

July 18, 2022

Washington State Department of Ecology  
PO Box 47600  
Olympia, Washington 98503

Attention: Josh Morman and Amy Hargrove

Subject: Post-Interim Action Groundwater Monitoring Progress Report – May 2022 Monitoring Event  
Quiet Cove Site  
Anacortes, Washington  
Agreed Order No. DE 11346

## **INTRODUCTION**

Pursuant to Agreed Order No. DE11346 and the Washington Department of Ecology (Ecology) approved Post-Interim Action Construction Groundwater Monitoring Plan (GeoEngineers 2021a), post-interim action groundwater monitoring activities are being performed by the Port of Anacortes (Port) to evaluate groundwater conditions for four quarters following completion of cleanup actions at the Quiet Cove Site (Site). The Site is situated along the shoreline of Guemes Channel at 202 O Avenue (the intersection of 2<sup>nd</sup> Street and O Avenue) in Anacortes, Washington as shown in the Vicinity Map (Figure 1).

In accordance with the Ecology-approved Interim Action Work Plan (IAWP; GeoEngineers 2020), petroleum hydrocarbon-related contamination from historical land use was excavated from part of the Site and transported for permitted landfill disposal between August 2020 to February 2021. Details of the Interim Action Cleanup are described in the Interim Action Construction Completion Report (Completion Report; GeoEngineers 2021b).

This progress report is being provided to document groundwater monitoring results for the third quarterly post-interim action groundwater monitoring event. Upon completion of the required quarterly monitoring (four quarters total), groundwater monitoring activities will be summarized in a final report and submitted to Ecology.

## **SUMMARY OF GROUNDWATER MONITORING ACTIVITIES**

### **Sampling Procedures**

Prior to sampling, groundwater levels were measured in each monitoring well using an electric water level indicator (e-tape). Measurements were made to the nearest 0.01 foot relative to the well casing rim elevations. Measured groundwater levels are summarized in Table 1.

Groundwater samples were obtained from new (MW-1A, MW-2A, MW-13, MW-14, and MW-15) and existing (MW-3, MW-4, and MW-8) monitoring wells as shown on Figure 2 using low-flow/low-turbidity sampling techniques to minimize the potential for suspension of sediment in groundwater. Samples for shoreline

wells were collected around low tide during the monitoring event. Groundwater was pumped at 0.5 liter per minute or less using a peristaltic pump through disposable polyethylene tubing that was placed at the screened interval. A water quality meter with flow-through cell was used to monitor groundwater parameters during purging. Groundwater samples were obtained after ambient groundwater conditions were achieved at each well location. Groundwater field parameters measured at the time of sampling are presented in Table 1.

### Chemical Analysis

The groundwater samples that were collected were submitted to OnSite Environmental, Inc. in Redmond, Washington for a combination of the following chemical analysis:

- Gasoline-range petroleum hydrocarbons by Ecology Method NWTPH-Gx;
- Diesel- and heavy oil-range petroleum hydrocarbons by Ecology Method NWTPH-Dx with and without the silica gel cleanup preparation method;
- Volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX), n-hexane, methyl tert-butyl ether (MTBE), ethylene dibromide (EDB) and ethylene dichloride (EDC) by United States Environmental Protection Agency (EPA) Method 8260;
- Total and dissolved metals including arsenic, cadmium, chromium, lead, and mercury by EPA Method 6000/7000 series;
- Total alkalinity by SM 2420 B-97;
- Ferrous iron by SM 3500-Fe B-97;
- Nitrate and sulfate by EPA 300.0;
- Dissolved manganese by EPA 6020A; and
- Dissolved methane by EPA RSK-175.

### Analytical Results

Groundwater analytical results from the May 2022 groundwater monitoring event are summarized in Table 1. In the May 2022 groundwater samples, the following exceedances of the preliminary screening levels were identified:

- Diesel- and/or heavy oil-range TPH in wells MW-8 and MW-15;
- Benzene in wells MW-8 and MW-13; and
- N-hexane in monitoring at MW-8.

Analytes exceeding the preliminary screening levels during one or more post-interim action groundwater monitoring event, including gasoline-, diesel- and heavy oil-range total petroleum hydrocarbons (TPH) and benzene have been plotted on graphs to present groundwater trends over time. Trend plots comparing the relationship between gasoline-range TPH and benzene are shown on Figure 3. Trend plots for diesel- and heavy oil-range TPH are shown on Figure 4. Table 1 includes historical groundwater analytical data that is presented in the trend plots.

## LIMITATIONS

This progress report has been prepared for the exclusive use of the Port of Anacortes and the Washington State Department of Ecology. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance. Any use of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and written authorization by GeoEngineers, Inc., shall be at the user's sole risk. Any unauthorized use of (or reliance on) this report shall release GeoEngineers from any liability resulting from such use (or reliance). Within the limitations of scope, schedule, and budget, GeoEngineers, Inc.'s respective services have been provided in a manner consistent with that level of care and skill exercised by members of the profession currently practicing in the same locality under similar conditions as this project. No warranty or other conditions, expressed or implied, should be understood. GeoEngineers, Inc. assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available.

Any electronic form, facsimile, or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

## REFERENCES

GeoEngineers, Inc. 2020. Interim Action Work Plan; Quiet Cove Site; Anacortes, Washington; Ecology Agreed Order No. DE 11346, GeoEngineers File No. 5147-024-07, January 9, 2020.

GeoEngineers, Inc. 2021a. Post-Interim Action Construction Groundwater Monitoring Plan; Quiet Cove Site; Anacortes, Washington; Ecology Agreed Order No. DE 11346, GeoEngineers File No. 5147-024-10, August 19, 2021.

GeoEngineers, Inc. 2021b. Interim Action Construction Completion Report; Quiet Cove Interim Action; Anacortes, Washington; Ecology Agreed Order No. DE 11346, GeoEngineers File No. 5147-024-10, June 22, 2021.

Groundwater monitoring activities will continue to be completed by the Port to evaluate post-interim action groundwater conditions.

Sincerely,

Port of Anacortes

Attachments:

Table 1. Post-Interim Action Groundwater Field Parameters, Groundwater Levels and Chemical Analytical Data

Figure 1. Vicinity Map

Figure 2. Groundwater Sampling Locations

Figure 3. Groundwater Summary - Gasoline-Range Hydrocarbons and Benzene

Figure 4. Groundwater Summary - Diesel- and Heavy Oil-Range Hydrocarbons

cc: Brad Tesch (1)  
Port of Anacortes

Tim Bishop (1)  
Chevron Environmental Management and Real Estate Co. (CEMREC)

## TABLES

**Table 1**

**Post-Interim Action Groundwater Field Parameters, Groundwater Levels and Chemical Analytical Data**  
 Quiet Cove Site  
 Anacortes, Washington

