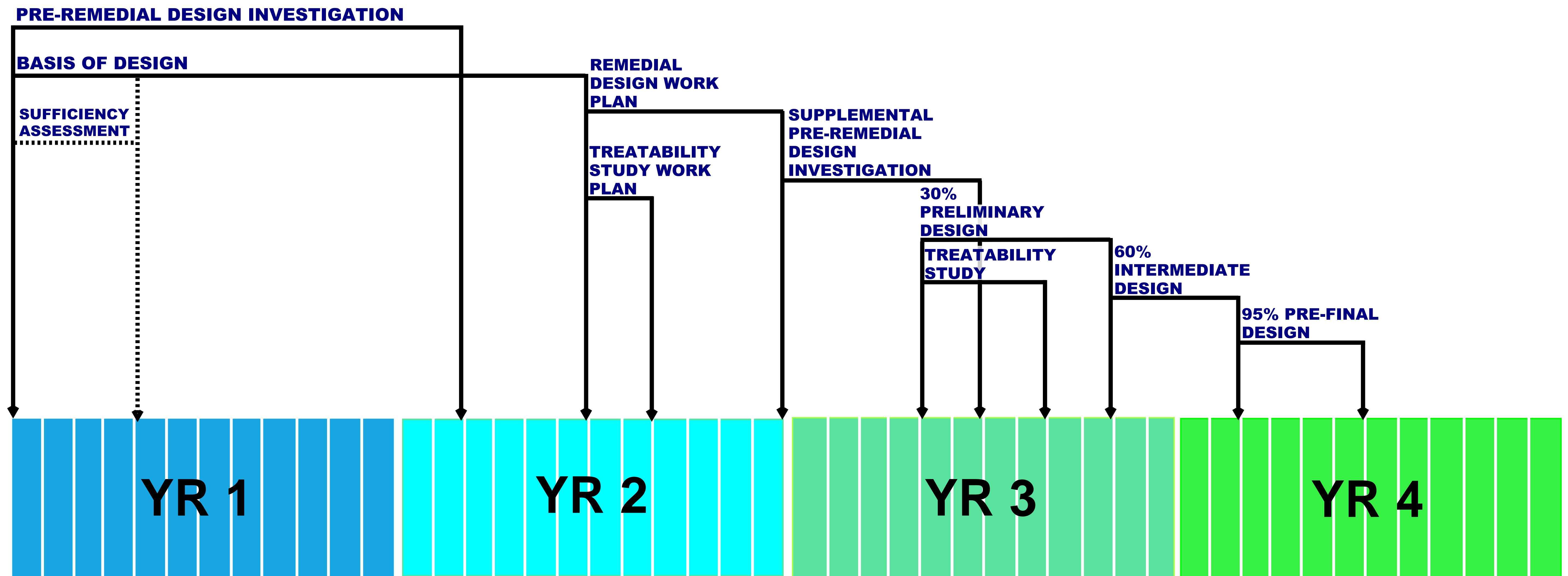
Laws, Policy, and Guidance <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>

Test Methods Collections <https://www.epa.gov/measurements/collection-methods>

**8.3** For any regulation or guidance referenced in the Settlement Agreement or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Respondent receives notification from EPA of the modification, amendment, or replacement.

## **Figure 1**

### **Optimized Remedial Design Timeline**



\* Current schedule allows 2.5 months for PRPs to create initial draft of RDWP and 30% RD along with 3.5 months for EPA/partner review and comments. The 3.5 months includes a review/comment cycle of the initial draft document by EPA and TCT, development of the draft final document by PRP, and a final review by EPA. This review process will be shortened for the 60% RD and 95% RD as EPA expects the PRPs to have incorporated EPA comments from the 30% RD.

**FIGURE 1. OPTIMIZED REMEDIAL DESIGN TIMELINE**



## **Attachment 1**

### **Program Data Management Plan for Portland Harbor Including Electronic Data Deliverable Format**

# **Program Data Management Plan**

## **Portland Harbor Remedial Design Investigation Portland Harbor Superfund Site**

Prepared by  
***U.S. Environmental Protection Agency Region 10***  
***August 2018***



## TABLE OF CONTENTS

<b>1.0 Introduction .....</b>	<b>2</b>
1.1 Site Background.....	2
1.2 Objective and Scope .....	2
1.2.1 Data Categories .....	3
1.2.2 Major Stakeholder Groups, Performing Parties, and Community Groups.....	3
1.2.3 Major Data Collection Activities.....	4
<b>2.0 Data Management .....</b>	<b>4</b>
2.1 Data Management Platform .....	5
2.2 Roles and Responsibilities .....	5
2.2.1 Performing Parties.....	6
2.2.2 Data Manager .....	6
2.2.3 EPA Remedial Project Managers.....	7
2.2.4 EPA Regional Scribe.NET Data Coordinator.....	7
2.3 Data Elements .....	8
2.3.1 Project Identification Information.....	8
2.3.2 Environmental Monitoring Data .....	8
2.3.3 Locational Data.....	8
2.4 Data Repository .....	9
<b>3.0 Data Verification .....</b>	<b>9</b>
<b>4.0 Data Reporting Procedures .....</b>	<b>9</b>
<b>5.0 Data Access .....</b>	<b>9</b>

## Figures

<b>Figure 1. Data Consolidation and Archiving .....</b>	<b>5</b>
<b>Figure 2. Process Workflow.....</b>	<b>6</b>

## Appendices

<b>Appendix A – Required Data Elements</b>	
<b>Appendix B – Data Element Valid Values</b>	
<b>Appendix C – Data Management Conceptual Model</b>	

## **Definitions and Acronyms**

ASASOC	Administrative Settlement Agreement and Order on Consent
DMP	data management plan
EDD	electronic data deliverables
EPA	U.S. Environmental Protection Agency
ERT	EPA Emergency Response Team located in Edison, NJ
HUC	hydrologic unit code
ID	identification
ODEQ	Oregon Department of Environmental Quality
PHSS	Portland Harbor Superfund Site
RPM	Remedial Project Manager (EPA Region 10)
Scribe	data management application (created for ERT)
Scribe.NET	web-based portal for archiving Scribe project files and data

## **1.0 Introduction**

To ensure that environmental data collected at the Portland Harbor Superfund Site (PHSS) adhere to specific standards and practices, a programmatic level data management plan (DMP) was developed that provides guidance and data requirements for the various parties involved with the pre-design and design related data collection activities. While this DMP is a standalone document, it is to be used in concert with the Administrative Settlement Agreement and Order on Consent (ASAOC) statement of work, Region 10 data management plan, and the respective quality management plans developed for each performing party sampling effort.

### **1.1 Site Background**

The site is located along the lower reach of the Willamette River in Portland, Oregon, and extends from approximately river mile 1.9 to 11.8. While the site is extensively industrialized, it is within a region characterized by commercial, residential, recreational, and agricultural uses. Land use along the lower Willamette River in the site includes marine terminals, manufacturing, other commercial operations, public facilities, parks, and open spaces. The State of Oregon owns certain submerged and submersible lands underlying navigable and tidally influenced waters. The ownership of submerged and submersible lands is complicated and has changed over time.

This lower reach was once a shallow, meandering portion of the Willamette River but has been redirected and channelized via filling and dredging. A federally maintained navigation channel, extending nearly bank-to-bank in some areas, doubles the natural depth of the river and allows transit of large ships into the active harbor. Much of the river bank contains overwater piers and berths, port terminals and slips, and other engineered features. While a series of dams in the upper Willamette River watershed moderate's fluctuations of flow in the lower portions of the river, flooding still occurs approximately every 20 years, with the last occurring in 1996.

Armoring to stabilize banks covers approximately half of the harbor shoreline, which is integral to the operation of activities that characterize Portland Harbor. Riprap is the most common bank-stabilization measure. However, upland bulkheads and rubble piles are also used to stabilize the banks. Seawalls are used to control periodic flooding as most of the original wetlands bordering the Willamette in the Portland Harbor area have been filled. Some river bank areas and adjacent parcels have been abandoned and allowed to revegetate, and beaches have formed along some modified shorelines due to relatively natural processes.

Development of the river has resulted in major modifications to the ecological function of the lower Willamette River. However, several species of invertebrates, fishes, birds, amphibians, and mammals, including some protected by the Endangered Species Act, use habitats that occur within and along the river. The river is also an important rearing site and pathway for migration of anadromous fishes, such as salmon and lamprey. Various recreational fisheries, including salmon, bass, sturgeon, crayfish, and others, are active within the lower Willamette River.

### **1.2 Objective and Scope**

The objective of this DMP is to ensure that environmental data and supporting information are collected and managed in a manner that preserves, protects, and makes the information available to all stakeholders, performing parties, and other affected groups. This DMP applies to data and

information collected in support of the PHSS by the performing party's activities as related to the remedial design effort and per the individual ASAOC. While it does not cover all information (e.g., photos, field logs) that is managed for specific projects, it is intended to address those types of data deemed critical to decision making for the site. Appendix C provides a conceptual model depicting the comprehensive approach to the management of data derived from previous and future studies at the PHSS. The subsections below identify the general data categories, performing parties collecting environmental data, and major sampling activities.

### ***1.2.1 Data Categories***

This plan identifies standard data elements and data management processes for the following data categories:

- Project identification information
- Environmental sampling data
- Locational data

The individual data elements for each of these categories represent the minimal amount of information that is needed for project specific decision making and data sharing among stakeholders and performing parties. These are further identified in the Data Management section.

### ***1.2.2 Major Stakeholder Groups***

The major stakeholder groups have been identified as those groups who are actively involved in site-wide planning and environmental data collection and sharing for this site. The major stakeholders include signatories to the 2001 Memorandum of Understanding, performing parties, and community groups:

- Memorandum of understanding members
  - U.S. Environmental Protection Agency (EPA) Region 10
  - Oregon Department of Environmental Quality
  - Confederated Tribes and Bands of the Yakama Nation
  - Confederated Tribes of the Grand Ronde Community of Oregon
  - Confederated Tribes of Siletz Indians
  - Confederated Tribes of the Umatilla Indian Reservation
  - Confederated Tribes of the Warm Springs Reservation of Oregon
  - Nez Perce Tribe
  - National Oceanic and Atmospheric Administration
  - Oregon Department of Fish and Wildlife
  - U.S. Department of the Interior
- Performing Parties (these are typically potentially responsible parties)
- Primary community groups
  - Community Advisory Group
  - Willamette Riverkeeper
  - Portland Harbor Community Advisory Group

### ***1.2.3 Remedial Design Sampling Activities***

For the remedial design efforts, a performing party would implement an investigation to supplement existing site-wide data to inform and support remedial design.

