

April 19, 2022

Mr. Thomas Middleton, LHG
Washington State Department of Ecology
Southwest Region – Toxics Cleanup Program
PO Box 47775
Olympia, WA 98540-7600

Re: Groundwater Monitoring Plan Addendum – Olympic Water and Sewer, Inc.
781 Walker Way, Port Ludlow, WA 98365
Facility ID #62223345, Cleanup ID #1196
Aspect Project No. 130046

Dear Mr. Middleton:

Aspect Consulting, LLC (Aspect) has prepared this Groundwater Monitoring Plan Addendum on behalf of Raydient to update Aspect's "Groundwater Monitoring Plan, Olympic Water & Sewer, Inc (OWSI)" dated July 20, 2015 (Aspect, 2015). The Groundwater Monitoring Plan and this Addendum are for the OWSI property located at 781 Walker Way in Port Ludlow, Washington (herein referred to as the Site). This Addendum addresses the addition of a new water supply well (Well #18) to the monitoring program.

The Site is listed under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) with the identification number SW1311. Groundwater monitoring has been conducted at the Site since July 2019 in compliance with the OWSI Restrictive Environmental Covenant recorded for tax parcel No. 821084004.

Water Supply Well #18 Siting

Due to the declining productivity of the existing water supply well (Well #2) at the Site, OWSI contracted Robinson Noble, Inc. (Robinson Noble) to site a new water supply well (Well #18). The location of the new well was proposed in the northeast corner of the Site to take advantage of the high productivity of the aquifer while remaining upgradient of the contaminated groundwater in the vicinity of MW-1 and MW-2 (Figure 1). Prior to the installation of Well #18, a test well was installed to assess the presence of Site contaminants of concern (COCs) at the proposed location (Robinson Noble, 2021).

The test boring was installed by Holt Services, Inc. (Holt) with the oversight of Robinson Noble in December 2020. A boring was advanced to 120 feet below ground surface (bgs) and soil samples were collected for laboratory analysis for gasoline-range total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and xylenes (BTEX), 1,2-dichloroethane (EDC), 1,2-dibromomethane (EDB), methyl tert-butyl ether (MTBE), and naphthalene. Analytes were not detected above the laboratory detection limits in any of the soil samples submitted for analysis (Robinson Noble, 2021).

A monitoring well (MW-18T; Figure 1) was completed within the test boring with a screen interval from 23 to 38 feet bgs, to capture perched groundwater observed above a silt layer occurring at 35 to 39 ft bgs. Following development of the well, a groundwater sample was collected for analysis of gasoline-, diesel-, and oil-range TPH, BTEX, EDC, EDB, MTBE, and naphthalene. Analytes were not detected above the laboratory detection limits in the groundwater sample submitted for analysis (Robinson Noble, 2021).

Between August 3 and September 7, 2021, Holt and Robinson Noble over-drilled MW-18T to a total depth of 255 feet bgs and completed the boring as a water supply well (Well #18) with a screen interval from 205 to 247 feet bgs (Robinson Noble, 2022). The well construction detail and geologic log is included as Appendix A. A groundwater sample was collected from Well #18 following a 24-hour constant-rate pump test and submitted for laboratory analysis of gasoline-, diesel-, and oil-range TPH and BTEX. Toluene was detected at a concentration below the Model Toxics Control Act (MTCA) Method A cleanup level. Remaining analytes were not detected above the laboratory detection limits (Robinson Noble, 2022).

Updated Groundwater Monitoring Program

The current long-term groundwater monitoring network currently consists of five monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5), one water supply well (Well #2), and an intermittent stream (SW-1) along the west edge of the Site (Figure 1).

In accordance with the Groundwater Monitoring Plan and Restrictive Environmental Covenant for the Site, groundwater sampling was conducted on a quarterly basis between July 2019 and May 2020 during Year 1 of monitoring. Sampling was conducted once (annually) in 2021 during Year 2 of the monitoring program. Sampling results from the Year 1 and Year 2 monitoring events are documented in Aspect's "Annual Groundwater Monitoring Report – Year 1" dated October 15, 2020 (Aspect, 2020) and "Annual Groundwater Monitoring Report – Year 2" dated February 9, 2022 (Aspect, 2022).