Sample Location <sup>1</sup>	Preliminary Screening Level <sup>2</sup>	MW-1					MW-1A					
		MW-1-7.1.14	MW-1-110917	MW-1-031918	MW-1-103118	MW-1-060519	MW-1A-102521	DUP-1-102521	MW-1A-020222	DUP-1-020222	MW-1A-051922	DUP-1-051922
Sample Identification	Date Sampled	07/01/14	11/09/17	03/19/18	10/31/18	06/05/19	10/25/21	10/25/21	02/02/22	02/02/22	05/19/22	05/19/22
<b>Field Measured Parameters</b>												
Top of Casing Elevation <sup>3</sup> (feet NAVD88)	NE	--	11.91	11.91	11.91	--	12.49	12.49	12.49	--	12.49	--
Depth to Groundwater <sup>4</sup> (feet)	NE	--	3.93	4.56	4.35	--	4.26	4.26	4.76	--	4.99	--
Groundwater Elevation (feet NAVD88)	NE	--	7.98	7.35	7.56	--	8.23	8.23	7.73	--	7.50	--
pH	NE	--	7.46	5.89	6.33	--	6.67	6.67	7.02	--	6.42	--
Conductivity (µS/cm)	NE	--	195	132	162.90	--	0.55	0.55	0.46	--	0.44	--
Turbidity (NTU)	NE	--	4.0	3.3	10.0	--	4.89	4.89	3.50	--	2.01	--
Dissolved Oxygen (mg/l)	NE	--	1.27	1.53	2.99	--	0.14	0.14	0.53	--	1.31	--
Temperature (°C)	NE	--	11.5	8.0	13.3	--	14.3	14.3	10.4	--	11.0	--
Total Dissolved Solids (mg/l)	NE	--	171.0	126.7	136.0	--	448.5	448.5	408.6	--	0.4	--
Oxidation Reduction Potential (mV)	NE	--	113.9	39.2	31.4	--	-35.1	-35.1	20.9	--	19.8	--
Salinity (ppt)	NE	--	0.13	0.09	0.10	--	0.34	0.34	0.31	--	0.30	--
<b>Conventionals</b>												
Alkalinity as CaCO3 (mg/L as CaCO3)	NE	--	--	--	<b>69</b>	<b>124</b>	<b>310</b>	<b>300</b>	<b>280</b>	<b>280</b>	<b>270</b>	<b>280</b>
Iron, Ferrous, Fe+2 (mg/L)	NE	--	--	--	<b>0.598</b>	<b>1.21</b>	<b>2.38 J</b>	<b>2.48</b>	<b>2.86</b>	<b>3.1</b>	<b>2.56</b>	<b>2.61</b>
Nitrate (mg/L)	NE	--	--	--	<b>0.501</b>	0.100 U	0.025 U	0.025 U	<b>0.549 J</b>	0.1 UJ	0.5 UJ	0.5 UJ
Sulfate (mg/L)	NE	--	--	--	<b>25.8</b>	<b>4.05</b>	<b>7.14</b>	<b>7.38</b>	<b>16.6</b>	<b>16.9</b>	<b>9.55</b>	<b>9.27</b>
Methane (ug/L)	NE	--	--	--	<b>264</b>	<b>1,000</b>	<b>730</b>	<b>780</b>	<b>800</b>	<b>780</b>	<b>510</b>	<b>540</b>
<b>Total Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	--	<b>2.42 J</b>	<b>0.86</b>	--	--	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
Cadmium	8.8	--	<b>0.0420 J</b>	0.100 U	--	--	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
Chromium	50	--	<b>0.520 J</b>	<b>0.323 J</b>	--	--	11 U	11 U	11 U	11 U	11 U	11 U
Lead	2.1	--	<b>0.403 J</b>	<b>0.361</b>	--	--	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Mercury	0.025	--	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
<b>Dissolved Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	--	<b>1.2</b>	<b>0.614</b>	--	--	3.0 U	3.0 U	3.0 U	3.0 U	3.3 U	3.0 U
Cadmium	8.8	--	<b>0.0360 J</b>	<b>0.100 U</b>	--	--	4.0 U	4.0 U	4.0 U	4.0 U	4.4 U	4.0 U
Chromium	50	--	<b>0.228 J</b>	<b>0.333 J</b>	--	--	10 U	10 U	10 U	10 U	11 U	10 U
Lead	2.1	--	0.100 U	<b>0.209</b>	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U
Manganese	NE	--	--	--	<b>48.1</b>	<b>102</b>	<b>120</b>	<b>120</b>	<b>100</b>	<b>100</b>	0.025 U	<b>73</b>
Mercury	0.025	--	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
<b>Petroleum Hydrocarbons by NWTPH-G/Dx (µg/L)</b>												
Gasoline-Range Hydrocarbons	800 <sup>6</sup>	100 U	100 U	100 U	--	--	100 U	100 U	100 U	100 U	100 U	100 U
Diesel-Range Hydrocarbons	500	<b>860</b>	<b>665 J</b>	<b>388</b>	<b>1,090</b>	<b>614</b>	<b>650</b>	<b>690</b>	<b>310</b>	<b>390</b>	<b>320</b>	<b>300</b>
Heavy Oil-Range Hydrocarbons	500	410 U	200 UJ	200 U	<b>359</b>	<b>249</b>	<b>450</b>	<b>600</b>	<b>260</b>	<b>310</b>	<b>270</b>	<b>260</b>
<b>Petroleum Hydrocarbons by NWTPH-Dx with SGC (µg/L)</b>												
Diesel-Range Hydrocarbons	500	--	--	--	100 U	--	200 U	210 U	210 U	210 U	200 U	200 U
Heavy Oil-Range Hydrocarbons	500	--	--	--	200 U	--	200 U	210 U	210 U	210 U	200 U	200 U
<b>Volatile Organic Compounds (VOCs) by EPA 8360 (µg/L)</b>												
1,2-Dibromoethane (EDB)	0.3	--	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,2-Dichloroethane (EDC)	4.20	--	0.20 U	0.20 U	--	--	0.35 U	0.35 U	0.20 U	0.20 U	1.0 U	1.0 U
Benzene	2.4	1 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Ethylbenzene	130	1 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
n-Hexane	8	--	0.20 U	0.20 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl t-butyl ether (MTBE)	610	--	0.50 U	0.50 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Toluene	520	1 U	0.20 U	0.20 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene, m-, p-	NE	--	--	--	--	--	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Xylene, o-	NE	--	--	--	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Total Xylenes	310	1 U	0.40 U	0.40 U	--	--	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U

**Notes:**

- <sup>1</sup> Sample locations are shown on Figure 2.
- <sup>2</sup> Preliminary screening levels referenced from the Post Interim Action Construction Groundwater Monitoring Plan (GeoEngineers 2021).
- <sup>3</sup> Vertical Datum is NAVD88 (US Survey Feet Units). Survey completed by Pacific Surveying and Engineering, Inc. on March 14, 2022.
- <sup>4</sup> Depth measured from top of casing.
- <sup>5</sup> The preliminary screening level for arsenic has been updated based on Ecology Publication 14-09-044 for Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022) for the Puget Sound Region.
- <sup>6</sup> Preliminary screening level for gasoline-range petroleum hydrocarbons is 800 µg/L when benzene is present and 1,000 µg/L when not present.

µS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Unit

mV = millivolt

C = Celsius

ppt = parts per thousand

mg/L = milligram per liter

µg/L = microgram per liter

µS/cm = microsiemens per centimeter

NE = Not Established

SGC = Silica Gel Cleanup

-- = Analyte Not Analyzed

U = The analyte was not detected at a concentration greater than the value identified.

J = The analyte was detected and the detected concentration is considered an estimate.

Yellow shading indicates that the identified concentration is greater than the preliminary screening level.

Blue shading indicates that the practical quantitation limit (PQL) is above screening level.

**Bold** font type indicates the analyte was detected at the reported concentration.

**Table 1**

**Post-Interim Action Groundwater Field Parameters, Groundwater Levels and Chemical Analytical Data**  
 Quiet Cove Site  
 Anacortes, Washington

Sample Location <sup>1</sup>	Preliminary Screening Level <sup>2</sup>	MW-2					MW-2A		MW-3			
		QC-MW-2-7.1.14	MW-2-110917	MW-2-032018	MW-2-103118	MW-2-060419	MW-2A-020722	MW-2A-051722	MW-3-101817	MW-3-032018	MW-3-103018	MW-3-060419
Sample Identification		7/1/2014	11/09/17	03/20/18	10/31/18	06/04/19	02/07/22	05/17/22	10/18/17	03/20/18	10/30/18	06/04/19
Date Sampled												
<b>Field Measured Parameters</b>												
Top of Casing Elevation <sup>3</sup> (feet NAVD88)	NE	--	12.01	12.01	12.01	--	12.20	12.20	12.42	12.42	12.42	--
Depth to Groundwater <sup>4</sup> (feet)	NE	--	5.12	5.48	5.70	--	4.93	4.98	6.32	5.82	6.21	--
Groundwater Elevation (feet NAVD88)	NE	--	6.89	6.53	6.31	--	7.27	7.22	6.10	6.60	6.21	--
pH	NE	--	7.41	6.21	6.55	--	6.88	6.71	6.36	6.21	6.61	--
Conductivity (µS/cm)	NE	--	493	362	452.70	--	0.47	0.53	740	520	1457.00	--
Turbidity (NTU)	NE	--	3.8	4.8	7.63	--	17.1	108.0	9.3	6.8	8.5	--
Dissolved Oxygen (mg/l)	NE	--	0.28	2.02	1.07	--	3.35	1.43	0.40	0.11	0.76	--
Temperature (°C)	NE	--	13.5	9.8	14.1	--	9.3	11.2	15.0	10.9	15.3	--
Total Dissolved Solids (mg/l)	NE	--	411.5	332.8	367.0	--	438.3	0.5	591.5	468.0	1170.0	--
Oxidation Reduction Potential (mV)	NE	--	93.2	70.1	-22.4	--	16.2	-8.8	75.6	64.9	-78.7	--
Salinity (ppt)	NE	--	0.31	0.24	0.27	--	0.33	0.35	0.45	0.35	0.92	--
<b>Conventionals</b>												
Alkalinity as CaCO3 (mg/L as CaCO3)	NE	--	--	--	<b>253</b>	<b>326</b>	<b>310</b>	<b>320</b>	--	--	<b>406</b>	<b>234</b>
Iron, Ferrous, Fe+2 (mg/L)	NE	--	--	--	<b>4.21</b>	--	<b>1.01</b>	<b>1.96</b>	--	--	<b>3.05</b>	--
Nitrate (mg/L)	NE	--	--	--	<b>1.73</b>	<b>0.119</b>	<b>0.584 J</b>	<b>1.12</b>	--	--	0.100 U	<b>0.100 U</b>
Sulfate (mg/L)	NE	--	--	--	<b>20.7</b>	<b>6.11</b>	<b>54.5</b>	<b>43.6</b>	--	--	<b>24.2</b>	<b>635</b>
Methane (ug/L)	NE	--	--	--	<b>2,830</b>	<b>2,660</b>	<b>220</b>	<b>180</b>	--	--	<b>9,880</b>	<b>6,000</b>
<b>Total Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	--	<b>7.69</b>	<b>5.69</b>	--	--	<b>4.6</b>	<b>5.3</b>	--	<b>1.84</b>	<b>2.51</b>	--
Cadmium	8.8	--	<b>0.0410 J</b>	<b>0.0350 J</b>	--	--	4.4 U	4.4 U	--	<b>0.0710 J</b>	<b>0.0470 J</b>	--
Chromium	50	--	<b>2.23</b>	<b>1.28</b>	--	--	11 U	11 U	--	<b>7.32</b>	<b>4.9</b>	--
Lead	2.1	--	<b>0.261</b>	<b>0.204</b>	--	--	1.1 U	1.1 U	--	<b>0.227</b>	<b>0.276</b>	--
Mercury	0.025	--	0.020 U	0.020 U	--	--	0.025 U	0.025 U	--	0.020 U	0.020 U	--
<b>Dissolved Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	--	<b>7.57</b>	<b>4.66</b>	--	--	<b>3.8</b>	<b>4.5</b>	<b>1.13</b>	<b>1.42</b>	--	--
Cadmium	8.8	--	0.100 U	0.100 U	--	--	4.0 U	4.0 U	0.100 U	0.100 U	--	--
Chromium	50	--	<b>1.58</b>	<b>0.99</b>	--	--	10 U	10 U	<b>6.28</b>	<b>4.55</b>	--	--
Lead	2.1	--	0.100 U	0.0860 J	--	--	1.0 U	1.0 U	<b>0.0950 J</b>	<b>0.113</b>	--	--
Manganese	NE	--	--	--	<b>156</b>	<b>238</b>	<b>160</b>	<b>130</b>	--	--	<b>292</b>	--
Mercury	0.025	--	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.020 U	0.020 U	--	--
<b>Petroleum Hydrocarbons by NWTPH-G/Dx (µg/L)</b>												
Gasoline-Range Hydrocarbons	800 <sup>6</sup>	<b>110</b>	100 U	100 U	--	--	100 U	100 U	<b>234</b>	100 U	--	--
Diesel-Range Hydrocarbons	500	<b>2,100</b>	<b>3,530</b>	<b>1,600</b>	<b>1,210</b>	<b>2,600</b>	210 U	200 U	<b>1,940</b>	<b>1,270</b>	<b>1,420</b>	<b>1,080</b>
Heavy Oil-Range Hydrocarbons	500	<b>980</b>	<b>1,080</b>	<b>700</b>	<b>616</b>	<b>1,210</b>	210 U	200 U	<b>461</b>	<b>279</b>	200 U	<b>202</b>
<b>Petroleum Hydrocarbons by NWTPH-Dx with SGC (µg/L)</b>												
Diesel-Range Hydrocarbons	500	--	--	--	100 U	--	210 U	200 U	--	--	100 U	--
Heavy Oil-Range Hydrocarbons	500	--	--	--	200 U	--	210 U	200 U	--	--	200 U	--
<b>Volatile Organic Compounds (VOCs) by EPA 8360 (µg/L)</b>												
1,2-Dibromoethane (EDB)	0.3	--	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	--	--
1,2-Dichloroethane (EDC)	4.20	--	0.20 U	0.20 U	--	--	0.20 U	1.0 U	0.20 U	0.20 U	--	--
Benzene	2.4	1 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	--	--
Ethylbenzene	130	1 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	--	--
n-Hexane	8	--	0.20 U	0.20 U	--	--	1.0 U	1.0 U	0.20 U	0.20 U	--	--
Methyl t-butyl ether (MTBE)	610	--	0.50 U	0.50 U	--	--	0.20 U	0.20 U	0.50 U	0.50 U	--	--
Toluene	520	1 U	0.20 U	0.20 U	--	--	1.0 U	1.0 U	<b>0.04 J</b>	0.20 U	--	--
Xylene, m-, p-	NE	--	--	--	--	--	0.40 U	0.40 U	--	--	--	--
Xylene, o-	NE	--	--	--	--	--	0.20 U	0.20 U	--	--	--	--
Total Xylenes	310	1 U	0.40 U	0.40 U	--	--	0.40 U	0.40 U	<b>0.25</b>	0.40 U	--	--