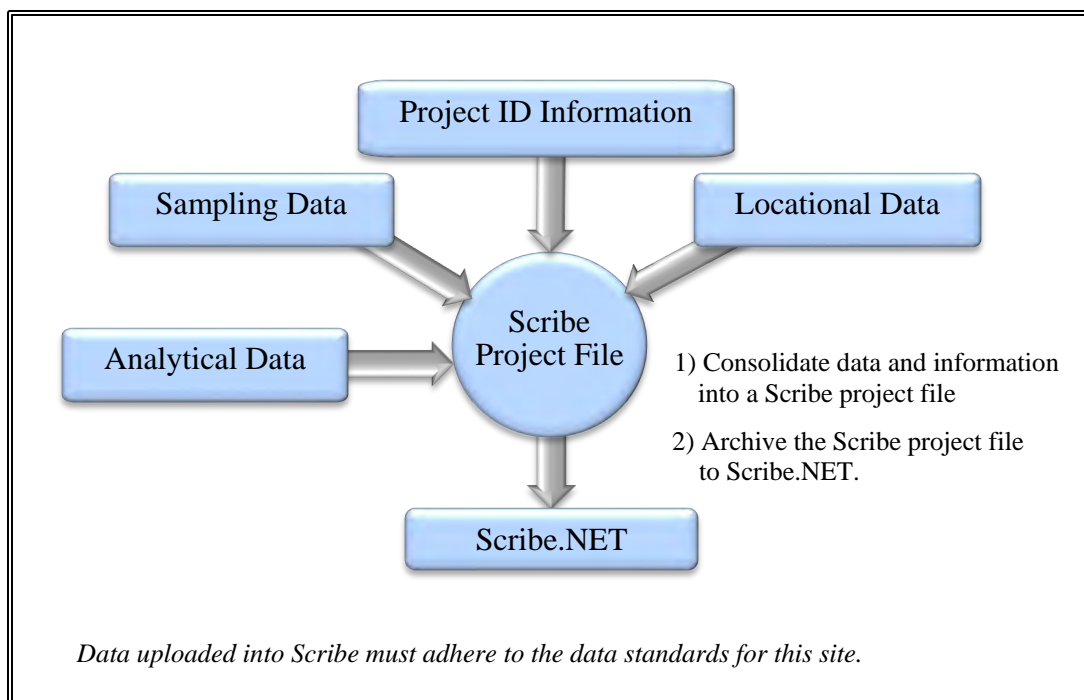
The following types of sample collection activities may be completed as specified in each respective EPA-approved sampling plan submitted by performing parties:

- Surface sediment sampling
- Fish tissue sampling
- Surface water sampling
- Sediment coring
- Soil sampling
- Porewater sampling

## **2.0 Data Management**

Effective data management among the Portland Harbor performing parties relies upon delivery of data to a central repository using a common data management platform. The platform selected for the PHSS is Scribe, and the repository is the Region 10 subscription to Scribe.NET. Although individual performing parties may have diverse data management systems, the Scribe software and Scribe.NET repository is required for consolidation and access to project information, sampling data, and applicable locational data for each sampling activity. For many projects Scribe will already be in use for managing environmental samples. In those cases, the same Scribe project files can be used to document the project information, receive the sampling data, and publish the complete set of information to Scribe.NET. A simplified data flow for the Scribe data management process is illustrated on Figure 1. The Scribe Project ID is required for each data set and is provided by the EPA Scribe.NET Data Coordinator. Sampling Data comprises sample nomenclature identification, temporal data, and details specific to the sampling event. Locational Data comprise the spatial information for each sample.

Independent of the Scribe and Scribe.NET repository, a site-wide repository is being developed by the State of Oregon to capture and provide access to comprehensive Portland Harbor data. Appendix C provides a conceptual model depicting the comprehensive approach to the management of data derived from previous and future studies as a part of the PHSS.

**Figure 1. Data Flow and Archiving for Scribe**

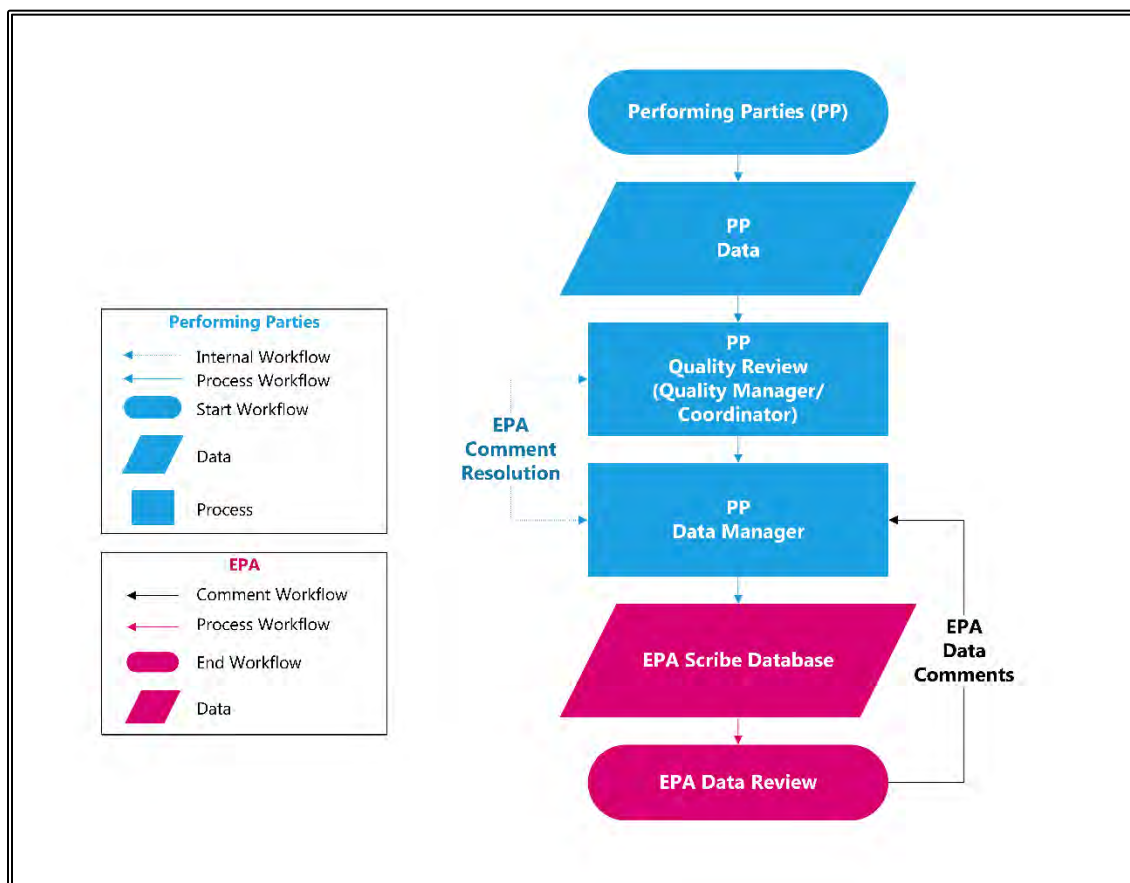
## 2.1 Data Management Platform

The data management platform selected for the PHSS is Scribe. This software is based on a Microsoft database and is available for download ([www.ert.org](http://www.ert.org)). In addition to the Scribe software, an EPA Region 10 template, which contains the required data fields, data lists, and validation criteria, needs to be downloaded and installed. For each project, a Scribe project file is created. Here, the project-specific information is entered, which identifies both the performing party or group conducting the sampling and the type of sampling activity performed.

## 2.2 Roles and Responsibilities

The major roles and responsibilities for data management are identified for the performing parties in addition to the role of the data manager within each organization. The performing parties will be responsible for their own in-house data management but will designate a “data manager” who will fill the role as defined within this DMP. Figure 2 provides an overview of the workflow between EPA Region 10 and the performing parties.



**Figure 2. Process Workflow**

### 2.2.1 Performing Parties

EPA Region 10 has the primary responsibility for oversight of all sampling and monitoring activities. EPA has identified the minimal data elements and data delivery requirements that would allow it to achieve its oversight goals and share data among the other stakeholders, performing parties, and community groups. Each of the performing parties is responsible for collecting the necessary data elements covered under their respective sampling activity as approved by EPA, and providing that information to EPA by submitting electronic data deliverables (EDD's) or entering or uploading the information into a Scribe project file, and publishing (archiving) the complete file to Scribe.NET. Coordination with EPA and the Oregon Department of Environmental Quality (ODEQ) is required to ensure data requirements for a sampling event are met. To accomplish this task on a project-specific basis, the performing party will need:

- DMPs to cover their respective sampling activities
- A data manager designated to complete the Scribe project file or EDD's

Details regarding the roles and responsibilities of the data manager are provided in the following section.

### 2.2.2 Data Manager

Each of the performing parties will need to designate a data manager to create the EDD submittals or create and manage the Scribe project file and upload the file to Scribe.NET. Regardless of the

data management system each performing party utilizes, a Scribe EDD or Scribe project file is required for consolidation and archiving of the project data to a designated national server. The major responsibilities of the data manager are:

- Creation of EDD submittals or the Creation of the Scribe project file
- Coordination with EPA and/or ODEQ regarding all data matters.
- Participation in the Portland Harbor data management coordination calls for ongoing discussion and updates or suggested revisions to this DMP

Designation and training for the data manager can be coordinated with the EPA's Regional Scribe.NET Data Coordinator if direct use of Scribe project files is planned. Web training sessions are also available from the EPA Emergency Response Team (ERT) on a regular basis. To begin, the data manager will need to go to the ERT website ([www.ert.org](http://www.ert.org)) and download on to their computer:

- Scribe (Version 3.9.4 or current)
- EPA Region 10 Scribe template

Once these have been installed, the EPA Region 10 template will need to be selected during the startup of Scribe after which it will become the default template for future projects. As a security measure, once a Scribe project file has been started, it stays locked to the originating computer until it has been relinquished by the data manager. Data and information can be uploaded into Scribe via an import wizard or hand entered through the user interface. During use, it is a recommended practice to regularly back up the Scribe project file to Scribe.NET to preserve the information in the event the originating computer is lost, stolen, or experiences a system failure.

It is anticipated that there will be no coordination with respect to the EPA regional laboratory program for any of the sampling events conducted by any performing party. Section 2.2.4 describes how contact may be made to discuss specific requirements regarding Scribe EDD submittals and/or Region 10 Scribe template.

### ***2.2.3 EPA Remedial Project Managers***

EPA's oversight of the performing parties at the Portland Harbor site resides with EPA's Superfund Remedial Project Managers (RPM). The RPM will work directly with the performing parties on the direction and type of environmental sampling activities conducted. This includes data quality objective development; approval of sampling plans; and acceptance of sampling reports, assessments, and data for entry into the agency's administrative record. Central to this role is the identification of critical data needs on each approved sampling activity at each sediment management area. In addition, the RPM will participate in the Portland Harbor data management calls and coordinate with the performing party's data manager for refinements to the DMP if needed.

### ***2.2.4 EPA Regional Scribe.NET Data Coordinator***

The EPA Scribe.NET Data Coordinator (to be determined) is the project's EPA Scribe data management point of contact and reviews all EPA Region 10 Scribe deliverables for adherence to the EPA Region 10 DMP.

As part of the Portland Harbor data management coordination calls, the EPA Scribe.NET Data Coordinator will communicate with all performing parties regarding all data issues related to the management of data, Scribe EDD submittals and/or Scribe templates. The coordinator will also be the central point of contact for all technical information and database requirements related to the publishing of data to Scribe.NET.

## **2.3 Data Elements**

As stated in Section 1.2.1, the plan identifies standard data elements for project identification information, environmental sampling data, and locational data. A complete list of data elements is provided in Appendix A and the valid values in Appendix B. Valid values are also provided as drop-down entry items in the Region 10 Scribe template/Portland Harbor template (when available). The following sections summarize the information in these appendices as they relate to the major data categories.

### ***2.3.1 Project Identification Information***

Project identifiers provide the necessary descriptive information (metadata) about the project. This allows data users an efficient way of categorizing and searching archived Scribe project files. A complete list of these data elements is found in Appendix A under the Site and Event Categories. Critical among these is identification of the project, monitoring organization, and type of monitoring activity (see Appendix A; Events – Activity data element). The Activity data type is a Superfund identifier that distinguishes environmental data by its intended programmatic use (i.e., Performance Evaluation, Remedial Action). The EPA Region 10 template contains a list of valid values for the Activity data element. It is important for the data manager to verify with the EPA RPM on the agreed upon Activity type during the project planning.

