UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SUPERFUND &
EMERGENCY
MANAGEMENT DIVISION

MEMORANDUM

DATE: April 09, 2020

SUBJECT: Monitoring Well Installation Work Plan
Crawford Street Site, Portland, OR
ECSI # 2363
March 02, 2020

FROM: Benjamin Leake, PMP BJL
Remedial Project Manager

TO: Jim Orr
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Oregon Department of Environmental Quality (DEQ)

Following are the United States Environmental Protection Agency's (EPA) comments on the *Crawford Street Monitoring Well Installation Work Plan* (work plan), prepared by Cascadia Associates, LLC on behalf of Mr. Tom Leaptrott, the current site owner. This work plan was received by EPA on March 03, 2020.

The stated purpose of the work plan is to describe the methods and procedures for installing nine monitoring wells at the Crawford Street Site (Site). EPA understands that the monitoring well installation and soil sampling are being conducted in response to DEQ comments on the October 29, 2015 *Data Gap Analysis and Sampling and Analysis Plan Source Control Evaluation report* (Bridgewater, 2015) and that the overall objective is to characterize the groundwater and potential sources of contamination at the site. EPA's review focused on protection of the Willamette River related to potential for the Site to contaminate or recontaminate the surface water and or sediment via groundwater transport of chemicals through the river bank.

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

Primary Comments

1. Objectives for the placement of monitoring wells should be described in the work plan. While historical information is presented in the narrative, figures, and tables, it is not clear how the proposed well locations in Figure 3 address potential sources of groundwater contamination at the site. The objectives for the placement of monitoring wells should consider past practices related to potential releases of contamination, existing soil and groundwater data, preferential groundwater flow paths and known groundwater discharge points (e.g., river bank seeps), and current or planned stormwater infiltration areas. Each well or group of wells should have a specific objective and rationale for use of the data collected.

2. Discussion of the site hydrogeology should be included in the work plan. Information on the extent, thickness, aquifer matrix, and hydraulic gradients of the system is needed to develop the monitoring well installation approach.

3. The text in Scope of Work, Soil Sampling, page 6 should be revised. The statement "With the exception of a few metals detected above background concentrations, field and chemical analysis results did not indicate the presence of significant (if any) soil impacts" is inaccurate and should be revised. Investigations performed with DEQ and EPA oversite indicated significant soil contamination at the proposed stormwater infiltration basin site and along the Crawford Street river bank. The river bank investigation indicates soil contamination in the river bank exceeding Portland Harbor Superfund Site (PHSS) remedial action levels (RALs) for polycyclic aromatic hydrocarbons, polychlorinated biphenyls (PCBs), and dioxin/furans, with PCBs and dioxin/furans also exceeding the principal threat waste (PTW) thresholds in some areas.

4. The process for how and when chemicals of potential concern (COPCs) are to be identified should be explained in the work plan. There are multiple decision points in the proposed work plan based on the presence of COPCs, yet there is no discussion of how the COPCs will be determined. This process would become clear during development of objectives and decision logic.

5. Data collected during the proposed stormwater infiltration basin assessment and the river bank assessment work should be presented in the data tables and figures of this work plan (i.e., Appendix B) to inform the placement of groundwater monitoring wells. These data include the four seeps in the river bank that are located below ordinary high water and have concentration of chemicals that exceed the PHSS CULs. One of the previous documents that reported the seeps is the *Data Gaps Analysis and Sampling and Analysis Plan Source Control Evaluation Crawford Street* dated October 29, 2015, prepared by the Bridgewater Group. The elevation of the seeps and their relation to groundwater should be part of the historic information used to locate wells and to select chemicals for analyses.

To Be Considered Comments

1. The work plan and quality assurance project plan (QAPP) should be developed following the data quality objective (DQO) process (EPA 1993, 2000). At a minimum, the data collection should be based on DQO statements and decision rules to address:
    a. Portland Harbor Joint Source Control Strategy (JSCS) requirements for groundwater source control evaluation.
    b. PHSS remedial action objective (RAO) 4 – reduce migration of COCs in groundwater to sediment and surface water such that levels are acceptable in sediment and surface water for human exposure.
    c. PHSS RAO 8 – reduce migration of COCs in groundwater to sediment and surface water such that levels are acceptable in sediment and surface water for ecological exposure.
    d. The discharge of groundwater through the river bank and inform the design of the river bank source control measure.

2. The "site chemicals of interest" (COIs) list in the Chemical Analysis section on page 9 should be updated to include dioxin/furans. Dioxin/furans have been detected at concentrations exceeding PHSS RALs over a large area of the river bank, including some areas that exceed PTW thresholds.

3. The proposed soil sampling depths should be based on DQOs. As presented in the work plan, it is not known if the proposed soil sampling depths of 2,10, and 20 feet are suitable for completing the groundwater source control evaluation.

4. Seasonal high water elevations should be confirmed at each boring using soil observations (e.g., color changes, iron oxide zones). Relying on seasonal high water levels at the Willamette Cove site may result is collecting samples above or below the seasonal high water level.

5. The rationale for 20-foot well screen lengths should be presented. Long well screens can result in dilution effects and may not be appropriate at this site. For example, at the nearby Willamette Cove site, the groundwater level change at a shallow well throughout the year was less than 10 feet. Based on this information, well screens shorter than 20 feet are appropriate for monitoring groundwater at that site throughout the year.

6. The rationale to eliminate COIs from the analyte list for future events if the COI does not exceed the PHSS CUL or JSCS screening levels during the initial sampling event should be revised. At a minimum, the COIs should be analyzed during low and high groundwater conditions to evaluate groundwater elevation effects on concentration (e.g., smear zone effects).

7. Clarification and/or revision is needed for the Soil Sampling section of the work plan to include additional collection and analysis of soil samples if elevated photoionization detector levels and/or discoloration are observed.

8. A description should be added to the work plan on how the wells will be constructed following the well standards in Oregon Administrative Rules 690-240-0540, including Rule 2b for casing spacing, and centering guides from Rule 2e for wells over 30 feet deep.

9. Use of trip blanks should be added to the quality assurance sampling presented in Section 2.2 of the QAPP. Use of trip blanks is necessary for data quality assurance in sampling and analysis for volatile organic compounds.

10. The handling and disposal of investigation-derived waste (i.e., drill cuttings, well development water, and decontamination fluids) should be described in more detail in the work plan. The work plan has minimal information on waste handling and disposal methods.

References

Bridgewater Group. 2015. Data Gap Analysis and Sampling and Analysis Plan, Source Control Evaluation. October 29, 2015.

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

EPA. 2000. Data Quality Objectives Process for Hazardous Waste Site Investigations QA/G-4HW – Final. Publication EPA/600/R-00/007.

EPA. 1993. Data Quality Objectives Process for Superfund: Interim Final Guidance. OSWER Publication 9355.9-01 EPA 540-R-93-071.