**Notes:**

- <sup>1</sup> Sample locations are shown on Figure 2.
- <sup>2</sup> Preliminary screening levels referenced from the Post Interim Action Construction Groundwater Monitoring Plan (GeoEngineers 2021).
- <sup>3</sup> Vertical Datum is NAVD88 (US Survey Feet Units). Survey completed by Pacific Surveying and Engineering, Inc. on March 14, 2022.
- <sup>4</sup> Depth measured from top of casing.
- <sup>5</sup> The preliminary screening level for arsenic has been updated based on Ecology Publication 14-09-044 for Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022) for the Puget Sound Region.
- <sup>6</sup> Preliminary screening level for gasoline-range petroleum hydrocarbons is 800 µg/L when benzene is present and 1,000 µg/L when not present.

µS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Unit

mV = millivolt

C = Celsius

ppt = parts per thousand

mg/L = milligram per liter

µg/L = microgram per liter

µS/cm = microsiemens per centimeter

NE = Not Established

SGC = Silica Gel Cleanup

-- = Analyte Not Analyzed

U = The analyte was not detected at a concentration greater than the value identified.

J = The analyte was detected and the detected concentration is considered an estimate.

Yellow shading indicates that the identified concentration is greater than the preliminary screening level.

Blue shading indicates that the practical quantitation limit (PQL) is above screening level.

**Bold** font type indicates the analyte was detected at the reported concentration.

**Table 1**

**Post-Interim Action Groundwater Field Parameters, Groundwater Levels and Chemical Analytical Data**  
 Quiet Cove Site  
 Anacortes, Washington

Sample Location <sup>1</sup>	Preliminary Screening Level <sup>2</sup>	MW-3			MW-4							
		MW-3_102521	MW-3_020722	MW-3_051722	QC-MW-4-7.1.14	MW-4_101817	MW-4_031918	MW-4_102918	MW-4_060519	MW-4_102521	MW-4_020322	MW-4_051722
Sample Identification	Date Sampled	10/25/21	02/07/22	05/17/22	7/1/2014	10/18/17	03/19/18	10/29/18	06/05/19	10/25/21	02/03/22	05/17/22
<b>Field Measured Parameters</b>												
Top of Casing Elevation <sup>3</sup> (feet NAVD88)	NE	12.33	12.33	12.33	--	12.43	12.43	12.43	--	12.34	12.34	12.34
Depth to Groundwater <sup>4</sup> (feet)	NE	4.91	5.78	5.91	--	5.68	5.62	5.71	--	4.54	6.30	6.01
Groundwater Elevation (feet NAVD88)	NE	7.42	6.55	6.42	--	6.75	6.81	6.72	--	7.80	6.04	6.33
pH	NE	6.51	5.90	5.98	--	6.15	6.05	6.04	--	6.49	8.32	6.27
Conductivity (µS/cm)	NE	1.38	0.26	0.35	--	860	367	528.00	--	0.63	0.16	0.74
Turbidity (NTU)	NE	12.1	14.2	104.0	--	5.0	8.5	10.5	--	5.41	14.20	2.98
Dissolved Oxygen (mg/l)	NE	0.11	1.65	0.71	--	0.06	0.16	0.90	--	0.55	5.01	0.84
Temperature (°C)	NE	15.4	10.8	11.5	--	15.4	11.1	15.2	--	15.5	7.8	11.9
Total Dissolved Solids (mg/l)	NE	1150.4	231.4	0.3	--	682.5	324.6	423.0	--	500.5	156.6	0.6
Oxidation Reduction Potential (mV)	NE	-8.5	49.8	98.1	--	66.5	76.9	-82.6	--	70.1	35.1	30.8
Salinity (ppt)	NE	0.91	0.17	0.23	--	0.52	0.24	0.32	--	0.38	0.11	0.49
<b>Conventionals</b>												
Alkalinity as CaCO3 (mg/L as CaCO3)	NE	<b>190</b>	<b>130</b>	<b>150</b>	--	--	--	<b>168</b>	<b>192</b>	<b>200</b>	<b>190</b>	<b>240</b>
Iron, Ferrous, Fe+2 (mg/L)	NE	<b>0.936</b>	<b>0.595</b>	<b>0.978</b>	--	--	--	<b>16.7</b>	<b>12.7</b>	<b>0.152</b>	<b>3.38</b>	<b>10.9</b>
Nitrate (mg/L)	NE	<b>0.234</b>	<b>1.3 J</b>	<b>0.57 J</b>	--	--	--	<b>0.454</b>	0.100 U	<b>1.28</b>	0.5 U	0.5 UJ
Sulfate (mg/L)	NE	<b>91</b>	<b>33.5</b>	<b>38.1</b>	--	--	--	<b>72.2</b>	<b>51.8</b>	<b>42.6</b>	<b>6.82</b>	<b>5.33</b>
Methane (ug/L)	NE	<b>710</b>	<b>140</b>	<b>94</b>	--	--	--	<b>7,560</b>	<b>2,920</b>	<b>420</b>	<b>1,700</b>	<b>2,300 J</b>
<b>Total Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	<b>3.7</b>	3.3 U	<b>3.3 U</b>	--	<b>1.5</b>	<b>1.97</b>	--	--	3.3 U	3.3 U	3.3 U
Cadmium	8.8	4.4 U	4.4 U	<b>4.4 U</b>	--	0.500 U	0.118	--	--	4.4 U	4.4 U	4.4 U
Chromium	50	11 U	11 U	<b>11 U</b>	--	<b>3.29</b>	<b>0.394 J</b>	--	--	11 U	11 U	11 U
Lead	2.1	1.1 U	1.1 U	<b>1.1 U</b>	--	<b>3.75</b>	<b>0.0850 J</b>	--	--	1.1 U	1.1 U	1.1 U
Mercury	0.025	0.025 U	0.025 U	<b>0.025 U</b>	--	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.025 U
<b>Dissolved Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	<b>3.2</b>	3.0 U	<b>3.0 U</b>	--	<b>1.13</b>	<b>1.42</b>	--	--	3.0 U	3.0 U	3.0 U
Cadmium	8.8	4.0 U	4.0 U	<b>4.0 U</b>	--	0.100 U	0.100 U	--	--	4.0 U	4.0 U	4.0 U
Chromium	50	10 U	10 U	<b>10 U</b>	--	<b>6.28</b>	<b>4.55</b>	--	--	10 U	10 U	10 U
Lead	2.1	1.0 U	1.0 U	<b>1.0 U</b>	--	<b>0.0950 J</b>	<b>0.113</b>	--	--	1.0 U	1.0 U	1.0 U
Manganese	NE	<b>59</b>	<b>24</b>	<b>26</b>	--	--	--	<b>2,570</b>	<b>1,800</b>	<b>66</b>	<b>1,600</b>	<b>1,400</b>
Mercury	0.025	0.025 U	0.025 U	<b>0.025 U</b>	--	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.025 U
<b>Petroleum Hydrocarbons by NWTPH-G/Dx (µg/L)</b>												
Gasoline-Range Hydrocarbons	800 <sup>6</sup>	100 U	100 U	101 U	<b>510</b>	<b>447</b>	100 U	--	--	100 U	100 U	100 U
Diesel-Range Hydrocarbons	500	<b>600</b>	<b>580</b>	<b>420</b>	<b>1,300 J</b>	<b>1,460</b>	<b>293</b>	<b>584</b>	<b>391</b>	<b>210</b>	210 U	<b>260</b>
Heavy Oil-Range Hydrocarbons	500	<b>460</b>	<b>270 J</b>	<b>230</b>	410 U	<b>285</b>	200 U	200 U	200 U	<b>230</b>	210 U	200 U
<b>Petroleum Hydrocarbons by NWTPH-Dx with SGC (µg/L)</b>												
Diesel-Range Hydrocarbons	500	220 U	220 U	<b>200 U</b>	--	--	--	100 U	--	200 U	210 U	200 U
Heavy Oil-Range Hydrocarbons	500	220 U	220 U	<b>200 U</b>	--	--	--	200 U	--	200 U	210 U	200 U
<b>Volatile Organic Compounds (VOCs) by EPA 8360 (µg/L)</b>												
1,2-Dibromoethane (EDB)	0.3	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U
1,2-Dichloroethane (EDC)	4.20	0.35 U	0.20 U	1.0 U	--	0.20 U	0.20 U	--	--	0.35 U	0.20 U	1.0 U
Benzene	2.4	0.20 U	0.20 U	0.20 U	1 U	<b>0.11 J</b>	0.20 U	--	--	0.20 U	0.20 U	0.20 U
Ethylbenzene	130	0.20 U	0.20 U	0.20 U	1 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U
n-Hexane	8	1.0 U	1.0 U	1.0 U	--	0.20 U	0.20 U	--	--	1.0 U	1.0 U	1.0 U
Methyl t-butyl ether (MTBE)	610	0.20 U	0.20 U	0.20 U	--	0.50 U	0.50 U	--	--	0.20 U	0.20 U	0.20 U
Toluene	520	1.0 U	1.0 U	1.0 U	1 U	<b>0.09 J</b>	0.20 U	--	--	1.0 U	1.0 U	1.0 U
Xylene, m-, p-	NE	0.40 U	0.40 U	0.40 U	--	--	--	--	--	0.40 U	0.40 U	0.40 U
Xylene, o-	NE	0.20 U	0.20 U	0.20 U	--	--	--	--	--	0.20 U	0.20 U	0.20 U
Total Xylenes	310	0.40 U	0.40 U	0.40 U	1 U	<b>0.21</b>	0.40 U	--	--	0.40 U	0.40 U	0.40 U