### ***2.3.2 Environmental Sampling Data***

The data elements for environmental sampling data allow for a complete identification of the analytical results such that the data may be subject to interpretation. This includes the identification of the sample matrix, sample collection time, measurement parameter, units of measurement, limits of detection, dates of analysis, analytical method, and so on. A complete list of these data elements and their descriptors are in Appendix A under the Samples and Lab Results categories. For data being uploaded into the Lab Results table of Scribe, the sample numbers must match up against the sample numbers that are already loaded into the Samples table.

### ***2.3.3 Locational Data***

The locational data establish the spatial representativeness of the environmental sample and are critical for data analysis. These include latitude, longitude, datum, elevation, and geomethod for sample collection points. Additional spatial identifiers for water monitoring (e.g., hydrologic unit codes [HUCs]) have been added for this site as these were identified as required geospatial identifiers by EPA. Valid values for the HUCs have been incorporated into the Region 10 template. A complete list of the locational data elements is in Appendix A under the Location and Samples categories.

## **2.4 Data Repository**

The repository for archiving and retrieving Scribe project files is Scribe.NET. This repository resides within a national server maintained by ERT and is accessed directly from Scribe. For each project file, a unique ID is assigned at the time the file is first published to Scribe.NET. Access to the archived Scribe project file can be granted to other stakeholders, performing parties, and groups upon submitting a request to ERT; however, the repository files can only be updated from the computer that originated the file (unless the Scribe project file is relinquished by the originator in Scribe). Independent of the Scribe.NET repository, a site-wide repository being developed by the State of Oregon, will capture and provide access to comprehensive Portland Harbor site data.

## **3.0 Data Verification**

If the Scribe project is initiated by a performing party for Portland Harbor, Scribe is configured to undergo a self-inspection of information as part of the data generation or file upload process. The Region 10 template contains auditor rules for verification of Scribe project files as they are uploaded to Scribe.NET. Close observance of these rules is the responsibility of the data manager.

## **4.0 Data Reporting Procedures**

Final project information, sampling, and locational data are delivered to EPA in the form of an EDD or Scribe project file that has been fully populated and published to Scribe.NET. Upon completion of Scribe project file and upload to Scribe.NET, the performing party data manager notifies the EPA RPM and the EPA Scribe.NET Data Coordinator and provides the Scribe project ID number (assigned at the time of publishing to Scribe.NET) associated with the project for identification and access by EPA Region 10. The concept for integrating the analytical and locational data of Scribe.NET with the comprehensive data management repository is provided in Appendix C.

## **5.0 Data Access**

Major stakeholder groups have been identified as those groups who are actively involved in site-wide planning and environmental data collection and sharing for the PHSS. The major stakeholders include signatories to the 2001 Memorandum of Understanding, performing parties, and community groups. These stakeholders are provided access to the Portland Harbor subscription of Scribe.NET. Data access is performed through Scribe. For all the Portland Harbor Scribe project files, each stakeholder, performing party, or primary community groups has data access rights and can download the Scribe project file from Scribe. Only the originating performing party data manager can update files that have been published to Scribe.NET. Appendix C provides a conceptual model depicting the comprehensive approach to the site-wide management and sharing of data derived from previous and future studies at the PHSS.

## **6.0 References**

U.S. EPA. *Memorandum: Superfund Site Data Definitions and Recommended Practices*.  
29 Nov. 2017.

## **Appendix A – Required Data Elements**

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
CASE_NUMBER	C	Unique ID that identifies groups of sample batches under a specific project. Required for the Contract Lab Program. Valid values are determined by the CLP Contract.	Possible values are determined by the CLP Contract.	Text	5	Scribe / Lab	COC.CaseNumber	N	In Scribe this is found in the "COC.CaseNumber" and "Site.CaseNumber" fields. In the xml file it is the Site.CaseNumber element. There's no place for this in the Scribe LabResults Table.
SAMPLE_DELIVERY_GROUP	C	A set of samples scheduled under a Case Number (max = 20). Required for the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text	30	Lab	LabResults.Lab_Batch_No	Y	Generated by the Lab.
SAMPLE_ID	C	EPA Sample Number. Required if data are reported by the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text	25	Lab	SamplesTags.CLP_Samp_No LabResults.CLP_Samp_No	Y	Originates in Scribe from the "SamplesTags.CLP_Sample_No" field and is also uploaded into the "LabResults.Sample_CLP_No" field. Generated by Lab in EDD.
CAS_NUMBER	R	Chemical Abstracts Service (CAS) Registry Number for the chemical compound or element reported.	Possible values are determined by the CAS Registry.	Text	50	Lab	LabResults.Cas_No	Y	Generated by the Lab.
ANALYTE	R	Name of the chemical compound or element that was measured.	Name comprised of any combination of alpha-numeric values which may also contain hyphens and commas.	Text	60	Lab	LabResults.Analyte	Y	Generated by the Lab.
FINAL_RESULT	R	The final validated result of the chemical compound or element that was measured.	Numeric value which may be integer or decimal.	Text	8	Lab / Data Reviewer	LabResults.Result	Y	Generated by the Lab & verified by Data Reviewer. May be edited in EDM whereas the "Lab_Result" field below cannot be edited during data validation. The Final_Result field is mandatory for MEL and other (sub-contracted, government, etc.) labs.
RESULT_UNITS	R	The units of measurement for the "Final Result" and "Lab Result".	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab	LabResults.Result_Units	Y	Generated by the Lab.
FINAL_VALIDATION_QUALIFIER	R	National Functional Guidelines Data Validation or MEL Data Qualifiers. These should be identified in the QAPP.	Possible values assigned by the National Functional Guidelines or QAPP.	Text	10	EDM / Data Reviewer	LabResults.Result_Qualifier	Y	Generated by the EDM or Data Reviewer.
DATA_VAL_LABEL	R	EPA Data Validation Label Code from the “Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use”. Identifies the rigor of the data validation or review.	Possible values assigned by the guidance document.	Text	250	EDM / Data Reviewer	LabResults.QA_Comment	Y	Generated by the EDM or Data Reviewer. The Scribe LabResults Table will utilize the QA Comment field in order to accommodate this critical data element.
SAMPLE_ADJUSTED_CRQL	R	The Contract Required Quantitation Limit (CRQL) or lab's Reporting Limit that has been adjusted for sample weight, sample volume, dilution, percent solids, etc.	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.Quantitation_Limit	Y	Generated by the Lab.
SAMPLE_ADJUSTED_MDL	R	The Method Detection Limit (MDL) that has been adjusted for sample weight, sample volume, dilution, percent solids, etc.	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.MDL	Y	Generated by the Lab.
LAB_RESULT	C	The pre-validated analytical result as reported by the testing lab (CLP only).	Numeric value which may be integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The "Final_Result" data element which passes validation/lab verification will be uploaded into the Scribe lab results table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
LAB_QUALIFIERS	C	Lab Applied Data Qualifier(s). Qualifer codes which describe certain aspects of data utility or quality (e.g., non-detect, estimated value, etc.).	Possible value defined by either the CLP Statement of Work or the lab.	Text	10	Lab	LabResults.Lab_Result_Qualifier	Y	Generated by the Lab.
METHOD_CRQL	R	Un-adjusted CRQL or Reporting Limit	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.Reporting_Limit	Y	Generated by the Lab.
NONMOISTURE_SAMPLE_ADJUSTED_CRQL	NA	Contract Required Quantitation Limit (CRQL) or Reporting Limit that is adjusted for sample weight, volume, dilution, <b>BUT NOT</b> percent solids. Created by the data review program used to validate CLP data.	Numeric value which may be integer or decimal.	Text	8	EDM		N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CRQL_UNITS	R	Sample Adjusted Contract Required Quantitation Limit (CRQL) or Reporting Limit Units of Measurement.	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab	LabResults.Quantitation_Limit_Units LabResults.Reporting_Limit_Units	Y	Generated by the Lab. The Quantitation and Reporting Limit data elements as we're applying them use the same units of measurement so this data element needs to be uploaded into two different fields.
INSTRUMENT_MDL	O	Instrument Detection Limit (MDL) that is not adjusted for sample mass/volume or percent moisture (solids).	Numeric value which may be integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. R10 Does not use this field.
NONMOISTURE_SAMPLE_ADJUSTED_MDL	NA	Method Detection Limit (MDL) that is adjusted for sample weight, volume, dilution, <b>BUT NOT</b> percent solids. Created by the data review program used to validate CLP data.	Numeric value which may be integer or decimal.	Text	8	EDM		N	There's no data field for this in the Scribe LabResults Table. R10 Does not use this field.
MDL_UNITS	R	MDL Measurement Units	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab	LabResults.MDL_Units	Y	Generated by the Lab.
PERCENT_SOLIDS	R	The Percent Solids for soils and sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Text	8	Lab	LabResults.Percent_Solids	Y	Generated by the Lab.
PERCENT_MOISTURE	R	The Percent Moisture content for soils or sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Text	8	Lab	LabResults.Percent_Moisture	Y	Generated by the Lab.
DILUTION_FACTOR	R	Dilution Factor applied to the digest or extract. The dilution factor is only applied when the laboratory has diluted the extract or digest due to a high concentration of analyte(s).	Integer values e.g., 1, 2, 3, etc.	Text	8	Lab	LabResults.Dilution_Factor	Y	Generated by the Lab.
ANALYSIS_FRACTION	R	Identifies the type of analysis fraction or method category of the analysis.	Possible values determined by the CLP Contract or reporting Lab.	Text	100	Lab	LabResults.Analysis	Y	Generated by the Lab.



Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
ANALYSIS_LEVEL	C	The concentration range or level performed by the lab for the analytical methods.	Possible values are determined by the CLP Contract. Examples: trace, low, med	Text	15	Lab		N	There's no data field for this in the Scribe LabResults Table.
REPORTING_BASIS	R	Indicates whether the results were adjusted due to the moisture content of the sample.	Sediment samples = DRY or WET depending upon whether moisture correction was applied.	Text	10	Lab	LabResults.Basis	Y	Generated by the Lab.
SAMPLE_DATE_TIME	R	The Date & Time of Sample Collection	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY HH:MM:SS	Date/Time	20	Scribe	Samples.Sampleddate LabResults.Date_Collected	Y	Originates in Scribe but is not overwritten in COC XML resubmittals. This is due to the ability to edit this information in EDM during data validation. To allow overwrite via COC XML resubmittal would violate a business rule against duel overwrite input pathways and introduce an vulnerability to the system. Sample Date & Time are concatenated from two Scribe COC XML fields.
DATE_SHIPPED	R	Date of Sample Shipment.	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY. For Matrix Spike, Post-Digestion Spike, Duplicates, Matrix Spike Duplicate = Ship Date of associated Parent Sample	Date	20	Scribe	COC.DateShipped	N	There's no data field for this in the Scribe LabResults Table and it already appears in the COC Table.
DATE_TIME_RECEIVED	R	Date & Time of Sample Receipt at Lab.	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY HH:MM:SS  For Matrix Spike, Post-Digestion Spike, Duplicate, Matrix Spike Duplicate = Sample Receipt Date and Time of associated Parent Sample	Date/Time	20	Lab	LabResults.Date_Received	Y	Generated by the Lab. Need to double check the date/time fields in the LabResults Table. The Scribe Table Defn. file shows the length of these fields to be "8" but we need them to be "20".
PREP_DATE_TIME	R	Date & Time of Sample Digestion/Extraction.	For all laboratory samples = MM/DD/YYYY HH:MM:SS  For Matrix Spike, Post-Digestion Spike, Duplicate, Matrix Spike Duplicate = Sample Receipt Date and Time of associated Parent Sample	Date/Time	20	Lab	LabResults.Date_Extracted	Y	Generated by the Lab.
ANALYSIS_DATE_TIME	R	The Date & Time of Analysis of the sample digest or extract.	For all laboratory samples = MM/DD/YYYY HH:MM:SS	Date/Time	20	Lab	LabResults.Date_Analyzed	Y	Generated by the Lab.
LAB_SAMPLE_TYPE	R	Identifies types of samples as either "field" or specific lab QCbut does not identify field QC types. Required by the Contract Lab Program.	Possible values are determined by the CLP Contract or Reporting Lab. Examples: Field_Sample, Method_Blank, Matrix_Spike, Serial_Dilution, etc.	Text	40	Lab	LabResults.QC_Type	Y	Generated by the Lab. This data type uses Lab QC long names (e.g., "Laboratory_Control_Sample) and perfectly matches the data definition of the QC_Type data field. The previously identified Sample_Type_Code was only 10 characters long.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SAMPLE_MATRIX	R	Identifies the matrix type of soil, water, etc. as reported by the lab. Required by the Contract Lab Program.	Possible values are determined by the CLP Contract or reporting Lab. Examples: Water, Soil, Sediment, Wipe, Filter	Text	20	Lab	LabResults.Matrix_ID	Y	Generated by the Lab. CLP has it's definitions but does it also need to match up with the Samples.Matrix Scribe data field? I thought these were populated separately.
RESULT_COMMENT	C	Concatenated result information (can be from FORM I Comment Field)	Comments are recorded in the Lab and reported.	Text	250	Lab	LabResults.Comments	Y	Generated by the Lab. For the CLP this was concatenated from the Form I comment field to provide information such as size fraction.
LAB_NAME	R	Laboratory Name (long name)	Possible values are determined by the CLP Contract or reporting Lab.	Text	50	Lab	LabResults.Lab_Name	Y	Generated by the Lab.
LAB_CODE	C	An abbreviated form of the Lab Name.	Possible values are determined by the CLP Contract. The abbreviated lab name is a code used for reporting.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
CONTRACT_NUMBER	C	Laboratory Contract Number assigned under the CLP.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
METHOD_NUMBER_OR_CLP_SOW	R	CLP SOW Value or "Method Source:Method Number", e.g., SW:9060A	Valid EPA or other reference methods or CLP SOW editions. Examples: ISM01.3, 6010, 8270, etc.	Text	100	Lab	LabResults.Analytical_Method	Y	Generated by the Lab.
MA_NUMBER	C	The Modified Analysis (MA) Number is a tracking number used by the CLP for non-standard or altered methods.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
TR_COC_NUMBER	R	The Traffic Report (TR) /Chain of Custody Form Number is a unique tracking number assigned to the COC.	Long segmented number separated by hyphens.	Text	30	Scribe	SamplesTags.COC LabResults.Lab_Coc_No	Y	Generated by the Lab.
LAB_SAMPLE_ID	C	Laboratory Sample ID (internal ID#). Labs issue their own sample IDs for internal sample tracking and reporting purposes.	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab	LabResults.Lab_Samp_No	N	Generated by the Lab.
LAB_FILE_ID	C	Laboratory File ID (Internal to the lab only)	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab		N	There's no data field for this in the Scribe LabResults Table.
INSTRUMENT_ID	C	Unique Instrument Identification Number	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab		N	There's no data field for this in the Scribe LabResults Table.
SAMPLE_ALIQUOT	R	The mass or volume of sample that removed for extraction or digestion.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.SubSample_Amount	Y	Generated by the Lab.
SAMPLE_ALIQUOT_UNITS	R	The units of measurement for the mass or volume of sample that removed for extraction or digestion.	Examples: "g" for grams, "mL" for milliliters.	Text	20	Lab	LabResults.SubSample_Amount_Unit	Y	Generated by the Lab.
FINAL_VOLUME	R	The final volume of the sample Digest or Extract.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.Final_Volume	Y	Generated by the Lab.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
FINAL_VOLUME_UNITS	R	Volume of Sample Digest /Extract Units	For Organic: uL For Inorganic: mL	Text	20	Lab	LabResults.Final_Volume_Unit	Y	Generated by the Lab.
SOIL_EXTRACT_VOLUME	C	The volume of extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_EXTRACT_VOLUME_UNITS	C	Soil Extract Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_ALIQUOT_VOLUME	C	The volume of aliquot removed from the extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_ALIQUOT_VOLUME_UNITS	C	Soil Aliquot Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
PURGE_VOLUME	C	For analysis of Volatile Organic Compounds, the volume of an aqueous sample that is used to "purge" the VOCs.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.Final_Volume	Y	Generated by the Lab.
PURGE_VOLUME_UNITS	C	Purge Volume Units (VOA)	For Organic (VOA only): mL	Text	20	Lab	LabResults.Final_Volume_Unit	Y	Generated by the Lab.
SPIKE_ADDED	C	Amount Added for Lab Matrix Spike or Spike Duplicate sample or Laboratory Control Sample	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
CONCENTRATED_EXTRACT_VOLUME	C	Concentrated Extract Volume (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
CONCENTRATED_EXTRACT_VOLUME_UNITS	C	Concentrated Extract Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
INJECTION_VOLUME	C	The volume of extrac injected into the instrument. (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
INJECTION_VOLUME_UNITS	C	Injection Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
PREPARATION_METHOD	R	Type of Extraction for Organics or Digestion for Inorganics. "SONC" for sonication etc. (SVOA/PEST/PCB) of Organics and most relevant method digestion numbers for Inorganic.	Possible values are determined by the CLP Contract or reporting Lab. For Organic: Sonication, Soxhlet, Pressurized_Fluid , Liq_Liq, Liq_Membrane For Inorganic: 200.7, 200.8, 3050B, 3015A, 3051A, 7300, 7470A, 7471B, Midi-distillation, Micro-distillation	Text	100	Lab	LabResults.Extraction_Method	Y	Generated by the Lab.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
GPC_CLEANUP	C	Cleanup Type (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): Y or N	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
GPC_FACTOR	C	1.0 if no GPC, 2.0 if GPC is performed (SVOA/PEST/PCB)	"1.0 if no GPC, 2.0 if GPC is performed" derived from presence or absence of GPC value in CLEANUP_TYPE field	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
DECANTED	C	Identifies if the Lab decanted the sample in a Yes or No response. (SVOA/PEST/PCB)	Contract or reporting Lab. For Organic (SVOA, Pesticides, PCBs): Decanted or Not_Decanted	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
PH	C	The pH Determination of a soil or water sample. Reported in pH Units (SVOA/PEST/PCB, and Inorganic water samples)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
COLOR_BEFORE	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
COLOR_AFTER	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
CLARITY_BEFORE	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
CLARITY_AFTER	O	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
TEXTURE	O	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
ARTIFACTS	O	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
COOLER_TEMP	R	Recorded temperature of the sample cooler upon Receipt at the Lab.	Recorded in Degrees Celcius.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
SAMPLE_FRACTION	C	Identifies the representativeness of a water sample due to any pretreatment (e.g., filtration at 0.45 micron).	"D" for dissolved (filtered at 0.45 micron), "F" for other filtered, "T" for total (unfiltered). If "F" is used then the filter size/type should be entered in the Result_Comment field.	Text	1	Scribe	LabResults.Total_Or_Dissolved	Y	Generated by the Lab.
METHOD_SPECIATION	C	Part of a chemical characteristic (Nitrogen "As" ...)	Detemined by the analytical method.	Text	30	Lab		N	Generated by the Lab. There's no data field for this in the Scribe LabResults Table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SAMPLE_SUBMATRIX	R	Scribe Matrix, expanded to include surface water, surface sediment etc. Use a custom list in Scribe	Examples: Air, AirIndoor, Sediment, Sediment Subsurface, Sediment Surface, Soil, Soil Surface, Soil Subsurface, SoilGas, Tissue, Waste, Waste SolidWaste, Waste LiquidWaste, Water, Water SurfaceWater, Water GroundWater, Water Potable, Water SepticEffluent, Water Stormwater	Text	40	Scribe	Samples.Matrix	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_REASON	R	General program or technical reason for the study. Program reasons are specific and tie the data collection to more prescribed data uses.	Examples: Emergency Response, Site Investigation, Preliminary Assessment, Site Assessment, Remedial Investigation, Remedial Action	Text	30	Scribe	Site.Site_Action	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLE_COLLECTION_METHOD	R	Sample Collection Method (i.e., Grab, Composite, Discrete Interval)	Examples: Grab, Composite, Discrete Interval	Text	30	Scribe	Samples.SampleCollection	N	Already in Scribe. No place for it in the Scribe LabResults Table.
EPA_REGION	R	"EPA Region" plus the Regional designation number (EPA Region 10)	Valid Values: "EPA Region" + 1 - 10	Text	15	Scribe	Site.EPARegionNumber	N	Already in Scribe. No place for it in the Scribe LabResults Table.
STATION_LOCATION	R	Station Location Codes	Determined by the project.	Text	50	Scribe	Location.Location	N	Originates in Scribe but is not overwritten in COC XML resubmittals. This is due to the ability to edit this information in EDM during data validation. To allow overwrite via COC XML resubmittal would violate a business rule against duel overwrite input pathways and introduce an vulnerability to the system.
LOCATION_DESCRIPTION	R	Further describes the Station Location.	Determined by the project.	Text	100	Scribe	Location.LocationDescription	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SAMPLE_NUMBER	R	The Scribe / field sample number. This may be Scribe generated or a Regionally assigned number.	Possible value determined by the Scribe Project Manager or the Regional Sample Control Coordinator.	Text	50	Scribe	Samples.Samp_No LabResults.Samp_No	Y	Originates in Scribe in the "Samples.Samp_No" field but is also uploaded into the "LabResults.Sample_CLP_No" field.
LOCATION_ZONE	R	The type of area that is impacted by the sample location.	Examples: Lake, Land, River/Stream, Well	Text	25	Scribe	Location.LocationZone	N	Already in Scribe. No place for it in the Scribe LabResults Table.
LATITUDE	R	The geographic latitude where the sample was collected or field measurement was taken.	12 character decimal degrees. Decimal places should be carried out to a minimum of 6 places in order to ensure minimal accuracy.	Text	12	Scribe	Location.Latitude	N	Already in Scribe. No place for it in the Scribe LabResults Table.
LONGITUDE	R	The geographic longitude where the sample was collected or field measurement was taken.	12 character decimal degrees (preceded by a negative sign "-" for North America). Decimal places should be carried out to a minimum of 6 places in order to ensure minimal accuracy.	Text	12	Scribe	Location.Longitude	N	Already in Scribe. No place for it in the Scribe LabResults Table.
DATUM	R	The horizontal coordinate system reference Datum name.	WGS84	Text	50	Scribe	Location.Datum	N	Already in Scribe. No place for it in the Scribe LabResults Table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
GEOMETHOD	R	The method used to determine latitude and longitude.	GPS, Survey	Text	30	Scribe	Location.GeoMethod	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION	C	The determined elevation of a geographic point where the sample was collected or field measurement was taken. This is required for groundwater monitoring wells and where surface elevation data is needed for a project.	In feet or meters, need to provide for GW Wells that have been surveyed and not just GPS.	Text	8	Scribe	Location.Surf_Elev	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_UNITS	C	The units of measurement for the surface elevation data. This is required when surface elevation measurements are reported.	meters, feet	Text	20	Scribe	Location.Surf_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_METHOD	C	The method used to determine the surface elevation. This is required when surface elevation measurements are reported.	GPS, Survey	Text	30	Scribe	Location.ElevMethod	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_DATUM	C	The vertical control datum for the surface elevation measurement. This is required when surface elevation measurements are reported.	NAVD88	Text	50	Scribe	Location.ElevDatum	N	Already in Scribe. No place for it in the Scribe LabResults Table.
TOP_DEPTH	C	Top depth of Sample Collection (for cores) or depth of sample collection for a monitoring well.	Numeric value may be an integer or decimal.	Text	8	Scribe	Samples.Samp_Depth	N	Already in Scribe. No place for it in the Scribe LabResults Table.
BOTTOM_DEPTH	C	Depth To bottom of sample collection for a core sample.	Numeric value may be an integer or decimal.	Text	8	Scribe	Samples.Samp_Depth_To	N	Already in Scribe. No place for it in the Scribe LabResults Table.
TOP_DEPTH_UNITS	C	Units of Sample Depth	Feet or meters	Text	20	Scribe	Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
BOTTOM_DEPTH_UNITS	C	Units of the Bottom Depth	Feet or meters	Text	20	Scribe	Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLER_NAME	R	Sampler Name	Full name of the sampler.	Text	30	Scribe	Samples.Sampler	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_COMPANY_CONTACT	R		Full name of the sampling contact. Person usually coordinates sample collection on behalf of the sampling company.	Text	50	Scribe	Site.CTRContact	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_COMPANY_NAME	R	Sampling Company Name	Full name of the sampling company.	Text	50	Scribe	Site.Contractor	N	Already in Scribe. No place for it in the Scribe LabResults Table.
PROJECT_NAME	R	Site Name / Project Name	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM	Site.Site_Name	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.



Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SITE_PROJECT_CODE	R	Regional Project Code	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM	COC.ProjectCode	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling. Also hand entered onto COC during COC generation and uploaded to lab in COC XML.
SITE_EVENT_ID	R	EventID. Use to group data by sampling/monitoring events (i.e. EOC, Site Assessment) (Primary Key)	A unique ID used by Scribe.	Text	50	Scribe	Site.Control_No	N	Already in Scribe. No place for it in the Scribe LabResults Table.
STATE	R	State where sample collection occurred. This field is populated in CLPSS during ASR entry	2 Character State Abbreviation	Text	20	RSCC/EDM	Stite.Site_State	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.
CITY	R	City where sample collection occurred. This field is populated in CLPSS during ASR entry	Full City Name	Text	60	RSCC/EDM	Site.Area	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.
CERCLIS	R	CERLIS ID	The CERCLIS identification. Used only by the Superfund program.	Text	20	Scribe	Site.CERCLIS	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SITE_NUMBER	R	Scribesite key (Primary Key)	A unique ID used by Scribe.	Text	12	Scribe	Site.Site_No	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_NET_PROJECT_ID	R	ScribeNetID Project ID	A unique ID used by Scribe.	Text	4	Scribe	Site.ScribeNetProjectID	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SAMPLES_ID	NA	Scribe Database AutoGenerated Number	A unique ID used by Scribe.	Text	4	Scribe	Samples.SampleID	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLE_TAG	R	Container ID codes - autogenerated if left blank	A unique ID used by Scribe.	Text	15	Scribe	SamplesTags.Tag	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_COMMENT	C	Comment field from Scribe	Filled in by sampler to denote special sample treatment or conditions. Required if the entry is filled in by Scribe.	Text	255	Scribe	Samples.Remarks	N	Already in Scribe. No place for it in the Scribe LabResults Table.
FIELD_SAMPLE_TYPE	R	Distinguishes field samples from lab QC, field QC and other associated sample types.	Possible values used in the Scribe template. Example: "Field Sample", etc.	Text	30	Scribe	Samples.SampleType	N	Already in Scribe. No place for it in the Scribe LabResults Table.
VERSION_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
DATA_PROVIDER	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARENT_SAMPLE_NAME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARENT_SAMPLE_LOCATION	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LAB_REPLICATE_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_SOURCE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
ORGANIC_YN	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PRESERVATIVE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TEST_BATCH_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PREP_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYSIS_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_ANALYSIS_LOCATION	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COLUMN_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RUN_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYSIS_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYST_NAME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYTE_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
REPORTABLE_RESULT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
DETECT_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TIC_RETENTION_TIME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TIC_RETENTION_TIME_UNITS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
EXPECTED_VALUE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_ORIGINAL_CONC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_MEASURED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_RECOVERY	R	Percent Recovery of lab QC types (matrix spikes, surrogates, etc).	Numbers are represented as "%".	Text	8	Lab	LabResults.Percent_Recovery	Y	Generated by the Lab.
QC_DUP_ORIGINAL_CONC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_ADDED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_MEASURED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.



Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
QC_DUP_SPIKE_RECOVERY	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_LCL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_UCL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD_CL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD_STATUS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_RUN	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARAMID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PAR_VAL_UNCERT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RESULT_ERROR_DELTA	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
INTERPRETED_QUALIFIERS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SYS_LOC_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TASK_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COLLECTION_QUARTER	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_CLASS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COMPOSITE_DESC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACH_LOT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACHATE_METHOD	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACHATE_DATE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
LEACHATE_TIME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RESP	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_1	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_2	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_3	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COMMENT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

## **Appendix B – Data Element Valid Values**

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Events	Activity	Remedial Design
Events	Activity	Remedial Design Oversight
Events	QAPP_Approved	Y
Events	QAPP_Approved	N
Events	QAPP_ApprovedBy	US EPA Region 10
Events	QAPP_ApprovedBy	ODEQ
Location	CountryCode	US
Location	CountyCode	051
Location	Datum	NAD83
Location	Datum	UNKWN
Location	Datum	WGS84
Location	ElevDatum	NAVD88
Location	ElevDatum	NGVD29
Location	ElevDatum	OTHER
Location	ElevDatum	UNKWN
Location	ElevMethod	Altimetry
Location	ElevMethod	GPS
Location	ElevMethod	Interpolation
Location	ElevMethod	Other
Location	ElevMethod	Survey
Location	GeoMethod	GPS-Unspecified
Location	GeoMethod	Unknown
Location	GeoMethod	GPS
Location	GeoMethod	Interpolation
Location	GeoMethod	Survey
Location	HorizAccuracyMeasureUnit	Ft
Location	HorizAccuracyMeasureUnit	Meter
Location	HucEightDigitCode	17090012
Location	HucTwelveDigitCode	170900120201
Location	HucTwelveDigitCode	170900120202
Location	HucTwelveDigitCode	170900120301
Location	HucTwelveDigitCode	170900120305
Location	HucTwelveDigitCode	170900120304
Location	HucTwelveDigitCode	170900120302
Location	HucTwelveDigitCode	170900120303
Location	HucTwelveDigitCode	170900120102
Location	HucTwelveDigitCode	170900120104
Location	HucTwelveDigitCode	170900120101
Location	HucTwelveDigitCode	170900120103
Location	<Structuring of location (Site, subsite[by river mile], and SMA) will be determined with the EPA RPM> Developed as a part of the Portland Harbor Scribe Template.	
Location	LocationZone	Borehole
Location	LocationZone	Canal Transport

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Location	LocationZone	Combined Sewer
Location	LocationZone	Estuary
Location	LocationZone	Facility Industrial
Location	LocationZone	Facility Other
Location	LocationZone	Lake
Location	LocationZone	Land
Location	LocationZone	Land Flood Plain
Location	LocationZone	Landfill
Location	LocationZone	Ocean
Location	LocationZone	Other-Ground Water
Location	LocationZone	Other-Seawater
Location	LocationZone	Other-Surface Water
Location	LocationZone	Other-Surface Water
Location	LocationZone	Pond-Stormwater
Location	LocationZone	Reservoir
Location	LocationZone	River/Stream
Location	LocationZone	River/Stream
Location	LocationZone	Seep
Location	LocationZone	Spring
Location	LocationZone	Storm Sewer
Location	LocationZone	Test Pit
Location	LocationZone	Waste Pit
Location	LocationZone	Waste Sewer
Location	LocationZone	Well
Location	LocationZone	Wetland Undifferentiated
Location	State Code	OR
Location	Sub_Basin	Lower Willamette
Samples	Activity	Pre-Design
Samples	Activity	Design
Samples	Matrix	Air
Samples	Matrix	Air Indoor
Samples	Matrix	Asbestos
Samples	Matrix	Biological
Samples	Matrix	Benthic
Samples	Matrix	Drinking Water
Samples	Matrix	Dust
Samples	Matrix	Filtered Water
Samples	Matrix	Ground Water Dissolved
Samples	Matrix	Ground Water Total
Samples	Matrix	Habitat
Samples	Matrix	Lab Sand
Samples	Matrix	Liquid Waste
Samples	Matrix	Porewater Dissolved
Samples	Matrix	Porewater Total
Samples	Matrix	Potable Water
Samples	Matrix	Saline Water Dissolved
Samples	Matrix	Saline Water Total

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	Matrix	Sand
Samples	Matrix	Sediment
Samples	Matrix	Sediment <2mm
Samples	Matrix	Sediment <63um
Samples	Matrix	Sediment 125-250um
Samples	Matrix	Sediment 63-125um
Samples	Matrix	Sediment 63-250um
Samples	Matrix	Sediment Bulk
Samples	Matrix	Sediment Subsurface
Samples	Matrix	Sediment Surface
Samples	Matrix	Septic Effluent
Samples	Matrix	Soil
Samples	Matrix	Soil Gas
Samples	Matrix	Soil Subsurface
Samples	Matrix	Soil Surface
Samples	Matrix	Solid Waste
Samples	Matrix	Stormwater
Samples	Matrix	Surface Water
Samples	Matrix	Surface Water Dissolved
Samples	Matrix	Surface Water Total
Samples	Matrix	Tissue
Samples	Matrix	Waste
Samples	Matrix	Subsurface Soil/Sediment
Samples	Matrix	Surface Soil/Sediment
Samples	Samp_Depth_Units	Ft
Samples	SampleCollection	Activity Trap
Samples	SampleCollection	A-Frame Net
Samples	SampleCollection	Anchor Box Dredge
Samples	SampleCollection	Artificial Substrate
Samples	SampleCollection	Backpack Electroshock
Samples	SampleCollection	Beach Seine Net
Samples	SampleCollection	Beam Trawl
Samples	SampleCollection	Benthic Corer (Other)
Samples	SampleCollection	Benthic Dredge (Other)
Samples	SampleCollection	Benthic Grab (Other)
Samples	SampleCollection	Birge Closing Net
Samples	SampleCollection	Black Light Trap
Samples	SampleCollection	Block Net
Samples	SampleCollection	Boat-Mounted Electroshock
Samples	SampleCollection	Bod Dredge
Samples	SampleCollection	Bongo Net
Samples	SampleCollection	Boomerang Corer
Samples	SampleCollection	Boomerang Grab
Samples	SampleCollection	Box Corer
Samples	SampleCollection	Box Sampler
Samples	SampleCollection	Brail
Samples	SampleCollection	Bucket