Groundwater monitoring will continue on an annual basis in accordance with the Groundwater Monitoring plan for upcoming Years 3 through 5 and include water supply Well #18. The addition of Well #18 to the monitoring network will provide data about groundwater in the lower aquifer and upgradient of the known groundwater contaminant plume. Well #18 will be sampled at the same frequency as the wells in the existing groundwater monitoring network. At this time, OWSI will not be decommissioning Well #2, so Well #2 will remain in the groundwater monitoring program.

Groundwater samples will be analyzed for the following COCs and compared to MTCA Method A cleanup levels:

- Gasoline-range TPH by Northwest Method NWTPH-Gx
- BTEX by United States Environmental Protection Agency (EPA) Method 8021B

Additionally, geochemical parameters will continue to be used to assess the efficacy of monitored natural attenuation (MNA) at the Site. The indicator constituents and their respective analytical methods include:

- Sulfate (SM4500SO4 or EPA 300)
- Nitrate + Nitrite (SM450NO3 or EPA Method 353.2)
- Ferrous Iron (Fe^{+2} soluble [SM3500-Fe-D])
- Manganese (Mn^{+2} soluble [EPA 200.8])
- Methane (RSK 175)
- Alkalinity (SM2320B)

References

Aspect Consulting, LLC (Aspect), 2015, Groundwater Monitoring Plan, Olympic Water & Sewer, Inc. Site, dated July 20, 2015.

Aspect Consulting, LLC (Aspect), 2020, Annual Groundwater Monitoring Report – Year 1, Olympic Water & Sewer, Inc. Site, dated October 15, 2020.

Aspect Consulting, LLC (Aspect), 2022, Annual Groundwater Monitoring Report – Year 2, Olympic Water & Sewer, Inc. Site, dated February 9, 2022.

Robinson Noble, Inc. (Robinson Noble), 2020, Notification of Proposed Drilling Operation, dated December 11, 2020.

Robinson Noble, Inc. (Robinson Noble), 2021, Drilling and testing results for monitoring Well MW-18T; radius of control-variance for Olympic Water and Sewer, Inc. Production Well 2R (Well 18), dated January 25, 2021.

Robinson Noble, Inc. (Robinson Noble), 2022, Construction and Testing of Production Well 18, dated April 2022.

Limitations

Work for this project was performed for Raydient (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Washington State Department of Ecology
April 19, 2022