**Notes:**

- <sup>1</sup> Sample locations are shown on Figure 2.
- <sup>2</sup> Preliminary screening levels referenced from the Post Interim Action Construction Groundwater Monitoring Plan (GeoEngineers 2021).
- <sup>3</sup> Vertical Datum is NAVD88 (US Survey Feet Units). Survey completed by Pacific Surveying and Engineering, Inc. on March 14, 2022.
- <sup>4</sup> Depth measured from top of casing.
- <sup>5</sup> The preliminary screening level for arsenic has been updated based on Ecology Publication 14-09-044 for Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022) for the Puget Sound Region.
- <sup>6</sup> Preliminary screening level for gasoline-range petroleum hydrocarbons is 800 µg/L when benzene is present and 1,000 µg/L when not present.

µS/cm = microsiemens per centimeter  
 NTU = Nephelometric Turbidity Unit  
 mV = millivolt  
 C = Celsius  
 ppt = parts per thousand  
 mg/L = milligram per liter  
 µg/L = microgram per liter

µS/cm = microsiemens per centimeter  
 NE = Not Established  
 SGC = Silica Gel Cleanup  
 -- = Analyte Not Analyzed

U = The analyte was not detected at a concentration greater than the value identified.  
 J = The analyte was detected and the detected concentration is considered an estimate.

Yellow shading indicates that the identified concentration is greater than the preliminary screening level.  
 Blue shading indicates that the practical quantitation limit (PQL) is above screening level.

**Bold** font type indicates the analyte was detected at the reported concentration.



**Table 1**

**Post-Interim Action Groundwater Field Parameters, Groundwater Levels and Chemical Analytical Data**  
 Quiet Cove Site  
 Anacortes, Washington

Sample Location <sup>1</sup>	Preliminary Screening Level <sup>2</sup>	MW_8							MW-13			MW-14
		MW-8-110917	MW-8-031918	MW-8-102918	MW-8-060519	MW-8-102521	MW-8-020122	MW-8-051822	MW-13-102521	MW-13-020222	MW-13-051822	MW-14-102521
Sample Identification	Date Sampled	11/09/17	03/19/18	10/29/18	6/5/19	10/25/21	02/01/22	05/18/22	10/25/21	02/02/22	05/18/22	10/25/21
<b>Field Measured Parameters</b>												
Top of Casing Elevation <sup>3</sup> (feet NAVD88)	NE	13.13	13.13	13.13	--	13.58	13.58	13.58	11.94	11.94	11.94	12.14
Depth to Groundwater <sup>4</sup> (feet)	NE	4.60	4.89	5.97	--	4.06	4.50	5.11	3.91	4.56	4.84	1.70
Groundwater Elevation (feet NAVD88)	NE	8.53	8.24	7.16	--	9.52	9.08	8.47	8.03	7.38	7.10	10.44
pH	NE	7.26	6.49	6.78	--	6.91	6.41	6.38	7.12	7.15	6.57	7.96
Conductivity (µS/cm)	NE	567	283	324.60	--	0.37	0.36	0.37	0.52	0.37	0.36	0.51
Turbidity (NTU)	NE	5.7	2.7	120.61	--	15.1	9.1	10.20	3.91	4.25	6.39	14.3
Dissolved Oxygen (mg/l)	NE	0.28	0.22	0.87	--	0.16	1.09	0.82	0.16	0.68	0.75	1.91
Temperature (°C)	NE	15.0	10.3	16.0	--	15.8	10.6	12.2	14.1	9.3	10.8	13.8
Total Dissolved Solids (mg/l)	NE	294.5	260.0	259.0	--	295.1	331.4	0.2	429.0	342.6	0.3	423.0
Oxidation Reduction Potential (mV)	NE	30.8	19.4	-65.0	--	-40.1	62.9	-29.5	-42.3	29.8	-11.8	137.4
Salinity (ppt)	NE	0.22	0.19	0.19	--	0.22	0.25	0.21	0.32	0.26	0.24	0.32
<b>Conventionals</b>												
Alkalinity as CaCO3 (mg/L as CaCO3)	NE	--	--	<b>185</b>	<b>238</b>	<b>210</b>	<b>260</b>	<b>240</b>	<b>270</b>	<b>220</b>	<b>110</b>	<b>120</b>
Iron, Ferrous, Fe+2 (mg/L)	NE	--	--	<b>5.61</b>	<b>17.7</b>	<b>15</b>	<b>24.3</b>	<b>24.5</b>	<b>1.66</b>	<b>2.92 J</b>	<b>0.768</b>	0.1 U
Nitrate (mg/L)	NE	--	--	<b>0.242</b>	0.100 U	<b>0.098</b>	<b>1.14</b>	0.5 U	<b>0.053</b>	0.1 U	<b>1.21</b>	<b>1.55</b>
Sulfate (mg/L)	NE	--	--	<b>10.5</b>	<b>4.23</b>	<b>4.69</b>	<b>9.08</b>	<b>3.34</b>	<b>56.6</b>	<b>40.2</b>	<b>28.1</b>	<b>176</b>
Methane (ug/L)	NE	--	--	<b>1,000</b>	<b>1920</b>	<b>430</b>	<b>1,000</b>	<b>1,400</b>	<b>440</b>	<b>490</b>	<b>300</b>	<b>3.9</b>
<b>Total Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	<b>5.96</b>	<b>6.75</b>	--	--	<b>6.9</b>	<b>6.6</b>	<b>6.8</b>	<b>3.6</b>	3.3 U	<b>6.8</b>	3.3 U
Cadmium	8.8	0.100 U	0.100 U	--	--	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
Chromium	50	<b>1.92</b>	<b>1.09</b>	--	--	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Lead	2.1	<b>0.164</b>	<b>0.143</b>	--	--	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Mercury	0.025	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
<b>Dissolved Metals by EPA 200.8/1631 (µg/L)</b>												
Arsenic	8 <sup>5</sup>	<b>6.29</b>	<b>3.91</b>	--	--	<b>5.6</b>	<b>3.5</b>	<b>5.3</b>	3.0 U	3.0 U	3.0 U	3.0 U
Cadmium	8.8	0.100 U	0.100 U	--	--	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Chromium	50	<b>1.41</b>	<b>1.13</b>	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead	2.1	0.100 U	0.100 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Manganese	NE	--	--	<b>1,130</b>	<b>2,450</b>	<b>2,000</b>	<b>2,500</b>	<b>2,300</b>	<b>190</b>	<b>150</b>	<b>88</b>	<b>320</b>
Mercury	0.025	0.020 U	0.020 U	--	--	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
<b>Petroleum Hydrocarbons by NWTPH-G/Dx (µg/L)</b>												
Gasoline-Range Hydrocarbons	800 <sup>6</sup>	<b>251</b>	<b>109</b>	<b>117</b>	<b>970</b>	<b>150</b>	<b>120</b>	<b>320 J</b>	100 U	100 U	100 U	100 U
Diesel-Range Hydrocarbons	500	<b>828</b>	<b>455</b>	<b>415</b>	<b>881</b>	<b>530</b>	<b>650</b>	<b>700</b>	<b>470</b>	<b>210</b>	200 U	210 U
Heavy Oil-Range Hydrocarbons	500	<b>342</b>	200 U	200 U	<b>264</b>	<b>400</b>	<b>730</b>	<b>380</b>	<b>560</b>	<b>230</b>	<b>300</b>	210 U
<b>Petroleum Hydrocarbons by NWTPH-Dx with SGC (µg/L)</b>												
Diesel-Range Hydrocarbons	500	--	--	100 U	--	200 U	200 U	200 U	200 U	210 U	200 U	210 U
Heavy Oil-Range Hydrocarbons	500	--	--	200 U	--	200 U	200 U	200 U	200 U	210 U	200 U	210 U
<b>Volatile Organic Compounds (VOCs) by EPA 8360 (µg/L)</b>												
1,2-Dibromoethane (EDB)	0.3	0.20 U	0.20 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,2-Dichloroethane (EDC)	4.20	0.20 U	<b>0.15 J</b>	--	--	0.35 U	0.20 U	1.0 U	<b>0.44</b>	<b>0.32</b>	1.0 U	0.35 U
Benzene	2.4	<b>5.83</b>	<b>3.03</b>	<b>2.19</b>	<b>13.9</b>	<b>7.4</b>	<b>6.3</b>	<b>19</b>	<b>4</b>	<b>2.7</b>	<b>3.3</b>	0.20 U
Ethylbenzene	130	<b>0.24</b>	0.20 U	0.06 J	<b>1.51</b>	0.20 U	0.20 U	<b>0.61</b>	0.20 U	0.20 U	0.20 U	0.20 U
n-Hexane	8	<b>4.4</b>	<b>1.32</b>	--	--	<b>1.3</b>	1.0 U	<b>8.4</b>	1.0 U	1.0 U	1.0 U	1.0 U
Methyl t-butyl ether (MTBE)	610	0.50 U	0.50 U	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Toluene	520	<b>0.54</b>	<b>0.12 J</b>	0.16 J	<b>3.35</b>	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene, m-, p-	NE	--	--	--	--	0.40 U	0.40 U	<b>0.78</b>	0.40 U	0.40 U	0.40 U	0.40 U
Xylene, o-	NE	--	--	--	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Total Xylenes	310	<b>0.64</b>	<b>0.11</b>	<b>0.19</b>	<b>1.56</b>	0.40 U	0.40 U	<b>0.78</b>	0.40 U	0.40 U	0.40 U	0.40 U