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Burrell Epibenthic Sled
Samples	SampleCollection	Campbell Grab
Samples	SampleCollection	Cast Net
Samples	SampleCollection	Center Bag
Samples	SampleCollection	Chain Dredge
Samples	SampleCollection	Clam-Shell Grab
Samples	SampleCollection	Clarke-Bumpus Net
Samples	SampleCollection	Concussion
Samples	SampleCollection	Creel Survey
Samples	SampleCollection	Danish Seine Net
Samples	SampleCollection	Dart Corer (Gravity)
Samples	SampleCollection	D-Frame Net
Samples	SampleCollection	DH-81
Samples	SampleCollection	DH-95
Samples	SampleCollection	Dietz-Lafond Grab
Samples	SampleCollection	Dip Net
Samples	SampleCollection	Draw Down
Samples	SampleCollection	Drift Gill Net
Samples	SampleCollection	Drilled Sampler
Samples	SampleCollection	Drive Sampler (Generic)
Samples	SampleCollection	Drop Net
Samples	SampleCollection	Ekman Grab
Samples	SampleCollection	Electric Seine
Samples	SampleCollection	Electroshock (Other)
Samples	SampleCollection	Emergence Trap
Samples	SampleCollection	English Umbrella Net
Samples	SampleCollection	Erwin Piston Corer
Samples	SampleCollection	Ewing Gravity Corer
Samples	SampleCollection	Experimental Brail
Samples	SampleCollection	Experimental Gill Net
Samples	SampleCollection	Fish Weir
Samples	SampleCollection	Free Fall Grab
Samples	SampleCollection	Fry Trap
Samples	SampleCollection	Funnel Trap
Samples	SampleCollection	Fyke Net
Samples	SampleCollection	Glass Slide
Samples	SampleCollection	Glass Slide Device
Samples	SampleCollection	Gravity Corer (Generic)
Samples	SampleCollection	Hand Corer
Samples	SampleCollection	Herring Trawl
Samples	SampleCollection	Hess Sampler
Samples	SampleCollection	Hester-Dendy
Samples	SampleCollection	Hook And Line
Samples	SampleCollection	Hydraulic Grab
Samples	SampleCollection	Hydroacoustics
Samples	SampleCollection	Hydroplastic (PVC) Corer
Samples	SampleCollection	Insect Trap

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Isaacs-Kidd Trawl
Samples	SampleCollection	Juday Trap
Samples	SampleCollection	Kemmerer Bottle
Samples	SampleCollection	Kick Net
Samples	SampleCollection	Kullenberg Gravity Corer
Samples	SampleCollection	Larval Light Fish Trap
Samples	SampleCollection	Long Line
Samples	SampleCollection	Marmap Neuston Net
Samples	SampleCollection	Minnow Seine Net
Samples	SampleCollection	Miscellaneous (Other)
Samples	SampleCollection	Mochness Net
Samples	SampleCollection	Modified Surber Sampler
Samples	SampleCollection	MTD Net
Samples	SampleCollection	Nansen Bottle
Samples	SampleCollection	Natural Substrate
Samples	SampleCollection	Net Vertical Tow (Other)
Samples	SampleCollection	Net/Horizontal Tow (Other)
Samples	SampleCollection	Net/Non Tow (Other)
Samples	SampleCollection	Niskin Bottle
Samples	SampleCollection	Norpac Net
Samples	SampleCollection	Orange-Peel Grab
Samples	SampleCollection	Original Surber Sampler
Samples	SampleCollection	Other Toxicant
Samples	SampleCollection	Otter Trawl
Samples	SampleCollection	Pair Trawl
Samples	SampleCollection	Pamatmat Multiple Quartz Corer
Samples	SampleCollection	Peterson Grab
Samples	SampleCollection	Petite Ponar Grab
Samples	SampleCollection	Phleger Corer (Gravity)
Samples	SampleCollection	Pipe Dredge
Samples	SampleCollection	Piston Corer (Generic)
Samples	SampleCollection	Plankton Net
Samples	SampleCollection	Plexiglass Slide Device
Samples	SampleCollection	Plexiglass Trap
Samples	SampleCollection	Plummet Net
Samples	SampleCollection	Polar Orga. Chem. Integrative Sampler
Samples	SampleCollection	Ponar Grab
Samples	SampleCollection	Pound Net
Samples	SampleCollection	Pram Electroshock
Samples	SampleCollection	Probe/Sensor
Samples	SampleCollection	Pull Sled
Samples	SampleCollection	Pump/Air Lift
Samples	SampleCollection	Pump/Bailer
Samples	SampleCollection	Pump/Centrifugal
Samples	SampleCollection	Pump/Jet
Samples	SampleCollection	Pump/Non-Submersible
Samples	SampleCollection	Pump/Peristaltic



### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Pump/Piston
Samples	SampleCollection	Pump/Rotary
Samples	SampleCollection	Pump/Submersible
Samples	SampleCollection	Pump/Turbine
Samples	SampleCollection	Purse Seine Net
Samples	SampleCollection	Push Net
Samples	SampleCollection	Push Point Sampler
Samples	SampleCollection	Radiello
Samples	SampleCollection	Rectangular Net
Samples	SampleCollection	Remotely Operated Vehicle
Samples	SampleCollection	Rock Basket
Samples	SampleCollection	Roller Frame Trawl
Samples	SampleCollection	Rotenone
Samples	SampleCollection	Roving Drop Net
Samples	SampleCollection	Scoop Fish Grab
Samples	SampleCollection	Sediment Trap
Samples	SampleCollection	Seine Net
Samples	SampleCollection	Semipermeable Membrane Device
Samples	SampleCollection	Set (Passive) Gill Net
Samples	SampleCollection	Shelby Tube
Samples	SampleCollection	Ship Sea Chest
Samples	SampleCollection	Shipek Grab
Samples	SampleCollection	SHOVEL
Samples	SampleCollection	Shrimp Trawl
Samples	SampleCollection	Simple Conical Net
Samples	SampleCollection	Single-Vessel Operated Tow Net
Samples	SampleCollection	Smith-McIntire Grab
Samples	SampleCollection	Sodium Cyanide
Samples	SampleCollection	Spear/Gun
Samples	SampleCollection	Spear/Hand
Samples	SampleCollection	Spear/Hawaiian Sling
Samples	SampleCollection	Split Spoon
Samples	SampleCollection	Square-Mouth Net
Samples	SampleCollection	Stainless Steel Spoon
Samples	SampleCollection	Stationary Drop Net
Samples	SampleCollection	Still Camera
Samples	SampleCollection	Stop Net
Samples	SampleCollection	Storm Water Sampler
Samples	SampleCollection	Stovepipe Sampler
Samples	SampleCollection	Stream-Side Electroshock
Samples	SampleCollection	Suction Dredge
Samples	SampleCollection	Summa
Samples	SampleCollection	Surber Sampler
Samples	SampleCollection	Syringe
Samples	SampleCollection	Terminal Bag
Samples	SampleCollection	Tile Plate
Samples	SampleCollection	Tow Net

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Towed Dredge
Samples	SampleCollection	Trammel Net
Samples	SampleCollection	Trap Net
Samples	SampleCollection	Trap Substrate (Other)
Samples	SampleCollection	Traveling Screen
Samples	SampleCollection	Trot Line
Samples	SampleCollection	T-Sampler
Samples	SampleCollection	Tucker Net
Samples	SampleCollection	Two-Vessel Operated Tow Net
Samples	SampleCollection	Van Dorn Bottle
Samples	SampleCollection	Van Veen Grab
Samples	SampleCollection	Variable Mesh Gill Net
Samples	SampleCollection	Vibrating Corer
Samples	SampleCollection	Video Camera
Samples	SampleCollection	Vinyl Tube
Samples	SampleCollection	Visual Sighting
Samples	SampleCollection	Water Bottle
Samples	SampleCollection	Water Sampler (Other)
Samples	SampleCollection	WBH-96
Samples	SampleCollection	Whirl-pak bag
Samples	SampleCollection	Wisconsin-Style Net
Samples	SampleCollection	Yankee Trawl
Samples	SampleCollection	Young Grab
Samples	Sampler	<Performing Parties> Will be added as they are defined and organized into groups
Samples	SampleType	Depth Integrated Sample
Samples	SampleType	Field Duplicate
Samples	SampleType	Field Msr/Obs
Samples	SampleType	Field Sample
Samples	SampleType	Incremental Sampling Horiz
Samples	SampleType	Incremental Sampling Vert
Samples	SampleType	QC Blank - Bottle/Preservative
Samples	SampleType	QC Blank - Field
Samples	SampleType	QC Blank - Filter
Samples	SampleType	QC Blank - Rinsate/Equipment
Samples	SampleType	QC Blank - Trip
Samples	SampleType	Sample-Composite Without Parents
LabResults	Analysis	<To be determined from performing party site specific sampling plan>
LabResults	Analyte	1,1-Dichloroethane
LabResults	Analyte	1,1-Dichloroethene
LabResults	Analyte	1,1-Dichloroethylene
LabResults	Analyte	1,1,1-Trichloroethane
LabResults	Analyte	1,1,1,-Trichloroethane
LabResults	Analyte	1,1,2-Trichloroethane
LabResults	Analyte	Trichloroethane
LabResults	Analyte	1,1,2,2-Tetrachloroethane

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Tetrachloroethane
LabResults	Analyte	1,2-Dibromoethane
LabResults	Analyte	Dibromoethane
LabResults	Analyte	1,2-Dichloroethane
LabResults	Analyte	Ethylene dichloride
LabResults	Analyte	1,2-Dichloropropane
LabResults	Analyte	Propylene dichloride
LabResults	Analyte	1,2,3-Trichloropropane
LabResults	Analyte	1,2,3,4,7,8-HxCDF
LabResults	Analyte	1,2,3,7,8-PeCDD
LabResults	Analyte	1,2,4-Trichlorobenzene
LabResults	Analyte	1,2-Dichlorobenzene
LabResults	Analyte	1,3-Dichlorobenzene
LabResults	Analyte	1,4-Dichlorobenzene
LabResults	Analyte	2-Butanone
LabResults	Analyte	Methyl Ethyl Ketone
LabResults	Analyte	2-Hexanone
LabResults	Analyte	2-Chloroethylvinyl Ether
LabResults	Analyte	2,4,5-TP (Silvex)
LabResults	Analyte	2,2'-oxybis(1- Chloropropane)
LabResults	Analyte	2,3,4,6-Tetrachlorophenol
LabResults	Analyte	2,3,4,7,8-PeCDF
LabResults	Analyte	2,3,7,8-TCDF
LabResults	Analyte	2,3,7,8-TCDD-Dioxin
LabResults	Analyte	2,3,7,8-TCDD
LabResults	Analyte	2,4,5-Trichlorophenol
LabResults	Analyte	2,4,6-Trichlorophenol
LabResults	Analyte	2,4-Dichlorophenol
LabResults	Analyte	2,4-D
LabResults	Analyte	2,4-Dimethylphenol
LabResults	Analyte	Dinitrophenol
LabResults	Analyte	2,4-Dinitrophenol
LabResults	Analyte	2,4-Dinitrotoluene
LabResults	Analyte	2,6-Dinitrotoluene
LabResults	Analyte	2-Chloronaphthalene
LabResults	Analyte	2-Chlorophenol
LabResults	Analyte	2-Methylnaphthalene
LabResults	Analyte	o-Cresol
LabResults	Analyte	2-Methylphenol
LabResults	Analyte	2-Nitroaniline
LabResults	Analyte	2-Nitrophenol
LabResults	Analyte	3,3'-Dichlorobenzidine
LabResults	Analyte	3,3'- Dichlorobenzidine
LabResults	Analyte	3-Nitroaniline
LabResults	Analyte	Methyl isobutyl ketone
LabResults	Analyte	4-Methyl-2-Pentanone
LabResults	Analyte	4-Bromophenyl- phenylether

