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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Southwest Region Office

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September 6, 2023

Tasya Gray, LG
DOF Dalton, Olmsted & Fuglevand
1001 SW Klickitat Way, Ste 200B
Seattle, WA 98134
ngray@dofnw.com

Scott Hooton
Port of Tacoma
PO Box 1837
Tacoma, WA 98401-1837
shooton@portoftacoma.com

Re: Comments on fourth quarter groundwater report and requirement for additional groundwater sampling

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAAFA)
- **Site Address:** 1500 Block Taylor Way E, Tacoma, Pierce County, WA 98409
- **Agreed Order:** DE 14260
- **Enforcement Order:** DE 19410
- **Facility/Site ID:** 1403183
- **Cleanup Site ID:** 4692

Dear Tasya Gray and Scott Hooton:

Thank you for submitting the fourth quarter 2022 groundwater monitoring report (report) for review by the Department of Ecology (Ecology).¹ Ecology has the following comments on the report. **To address the data gaps identified in the comments, it is necessary that additional groundwater samples be collected for dissolved metals and for per- and polyfluoroalkyl substances (PFAS).**

1. **Arsenic Groundwater Background:** Ecology has recently published arsenic natural background groundwater concentrations for the state.² According to this study, the background threshold value for arsenic in groundwater in the Puget Sound Basin area is 8 micrograms per liter (µg/L). Ecology agrees that this value may be used as the arsenic groundwater background concentration at the Site.

¹ Dalton, Olmsted, & Fuglevand, Inc.(DOF), 2023, *Fourth Quarter 2022 Groundwater Data Analysis Report*, March 9.

² San Juan, Charles, 2022, *Natural Background Groundwater Arsenic Concentrations in Washington State*, Toxics Cleanup Program, Washington State Department of Ecology, Publication No. 14-09-044, January.

- 2. Sampling for Dissolved Metals:** As previously commented by Ecology,³ and as shown on report Figures 13 through 16 (arsenic and copper groundwater concentrations), the extent of the groundwater contamination plume for selected metals in the shallow and intermediate aquifers has not been completely defined. The 2022 metals groundwater data are total metals concentrations only. Total metals concentrations are appropriate for evaluating groundwater contamination. However, surface water criteria are based on dissolved metals concentrations and the groundwater- to- marine surface water pathway is of primary concern for groundwater at the Site. Therefore, you shall collect samples from all Site wells for dissolved arsenic, copper, and manganese plus the following dissolved metals from specific wells: lead (CCW-3A, CCW-5B and CCW-6B), mercury (CTMW-17), chromium (TWA-6D, CCW-6C, CTMW-17, and CTMW-25D), nickel (CCW-3A, CTMW-5, and TWA-3), and zinc (CCW-3A, CCW-6B, and CTMW-5). This information is needed to define the dissolved metals groundwater plume and determine if additional wells are needed. **Please perform this sampling event during the 4th quarter of 2023.**

The need to sample for dissolved metals at the site was previously mentioned by Ecology during technical discussions with you on June 13, 2023, and August 16, 2023. During the August meeting, Tasya Gray asked if Ecology would accept the use of 0.1-micron filter for the collection of dissolved samples, instead of the standard practice of using 0.45-micron filters. The U.S. Environmental Protection Agency (EPA, 1996) states that for dissolved metal determinations, samples must be filtered through a 0.45-micron filter.⁴ Therefore, 0.45-micron filters shall be used for collecting dissolved metals samples. However, you may also collect separate samples that are filtered with a 0.1-micron filter if you like.

- 3. PFAS Sampling:** Ecology recently published guidance for investigating and remediating PFAS contamination in Washington State.⁵ According to the Interstate Technology Regulatory Council (ITRC, 2022), landfills can be sources of PFAS to the environment.⁶ Therefore, the remedial investigation for the Site will also need to include PFAS as constituents of concern. To begin the investigation of PFAS at the Site, please prepare a sampling and analysis plan (SAP) for collecting groundwater samples for PFAS at a selected set of wells. The sample well set should include wells in both the shallow and intermediate aquifers, known source area wells, and upgradient and/or distal wells from source areas. The SAP shall include quality assurance and quality control (QA/QC) measures specific for PFAS sampling. Please refer to Ecology's PFAS guidance document as you prepare the SAP. **Please submit the SAP for Ecology review and approval within 60 days of the date of this letter.**

³ Ecology, 2022, *Comments on First and Second Quarter Groundwater Reports, Request for Work Plan, and Resolution of Internal Dispute*, letter from Steve Teel, Ecology, to Tasya Gray, DOF, and Scott Hooton, Port of Tacoma, December 6.

⁴ EPA, 1996, *Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, Office of Water, Engineering and Analysis Division, July.

⁵ Ecology, 2023, *Guidance for Investigating and Remediating PFAS Contamination in Washington State*, Toxics Cleanup Program Publication No. 22-09-058, June.

⁶ Interstate Technology Regulatory Council (ITRC), 2022, *Technical Resources for Addressing Environmental Releases of Per- and Polyfluoroalkyl Substances (PFAS)*, <https://pfas-1.itrcweb.org/> June.

If you have any questions regarding this letter, please contact me at 360-890-0059 or steve.teel@ecy.wa.gov.

Sincerely,



Steve Teel, LHG
Cleanup Project Manager/Hydrogeologist
Toxics Cleanup Program
Southwest Region Office

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Ecology Site File