**Notes:**

- <sup>1</sup> Sample locations are shown on Figure 2.
- <sup>2</sup> Preliminary screening levels referenced from the Post Interim Action Construction Groundwater Monitoring Plan (GeoEngineers 2021).
- <sup>3</sup> Vertical Datum is NAVD88 (US Survey Feet Units). Survey completed by Pacific Surveying and Engineering, Inc. on March 14, 2022.
- <sup>4</sup> Depth measured from top of casing.
- <sup>5</sup> The preliminary screening level for arsenic has been updated based on Ecology Publication 14-09-044 for Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022) for the Puget Sound Region.
- <sup>6</sup> Preliminary screening level for gasoline-range petroleum hydrocarbons is 800 µg/L when benzene is present and 1,000 µg/L when not present.

µS/cm = microsiemens per centimeter  
 NTU = Nephelometric Turbidity Unit  
 mV = millivolt  
 C = Celsius  
 ppt = parts per thousand  
 mg/L = milligram per liter  
 µg/L = microgram per liter  
 µS/cm = microsiemens per centimeter  
 NE = Not Established  
 SGC = Silica Gel Cleanup  
 -- = Analyte Not Analyzed  
 U = The analyte was not detected at a concentration greater than the value identified.  
 J = The analyte was detected and the detected concentration is considered an estimate.

Yellow shading indicates that the identified concentration is greater than the preliminary screening level.  
 Blue shading indicates that the practical quantitation limit (PQL) is above screening level.  
**Bold** font type indicates the analyte was detected at the reported concentration.

**Table 1**

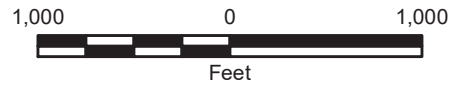
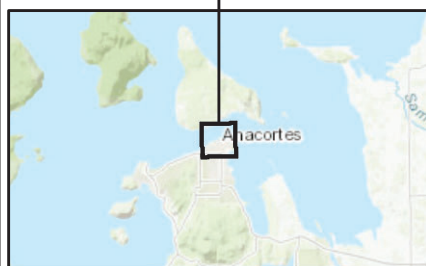
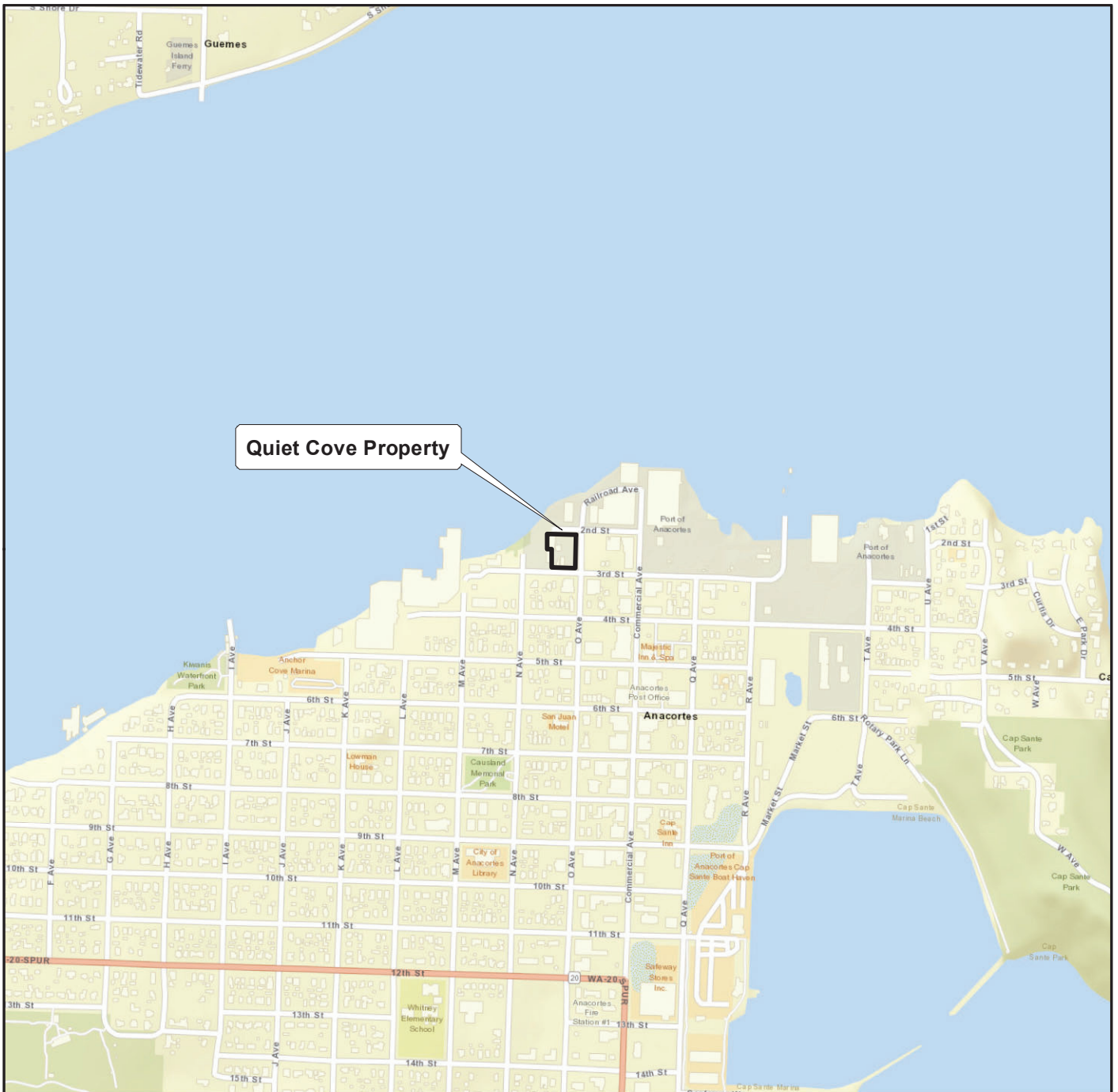
**Post-Interim Action Groundwater Field Parameters, Groundwater Levels and Chemical Analytical Data**  
 Quiet Cove Site  
 Anacortes, Washington

