

HAHN AND ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

January 15, 2020

Mr. Dana Bayuk
Oregon Department of Environmental Quality
Northwest Region, Portland Office
Portland Harbor Section
700 NE Multnomah Street, #600
Portland, Oregon 97232

HAI Project No. 2708
DEQ ECSI File No. 84

**SUBJECT: Progress Report, NW Natural Site, 7900 NW St. Helens Avenue and
7200 NW Front Avenue, Portland, Oregon**

Mr. Bayuk:

Hahn and Associates, Inc. (HAI) has prepared this monthly Progress Report to summarize Remedial Investigation/Feasibility Study (RI/FS) and source control-related work activities conducted by NW Natural relating to historic manufactured gas plant (MGP) activities at the NW Natural Site during the month of December 2019. NW Natural is completing upland investigation and cleanup activities at the NW Natural Site under the Voluntary Agreement No. ECVC-WMCVC-NWR-94-13 (Voluntary Agreement) between NW Natural and the Oregon Department of Environmental Quality (DEQ).

**1. ACTIONS TAKEN UNDER THE VOLUNTARY AGREEMENT DURING
THE PREVIOUS MONTH**

Tasks related to maintenance of the HC&C system and the groundwater treatment system were conducted during December 2019, with the system operating in full long-term operational mode.

A total of 9,637,446 gallons of water were treated in the on-site groundwater treatment plant and discharged during December 2019 with all monitoring and reporting completed in accordance with the facility's NPDES permit.

HAI field activities related to monitoring and maintenance of the dense non-aqueous phase liquid (DNAPL) extraction system at Fill WBZ well locations MW-6-32 and MW-13-30 occurred during December 2019. The system recovered approximately 40 gallons of fluids in December, estimated to be approximately 40% DNAPL.

Weekly manual water level measurements within the former Koppers tank basin and select adjacent wells and piezometers were completed during December 2019.

Baseline DNAPL removal as needed to maintain levels below the top of the well sumps was conducted by Anchor QEA during December 2019 in the following wells near the river shoreline.

- MW-16-45
- MW-18-30
- MW-26U
- MW-27U
- PW-2L
- PW-6U

The following upland FS related field tasks were in progress during December:

- Weekly measurements of DNAPL presence at Fill WBZ wells MW-43F, MW-44F, and MW-45F have been conducted since August 2017. During December, measurements recorded up to 0.03 feet of DNAPL in the base of well MW-43F (black; high viscosity appearance); no accumulation of DNAPL within well MW-44F (none recorded to date, though probe tip shows a sheen); and up to 1.6 feet of DNAPL within well MW-45F (brown; low viscosity appearance).

NW Natural's fourth quarter 2019 integrated groundwater monitoring event across the Gasco Operable Unit (water levels and DNAPL measurements) was conducted on December 12, 2019.

In December, NW Natural conducted quarterly sampling of Fill WBZ monitoring wells associated with the LNG Basin (MW-46F, MW-47F, MW-48F, and MW-49F) and select shoreline Fill WBZ wells (OW-7-17, MW-02-32, MW-21-12, OW-5F, OW-09-25, MW-03-26, OW-8-15, MW-23-27, and MW-04-35).

2. ACTIONS SCHEDULED TO BE TAKEN IN THE NEXT MONTH

During January, it is anticipated that a pilot boring for the proposed PW-8-39 well replacement will be completed with soil samples submitted to a laboratory for grain size testing.

NW Natural and DEQ technical working group communications and meetings will occur as needed within the next month to discuss ongoing project tasks.

Routine baseline DNAPL measurements and removal will continue as needed to maintain levels below the top of the well sumps in nearshore HC&C-related wells.

Tasks related to routine maintenance of the HC&C system and the groundwater treatment system will be conducted.

Weekly manual water level measurements within the former Koppers tank basin and select adjacent wells or piezometers will occur during January 2020.

A DNAPL sample will be collected for laboratory DNAPL mobility assessment testing from wells MW-43F and MW-44F should measurable thicknesses / sufficient volumes be identified at these locations during this timeframe. It is

estimated that a minimum thickness of 0.5 feet of DNAPL accumulation will be necessary in order to collect sufficient sample volume for the laboratory.

3. LABORATORY TEST RESULTS RECEIVED DURING THE PREVIOUS MONTH

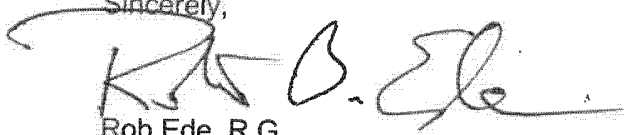
NW Natural receives test results on a regular basis as a result of routine monitoring related to groundwater quality or as specified by various permit requirements. Additionally, test results are periodically received through implementation of task-specific investigation activities resulting from agency-approved work plans. These data are provided to DEQ or the permitting authority (if different than DEQ) in accordance with previously approved formats and schedules.

4. PROBLEMS EXPERIENCED DURING THE PREVIOUS MONTH

There were no problems of significance experienced during the previous month.

Should you have any questions, please contact the undersigned.

Sincerely,



Rob Ede, R.G.
Principal

rober@hahnenv.com

cc: Mr. Bob Wyatt, NW Natural
Ms. Patty Dost, Pearl Legal Group PC
Ms. Rachel Melissa, Pearl Legal Group PC
Ms. Sarah Riddle, Pearl Legal Group PC
Mr. John Edwards, Anchor QEA, L.L.C.
Mr. Ben Hung, Coalition Environmental LLC
Mr. Ryan Barth, Anchor QEA, L.L.C.
Ms. Halah Voges, Anchor QEA, L.L.C.
Ms. Jen Mott, Anchor QEA, L.L.C.
Mr. John Renda, Anchor QEA, L.L.C.
Mr. Tim Stone, Anchor QEA, L.L.C.
Mr. Todd Thornburg, Anchor QEA, L.L.C.
Ms. Grace Weatherford, Anchor QEA, L.L.C.
Mr. Chip Byrd, Severson Environmental Services, Inc.
Mr. Henning Larsen, DEQ NW Region
Mr. Paul Seidel, DEQ NW Region
Mr. Dan Hafley, DEQ NW Region
Ms. Jennifer Peterson, DEQ NW Region
Mr. Mike Poulsen, DEQ NW Region
Mr. Myron Burr, Siltronic Corporation
Mr. Mike Murray, Maul Foster & Alongi, Inc.

Ms. Mary Benzinger, Maul Foster & Alongi, Inc.
Ms. Kelly Titkemeier, Maul Foster & Alongi, Inc.
Mr. David Rabbino, Jordan Ramis, PC
Mr. Sean Sheldrake, Region 10 EPA
Ms. Eva DeMaria, Region 10 EPA
Mr. Lance Peterson, CDM, Inc.