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	4-Bromophenyl phenyl ether
LabResults	Analyte	3-Methyl-4-chlorophenol
LabResults	Analyte	4-Chloro-3-methylphenol
LabResults	Analyte	4-Chloro-3- methylphenol
LabResults	Analyte	4-Chloroaniline
LabResults	Analyte	4-Chlorophenyl phenyl ether
LabResults	Analyte	4-Chlorophenyl- phenyl ether
LabResults	Analyte	4-Methylphenol
LabResults	Analyte	p-Cresol
LabResults	Analyte	4-Nitroaniline
LabResults	Analyte	4-Nitrophenol
LabResults	Analyte	Acenaphthene
LabResults	Analyte	Acenaphthylene
LabResults	Analyte	Acrolein
LabResults	Analyte	Acrylonitrile
LabResults	Analyte	Aldrin
LabResults	Analyte	Aluminum
LabResults	Analyte	Aluminim
LabResults	Analyte	Anthracene
LabResults	Analyte	Antimony
LabResults	Analyte	Arsenic
LabResults	Analyte	Benzene
LabResults	Analyte	Benzo(a)anthracene
LabResults	Analyte	Benzo(a)pyrene
LabResults	Analyte	Benzo(b)fluoranthene
LabResults	Analyte	Benzo(ghi)perylene
LabResults	Analyte	Benzo(g,h,i)perylene
LabResults	Analyte	Benzo(k)fluoranthene
LabResults	Analyte	Benzoic Acid
LabResults	Analyte	Benzyl alcohol
LabResults	Analyte	bis(2-Chloroethoxy) methane
LabResults	Analyte	Bis(2-chloroethyl) ether
LabResults	Analyte	bis(2-Chloroethyl)ether
LabResults	Analyte	bis(2-Ethylhexyl) phthalate
LabResults	Analyte	Di(2-ethylhexyl)phthalate
LabResults	Analyte	Bromochloromethane
LabResults	Analyte	Bromodichloromethane
LabResults	Analyte	Dichlorobromomethane
LabResults	Analyte	Tribromomethane
LabResults	Analyte	Bromoform
LabResults	Analyte	Bromomethane
LabResults	Analyte	Methyl Bromide
LabResults	Analyte	Butylbenzylphthalate
LabResults	Analyte	Butyl benzyl phthalate
LabResults	Analyte	Cadmium
LabResults	Analyte	Carbazole
LabResults	Analyte	Carbon Disulfide

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Tetrachloromethane
LabResults	Analyte	Carbon Tetrachloride
LabResults	Analyte	Chlorobenzene, total
LabResults	Analyte	Chlorobenzene
LabResults	Analyte	Chlorobenzene (each)
LabResults	Analyte	Chlorodibromomethane
LabResults	Analyte	Dibromochloromethane
LabResults	Analyte	Chloroethane
LabResults	Analyte	Chloroform
LabResults	Analyte	Methyl Chloride
LabResults	Analyte	Chloromethane
LabResults	Analyte	Chromium
LabResults	Analyte	Chrysene
LabResults	Analyte	cis-1,2-Dichloroethylene
LabResults	Analyte	cis-1,2-Dichloroethene
LabResults	Analyte	cis-1,3-Dichloropropene
LabResults	Analyte	Copper
LabResults	Analyte	Cyanide
LabResults	Analyte	Cyanide, free (total)
LabResults	Analyte	Dibenzo(a,h)anthracene
LabResults	Analyte	Dibenzo(a,h)- anthracene
LabResults	Analyte	Dibenzofuran
LabResults	Analyte	Dibromomethane
LabResults	Analyte	Dichlorodifluoromethane
LabResults	Analyte	DDD
LabResults	Analyte	4,4'-DDD
LabResults	Analyte	p,p'-DDD
LabResults	Analyte	p,p'-DDE
LabResults	Analyte	4,4'-DDE
LabResults	Analyte	EDDE
LabResults	Analyte	DDE
LabResults	Analyte	p,p'-DDT
LabResults	Analyte	Total DDT
LabResults	Analyte	4,4'-DDT
LabResults	Analyte	DDT
LabResults	Analyte	Dieldrin
LabResults	Analyte	Diethylphthalate
LabResults	Analyte	Dimethyl phthalate
LabResults	Analyte	Dimethylphthalate
LabResults	Analyte	Di-n-butyl phthalate
LabResults	Analyte	Di-n-butylphthalate
LabResults	Analyte	n-Butylphthalate
LabResults	Analyte	Di-n-octyl phthalate
LabResults	Analyte	Di-n-octylphthalate
LabResults	Analyte	Endosulfan I
LabResults	Analyte	a-Endosulfan
LabResults	Analyte	b-Endosulfan

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Endosulfan II
LabResults	Analyte	Endosulfan sulfate
LabResults	Analyte	Endrin
LabResults	Analyte	Endrin aldehyde
LabResults	Analyte	Endrin ketone
LabResults	Analyte	Ethyl benzene
LabResults	Analyte	Ethylbenzene
LabResults	Analyte	Fluoranthene
LabResults	Analyte	Fluorene
LabResults	Analyte	Heptachlor
LabResults	Analyte	Heptachlor Epoxide
LabResults	Analyte	Hexachlorobenzene
LabResults	Analyte	Hexachlorobutadiene
LabResults	Analyte	Hexachlorocyclopentadiene
LabResults	Analyte	Hexachloroethane
LabResults	Analyte	Indeno(1,2,3-c,d)pyrene
LabResults	Analyte	Indeno(1,2,3-cd)- pyrene
LabResults	Analyte	Iodomethane
LabResults	Analyte	Isophorone
LabResults	Analyte	Isopropylbenzene
LabResults	Analyte	Manganese
LabResults	Analyte	Mercury
LabResults	Analyte	Mercury, Inorganic
LabResults	Analyte	Methoxychlor
LabResults	Analyte	Methylmercury
LabResults	Analyte	2-Methyl-4,6-Dinitrophenol
LabResults	Analyte	4,6-Dinitro-2- methylphenol
LabResults	Analyte	4,6-Dinitro-2-methylphenol
LabResults	Analyte	Methylene chloride
LabResults	Analyte	Dichloromethane
LabResults	Analyte	Methyl tert-Butyl Ether
LabResults	Analyte	Naphthalene
LabResults	Analyte	Nickel
LabResults	Analyte	Nitrobenzene
LabResults	Analyte	N-Nitroso-di-n propylamine
LabResults	Analyte	N-Nitrosodi-n-propylamine
LabResults	Analyte	N-Nitrosodiphenylamine
LabResults	Analyte	N-Nitroso diphenylamine
LabResults	Analyte	Pentachlorophenol
LabResults	Analyte	Phenanthrene
LabResults	Analyte	Phenol
LabResults	Analyte	Pyrene
LabResults	Analyte	Selenium
LabResults	Analyte	Silver
LabResults	Analyte	Styrene
LabResults	Analyte	Tetrachloroethylene
LabResults	Analyte	Tetrachloroethene

### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Toluene
LabResults	Analyte	Toxaphene
LabResults	Analyte	1,2-Trans-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethene
LabResults	Analyte	trans-1,3-Dichloropropene
LabResults	Analyte	trans-1,4-Dichloro-2-Butene
LabResults	Analyte	Tributyl tin
LabResults	Analyte	Trichloroethylene
LabResults	Analyte	Trichloroethene
LabResults	Analyte	Trichlorofluoromethane
LabResults	Analyte	Vanadium
LabResults	Analyte	Vinyl Acetate
LabResults	Analyte	Vinyl Chloride
LabResults	Analyte	Xylene
LabResults	Analyte	Xylene, total
LabResults	Analyte	Xylenes (total)
LabResults	Analyte	Zinc
LabResults	Analyte	alpha-BHC
LabResults	Analyte	a-BHC
LabResults	Analyte	beta-BHC
LabResults	Analyte	b-BHC
LabResults	Analyte	g-BHC
LabResults	Analyte	gamma-BHC (Lindane)
LabResults	Analyte	Lindane (g-BHC)
LabResults	Analyte	delta-BHC
LabResults	Analyte	d-BHC
LabResults	Result_Units	<To be determined from performing party site specific sampling plan>
LabResults	Total_or_Dissolved	Total
LabResults	Total_or_Dissolved	Dissolved
LabResults	Total_or_Dissolved	NA
LabResults	Total_or_Dissolved	DI Leach
LabResults	Total_or_Dissolved	MWM (Meteoric Water Mobility Ext)
LabResults	Total_or_Dissolved	SPLP
LabResults	Total_or_Dissolved	Suspended
LabResults	Total_or_Dissolved	TCLP
LabResults	Total_or_Dissolved	Acid Soluble
LabResults	Total_or_Dissolved	Bioavailable
LabResults	Total_or_Dissolved	Comb Available
LabResults	Total_or_Dissolved	Extractable
LabResults	Total_or_Dissolved	Filterable
LabResults	Total_or_Dissolved	Fixed
LabResults	Total_or_Dissolved	Free Available
LabResults	Total_or_Dissolved	Inorganic
LabResults	Total_or_Dissolved	Non-filterable
LabResults	Total_or_Dissolved	Non-settleable

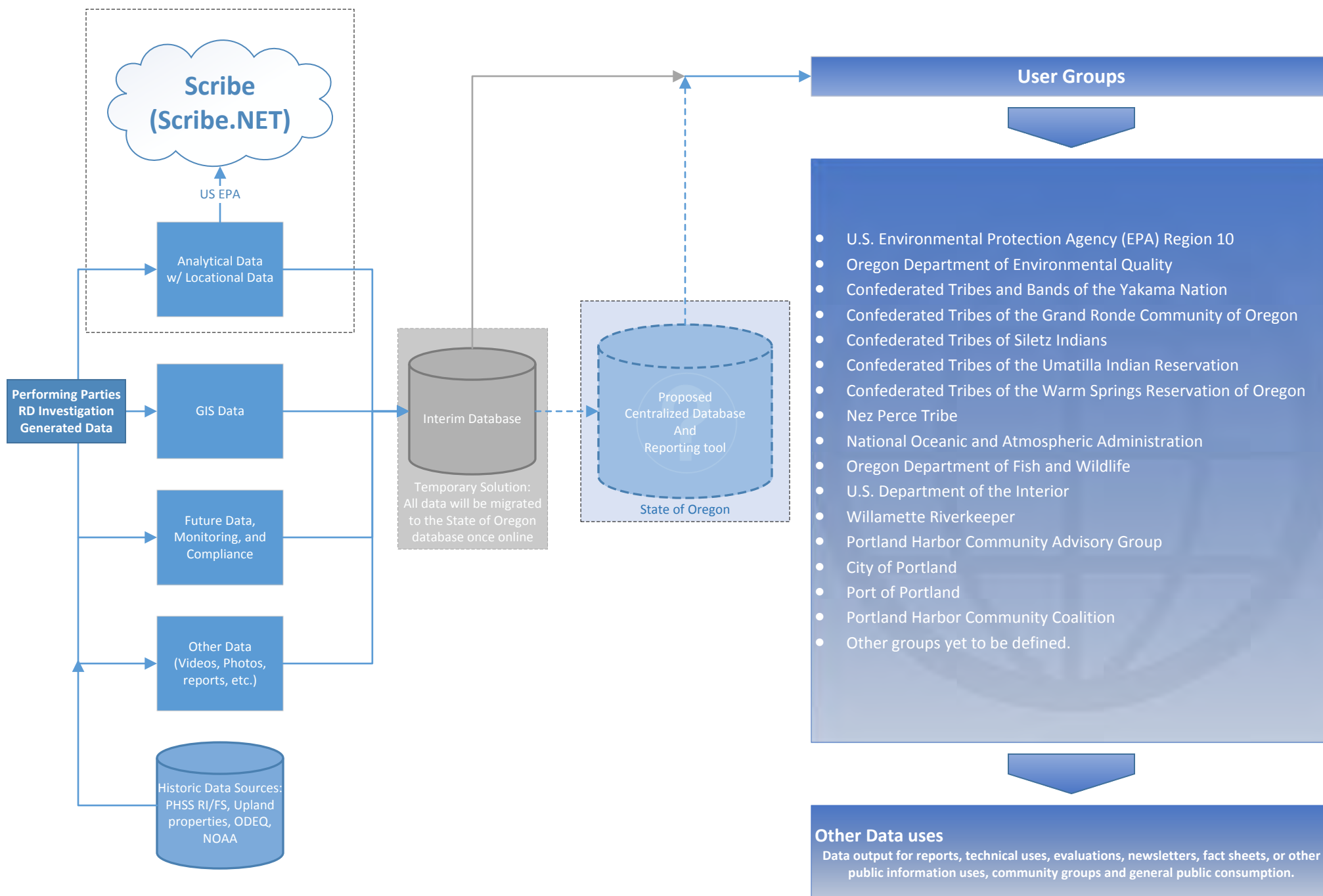
### Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Total_or_Dissolved	Non-volatile
LabResults	Total_or_Dissolved	Organic
LabResults	Total_or_Dissolved	Pot. Dissolved
LabResults	Total_or_Dissolved	Settleable
LabResults	Total_or_Dissolved	Supernate
LabResults	Total_or_Dissolved	Total Recoverable
LabResults	Total_or_Dissolved	Total Residual
LabResults	Total_or_Dissolved	Vapor
LabResults	Total_or_Dissolved	Volatile
LabResults	Total_or_Dissolved	WAD
LabResults	Analytical_Method	<To be determined from performing party site specific sampling plan>
LabResults	Basis	Wet
LabResults	Basis	Dry
LabResults	Lab_Name	<To be determined from performing party site specific sampling plan>
LabResults	QA_Comment	Final
LabResults	QA_Comment	Accepted
LabResults	QA_Comment	Preliminary
LabResults	QA_Comment	Rejected
LabResults	QA_Comment	Validated
LabResults	Result_Qualifier	J
LabResults	Result_Qualifier	U
LabResults	Result_Qualifier	UJ
LabResults	Result_Qualifier	J-
LabResults	Result_Qualifier	J+
LabResults	Result_Qualifier	R
LabResults	Validated	Yes
LabResults	Validated	No
LabResults	ValidationLevel	S2BVEM
LabResults	ValidationLevel	S3VEM
LabResults	ValidationLevel	S4VEM
LabResults	ValidationLevel	NA
LabResults	ValueType	Actual
LabResults	ValueType	Calculated
LabResults	ValueType	Blank Corrected Calc
LabResults	ValueType	Control Adjusted
LabResults	ValueType	Estimated