Sample Location <sup>1</sup>	Preliminary Screening Level <sup>2</sup>	MW-14		MW-15		
		MW-14_020222	MW-14_051822	MW-15_102521	MW-15_020322	MW-15_051722
Sample Identification	Date Sampled	02/02/22	05/18/22	10/25/21	02/03/22	05/17/22
<b>Field Measured Parameters</b>						
Top of Casing Elevation <sup>3</sup> (feet NAVD88)	NE	12.14	12.14	12.20	11.20	11.20
Depth to Groundwater <sup>4</sup> (feet)	NE	4.76	10.05	4.38	4.78	5.41
Groundwater Elevation (feet NAVD88)	NE	7.38	2.09	7.82	6.42	5.79
pH	NE	6.67	7.64	6.23	6.63	6.31
Conductivity (µS/cm)	NE	0.93	0.24	1.73	1.33	1.51
Turbidity (NTU)	NE	12.8	11.20	4.44	10.90	4.42
Dissolved Oxygen (mg/l)	NE	1.48	3.83	0.18	0.52	0.89
Temperature (°C)	NE	10.8	11.4	14.5	8.6	120.0
Total Dissolved Solids (mg/l)	NE	832.0	0.2	1384.9	1258.5	1.3
Oxidation Reduction Potential (mV)	NE	126.8	57.8	-18.0	47.1	-38.2
Salinity (ppt)	NE	0.64	0.15	1.12	0.99	1.03
<b>Conventionals</b>						
Alkalinity as CaCO <sub>3</sub> (mg/L as CaCO <sub>3</sub> )	NE	<b>100</b>	<b>110</b>	<b>570</b>	<b>440</b>	<b>390</b>
Iron, Ferrous, Fe+2 (mg/L)	NE	<b>0.29</b>	<b>0.768</b>	<b>51.2</b>	<b>53.4</b>	<b>52.2</b>
Nitrate (mg/L)	NE	<b>0.979</b>	<b>1.21</b>	0.025 U	<b>0.415 J</b>	1 UJ
Sulfate (mg/L)	NE	<b>19</b>	<b>28.1</b>	<b>1.48</b>	<b>4.13</b>	<b>5.53 J</b>
Methane (ug/L)	NE	<b>28</b>	<b>300</b>	<b>10,000</b>	<b>14,000</b>	<b>7900 J</b>
<b>Total Metals by EPA 200.8/1631 (µg/L)</b>						
Arsenic	8 <sup>5</sup>	<b>6.2</b>	<b>5</b>	<b>6.2</b>	3.3 U	<b>4.4</b>
Cadmium	8.8	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
Chromium	50	11 U	11 U	11 U	11 U	11 U
Lead	2.1	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Mercury	0.025	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
<b>Dissolved Metals by EPA 200.8/1631 (µg/L)</b>						
Arsenic	8 <sup>5</sup>	<b>4.7</b>	<b>3.7</b>	<b>5.4</b>	3.0 U	<b>4.3</b>
Cadmium	8.8	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Chromium	50	10 U	10 U	10 U	10 U	10 U
Lead	2.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Manganese	NE	<b>55</b>	<b>11</b>	<b>3,900</b>	<b>4,800</b>	<b>5,300</b>
Mercury	0.025	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
<b>Petroleum Hydrocarbons by NWTPH-G/Dx (µg/L)</b>						
Gasoline-Range Hydrocarbons	800 <sup>6</sup>	100 U	100 U	100 U	110 U	240 U
Diesel-Range Hydrocarbons	500	210 U	200 U	<b>1,600</b>	<b>1,200</b>	<b>1,400</b>
Heavy Oil-Range Hydrocarbons	500	210 U	200 U	<b>1,100</b>	<b>520</b>	<b>530</b>
<b>Petroleum Hydrocarbons by NWTPH-Dx with SGC (µg/L)</b>						
Diesel-Range Hydrocarbons	500	210 U	200 U	210 U	210 U	200 U
Heavy Oil-Range Hydrocarbons	500	210 U	200 U	210 U	210 U	200 U
<b>Volatile Organic Compounds (VOCs) by EPA 8360 (µg/L)</b>						
1,2-Dibromoethane (EDB)	0.3	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,2-Dichloroethane (EDC)	4.20	0.20 U	1.0 U	0.35 U	0.20 U	1.0 U
Benzene	2.4	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Ethylbenzene	130	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
n-Hexane	8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl t-butyl ether (MTBE)	610	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Toluene	520	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene, m-, p-	NE	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Xylene, o-	NE	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Total Xylenes	310	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U

**Notes:**

- <sup>1</sup> Sample locations are shown on Figure 2.
  - <sup>2</sup> Preliminary screening levels referenced from the Post Interim Action Construction Groundwater Monitoring Plan (GeoEngineers 2021).
  - <sup>3</sup> Vertical Datum is NAVD88 (US Survey Feet Units). Survey completed by Pacific Surveying and Engineering, Inc. on March 14, 2022.
  - <sup>4</sup> Depth measured from top of casing.
  - <sup>5</sup> The preliminary screening level for arsenic has been updated based on Ecology Publication 14-09-044 for Natural Background Groundwater Arsenic Concentrations in Washington State (Ecology 2022) for the Puget Sound Region.
  - <sup>6</sup> Preliminary screening level for gasoline-range petroleum hydrocarbons is 800 µg/L when benzene is present and 1,000 µg/L when not present.
- µS/cm = microsiemens per centimeter  
 NTU = Nephelometric Turbidity Unit  
 mV = millivolt  
 C = Celsius  
 ppt = parts per thousand  
 mg/L = milligram per liter  
 µg/L = microgram per liter  
 µS/cm = microseimens per centimeter  
 NE = Not Established  
 SGC = Silica Gel Cleanup  
 -- = Analyte Not Analyzed  
 U = The analyte was not detected at a concentration greater than the value identified.  
 J = The analyte was detected and the detected concentration is considered an estimate.
- Yellow shading indicates that the identified concentration is greater than the preliminary screening level.  
 Blue shading indicates that the practical quantitation limit (PQL) is above screening level.  
**Bold** font type indicates the analyte was detected at the reported concentration.

## FIGURES



**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Data 2013.  
 Transverse Mercator, Zone 10 N North, North American Datum 1983  
 North arrow oriented to grid north

<b>Vicinity Map</b>	
Quiet Cove Site Anacortes, Washington	
<b>GEOENGINEERS</b>	<b>Figure 1</b>



**Legend**

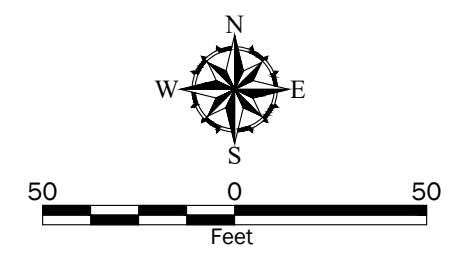
- Port of Anacortes Properties at Quiet Cove Site
- Contour (Feet, NAVD 88)
- Interim Action Remedial Excavation Horizontal Limits
- Final Interim Action Excavation Sidewalls with the Presence of Petroleum Hydrocarbon-Related Contamination Exceeding Site Remediation Objectives
- Existing Monitoring Well Location
- Monitoring Well Decommissioned During Interim Action Construction
- Inferred groundwater flow direction
- Post Interim Action Groundwater Monitoring Location

- Notes:**
1. Interim action excavation limit based on surveys completed by Larry Steele & Associates, Inc. Dated 11/02/2020.
  2. The locations of all features shown are approximate.
  3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Base survey by Sound Development Group on 10/11/2017  
 Imagery from Google Earth Pro dated 8/15/2020.