DRAFT
Project No. 130046

Sincerely,
Aspect consulting, LLC

Eric Maise, PE
Project Engineer
emaise@aspectconsulting.com

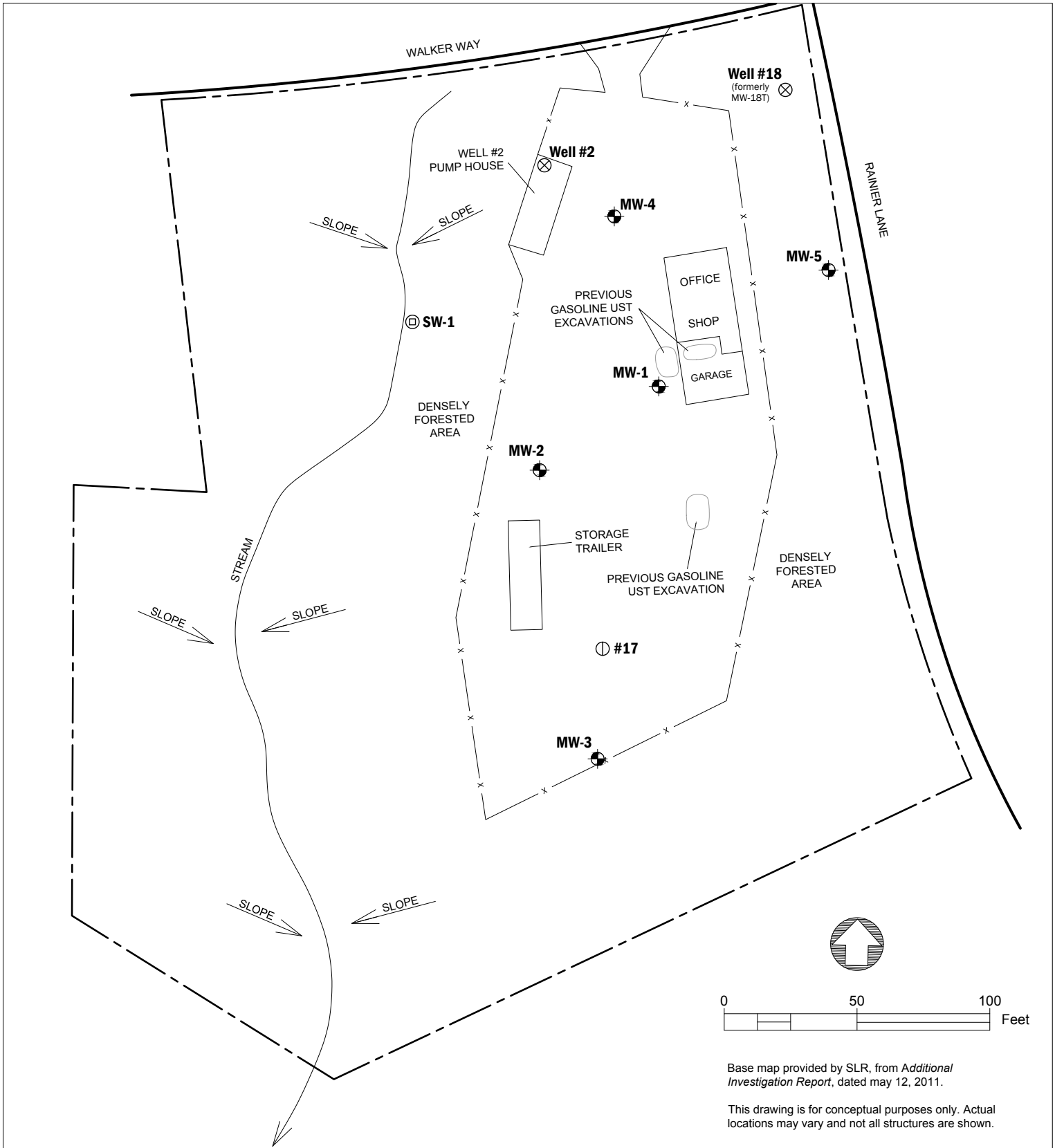
Eric Marhofer, PE
Associate Environmental Engineer
emarhofer@aspectconsulting.com

Attachments: Figure 1 – Site Plan
Appendix A – Production Well 18, Construction Detail and Geologic Log

cc: Ms. Sarah Steffen, Raydient
Mr. Greg Rae, Olympic Water & Sewer, Inc.
Mr. Jared Keefer, Jefferson County Public Health

V:\130046 OPG Port Ludlow Property\Deliverables\GWMP Addendum\GWMP Addendum Draft Letter.docx





FIGURES



Base map provided by SLR, from *Additional Investigation Report*, dated may 12, 2011.

This drawing is for conceptual purposes only. Actual locations may vary and not all structures are shown.

Legend

-  Monitoring Well Location
-  Stream Sample Location
-  Water Supply Well Location
-  Existing Casing Location

Site Plan
 Groundwater Monitoring Plan Addendum
 Olympic Water & Sewer, Inc.
 Port Ludlow, Washington



Apr-2022
 PROJECT NO.
 130046

BY:
 DWU/SCC
 REVISED BY:
 SCC

FIGURE NO.
1

APPENDIX A

Production Well #18, Construction Detail and Geologic Log

Construction Detail

Geologic Log