## **Appendix C - Data Management Conceptual Model**

# Data Management Conceptual Model



## **Attachment 2**

### **Template Sufficiency Assessment Summary Table**

[Name] Project Area Sufficiency Assessment Summary

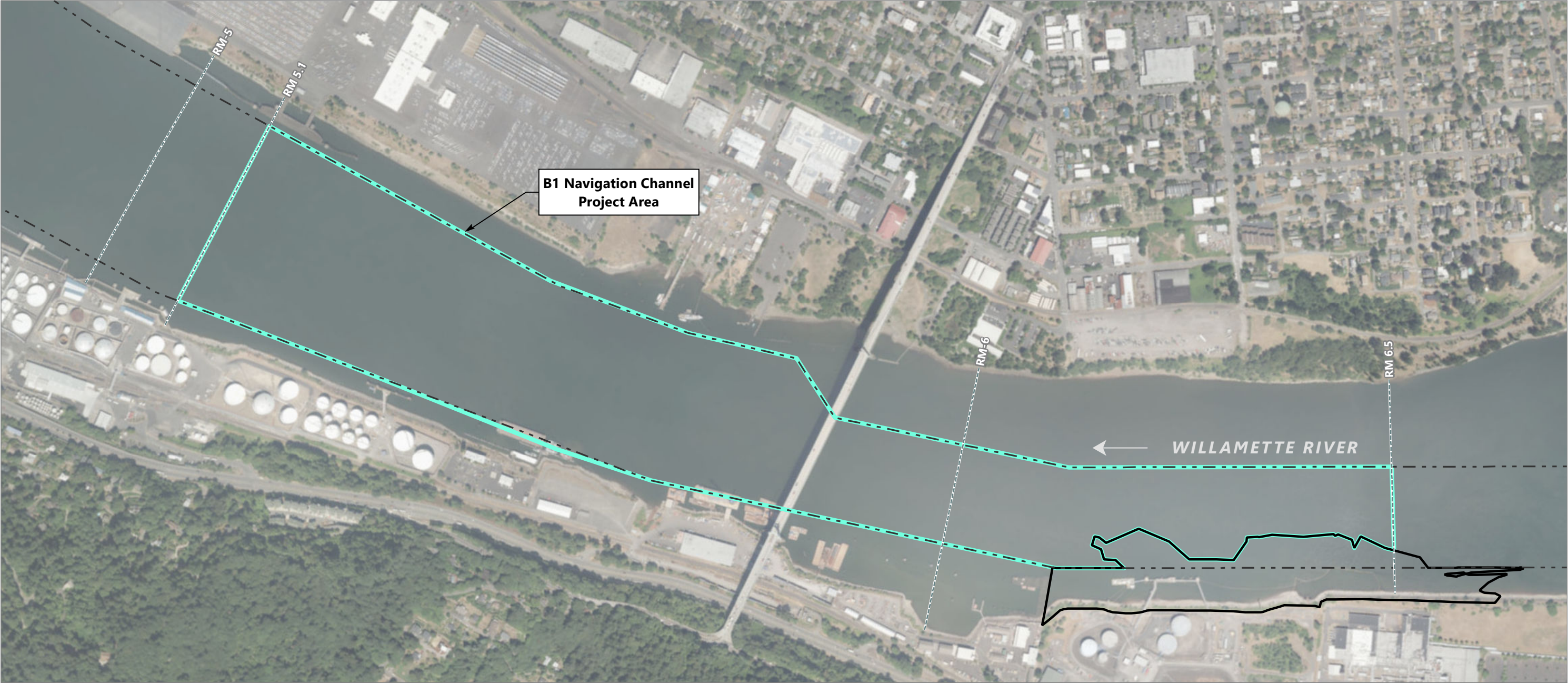
[date]

[illegible]

## **Appendix D**

### **B1 Navigation Channel Project Area Map**





**LEGEND:**

- B1 Navigation Channel Project Area
- Navigation Channel
- River Miles
- Gasco Sediments Site Project Area

**NOTES:**

1. Arrow indicates direction of flow of river.
2. Aerial imagery from City of Portland 2018.

0

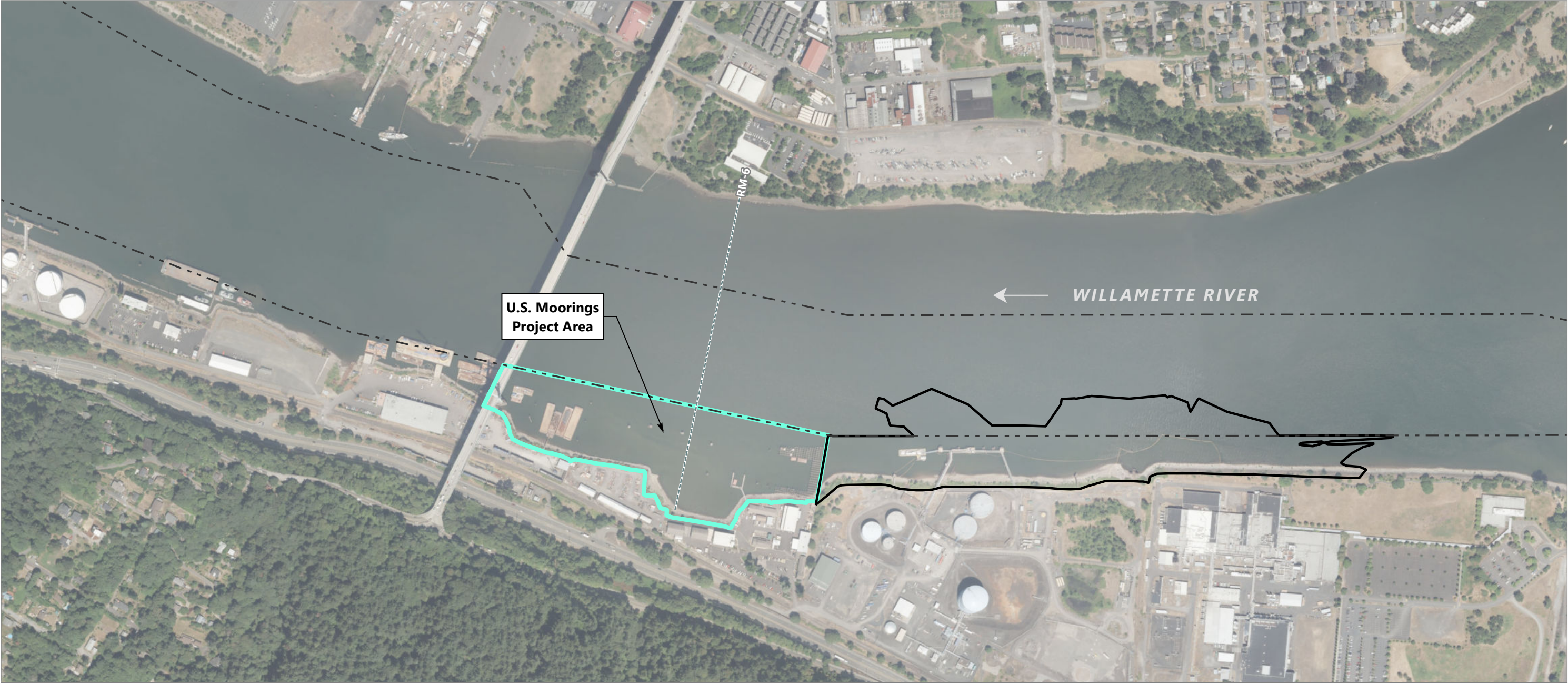
700

Feet

## **Appendix E**

### **U.S. Moorings Project Area Map**





**LEGEND:**

- B1 Navigation Channel Project Area
- Navigation Channel
- River Miles
- Gasco Sediments Site Project Area

**NOTES:**

1. Arrow indicates direction of flow of river.
2. Aerial imagery from City of Portland 2018.
3. U.S. Moorings Project Area extends to top of bank. Top of bank is approximated from Oregon Lidar Consortium bare earth data collected in 2014.

0 500  
Feet



## **Appendix F**

### **Phase 2 Disbursement Language**

Pursuant to Paragraph 104 of this Settlement, following EPA's issuance of the Notice of Work Completion per Section XXXXII, Respondent may request that this Settlement be amended. If the conditions outlined in Paragraph 104 are met, EPA will agree to the amendment request, and the following will replace the current text of Paragraph 104:

43. Within 30 days after EPA's receipt of a Cost Summary and Certification, as defined by ¶ 105.b, or if EPA has requested additional information under ¶ 105.b or a revised Cost Summary and Certification under ¶ 105.c within 30 days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Section, EPA shall disburse the funds from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account at the completion of the following milestone, and in the amount set forth below:

Milestone	Disbursement of Funds
EPA issuance of Notice of Completion with regard to activities required under Appendix B and Appendix C	\$1,332,000 <sup>1</sup> from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account, plus any Interest Earned on that amount

Within 30 days after the Effective Date, Respondent shall provide to EPA the name and address for payment or instructions for electronic funds transfer for the Phase 2 Disbursement. EPA shall disburse the funds for the Phase 2 Disbursement from the B1 Navigation Channel and U.S. Moorings Disbursement Special Account to Respondent consistent with the information provided.

Reimbursement for Disbursement Phase 2 will only be provided for claims made on or before December 31, 2027.

If the Parties agree to amend the Settlement as provided above, the following language will also be added to the Settlement:

On (insert date) the Parties to this Settlement agreed to amend this Settlement, by replacing the original text of Paragraph XX with the agreed-upon revised text of Paragraph XX provided herein. The amendment shall be effective upon signature by the Superfund and Emergency Management Division, EPA Region 10.

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<sup>1</sup> This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.