Horizontal Datum: NAD83 Washington State Planes, North Zone, US Foot

Vertical Datum: North American Vertical Datum, 1988, US Foot



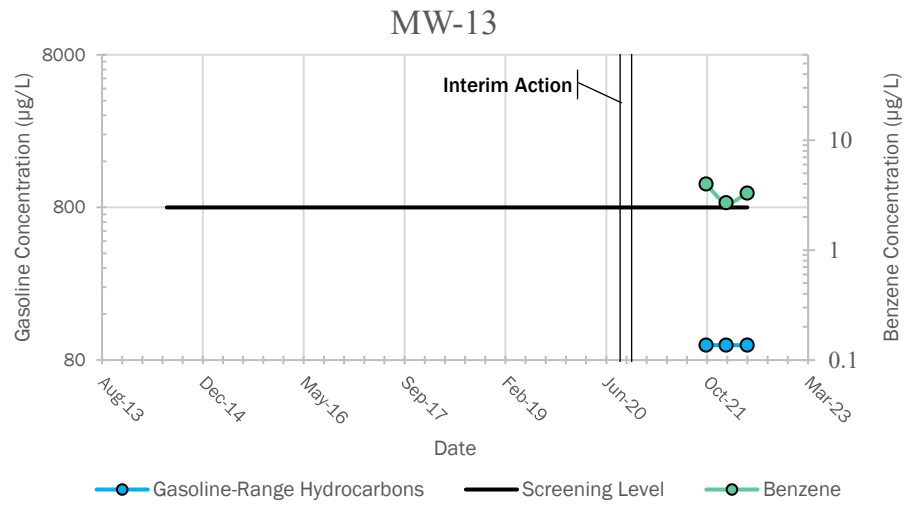
**Groundwater Sampling Locations**

Quiet Cove Site  
Anacortes, Washington

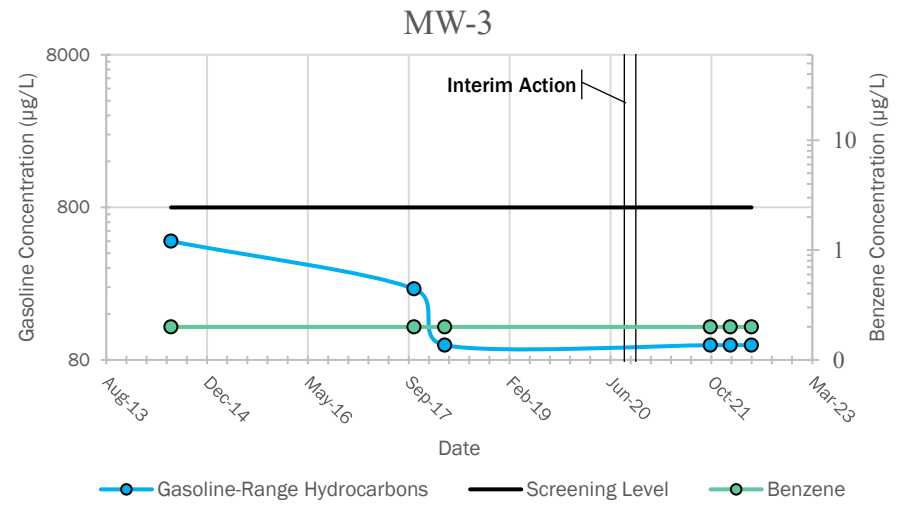
**GEOENGINEERS**

Figure 2

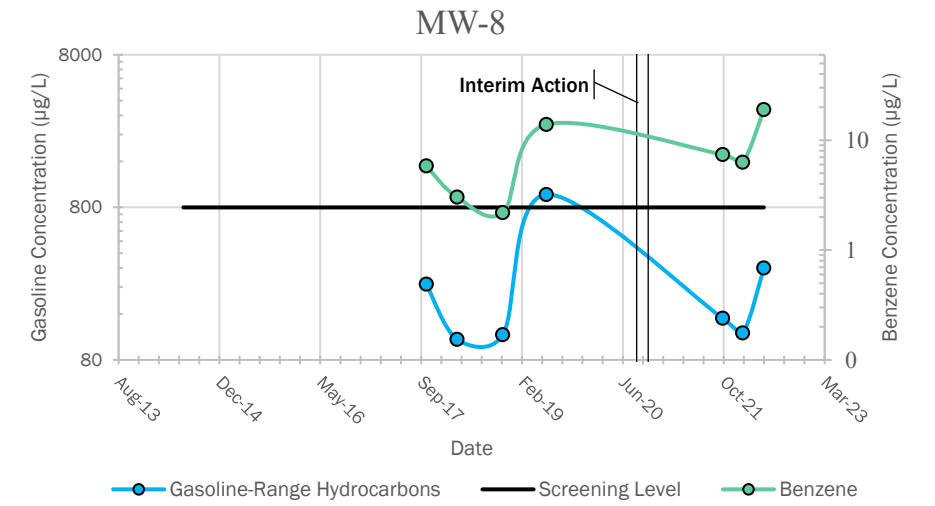
**Shoreline Area Monitoring Wells**



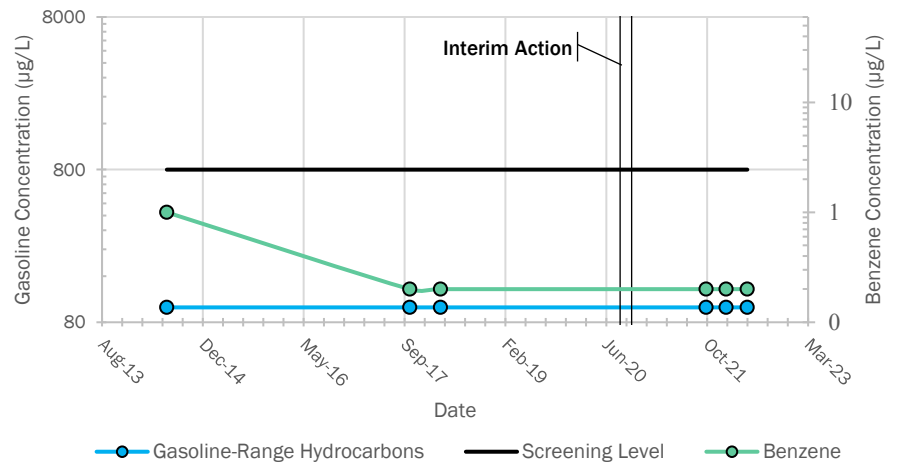
**2nd Street Area Monitoring Wells**



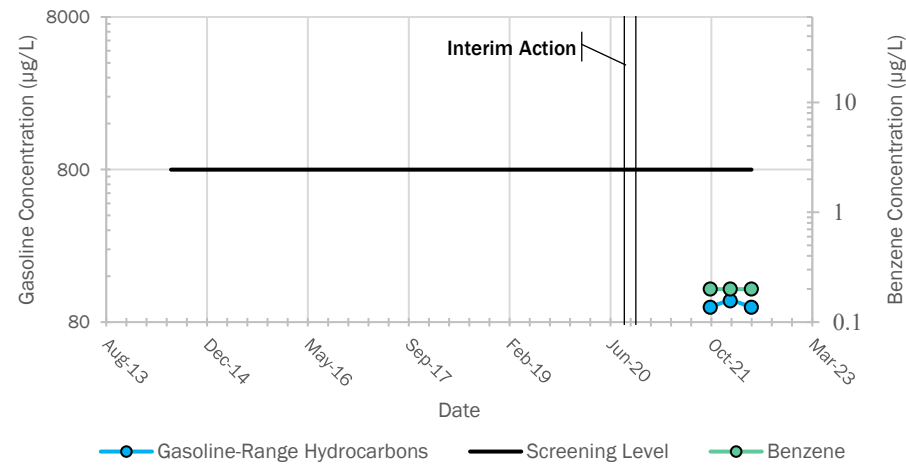
**Southern Property Boundary Area Monitoring Wells**



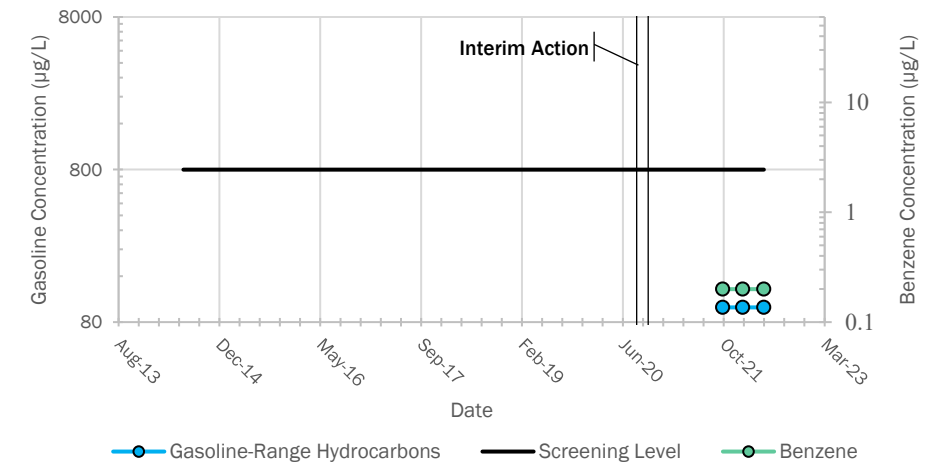
**MW-1/1A**



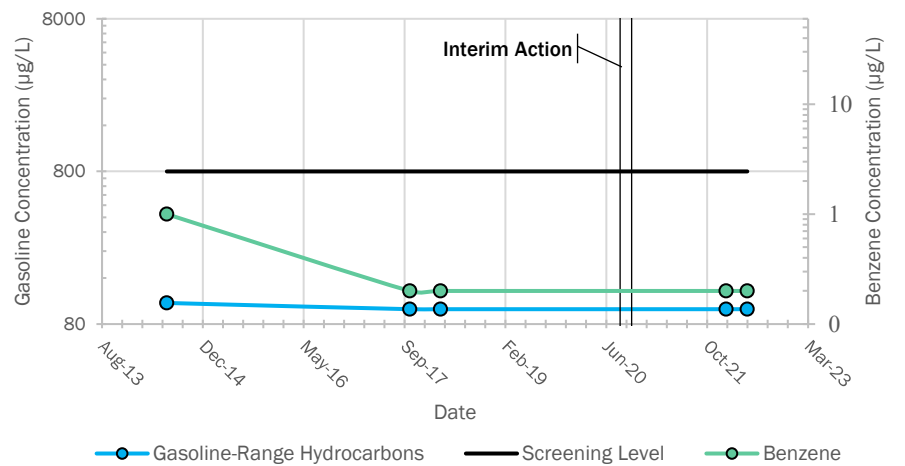
**MW-15**



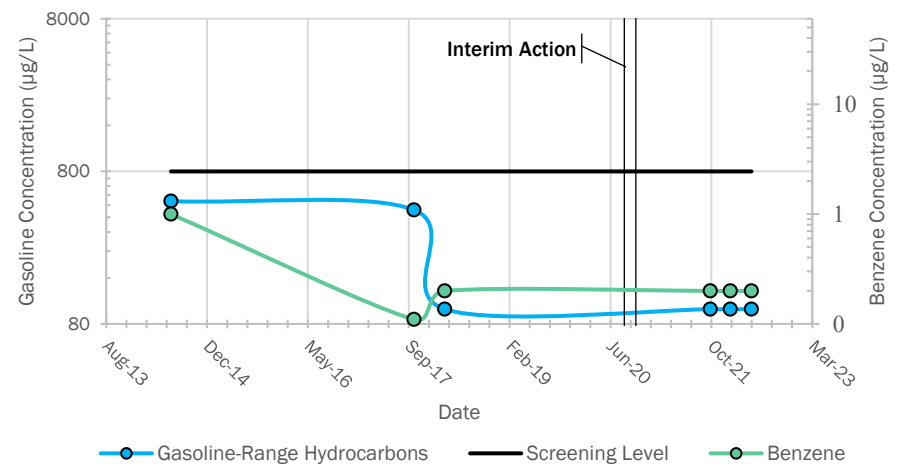
**MW-14**



**MW-2/2A**



**MW-4**



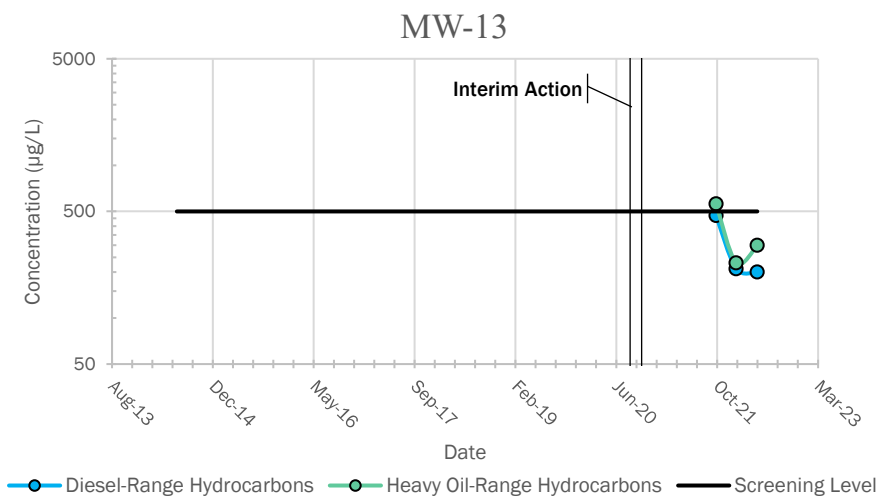
Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

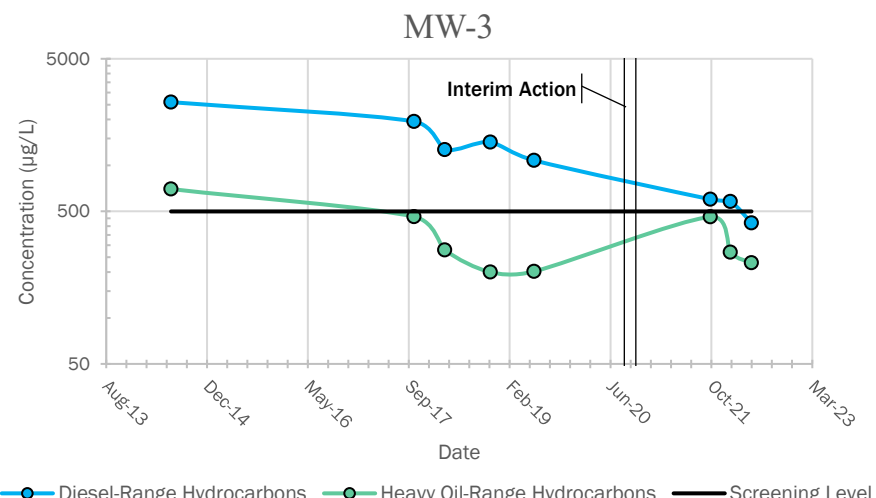
Data Source: Quiet Cove Groundwater Monitoring Data Results.

<b>Groundwater Summary Gasoline-Range Hydrocarbons and Benzene</b>	
Quiet Cove Anacortes, Washington	
	<b>Figure 3</b>

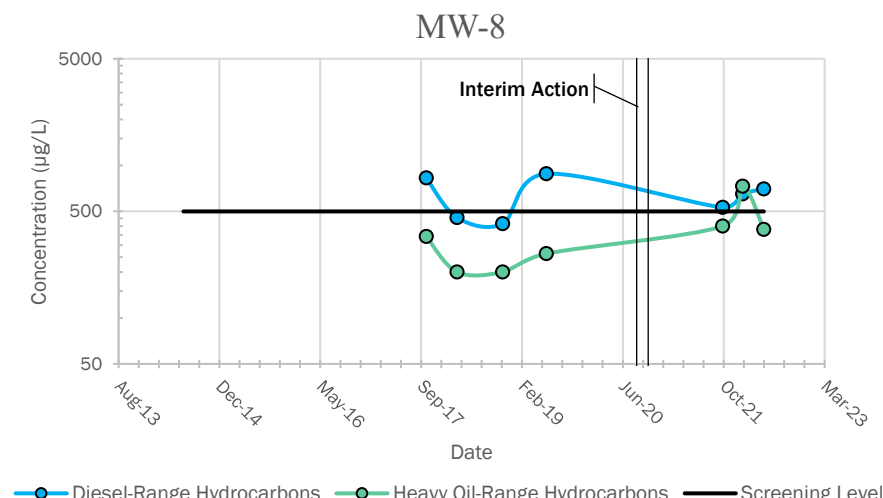
**Shoreline Area Monitoring Wells**



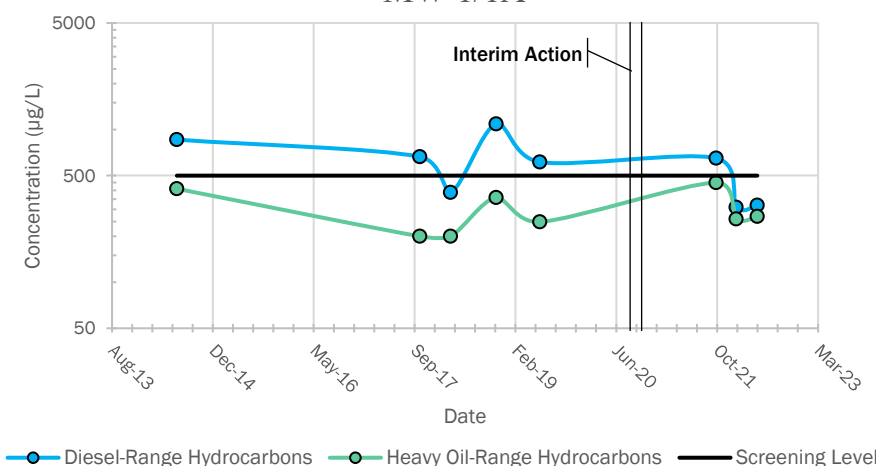
**2<sup>nd</sup> Street Area Monitoring Wells**



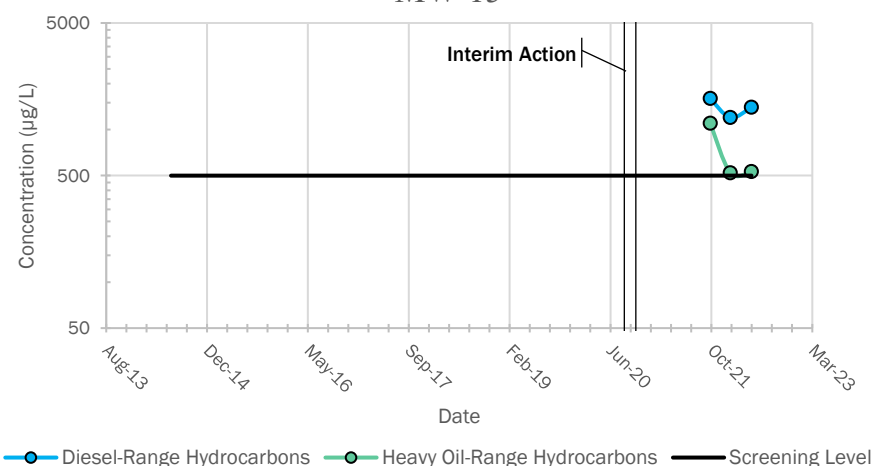
**Southern Property Boundary Area Monitoring Wells**



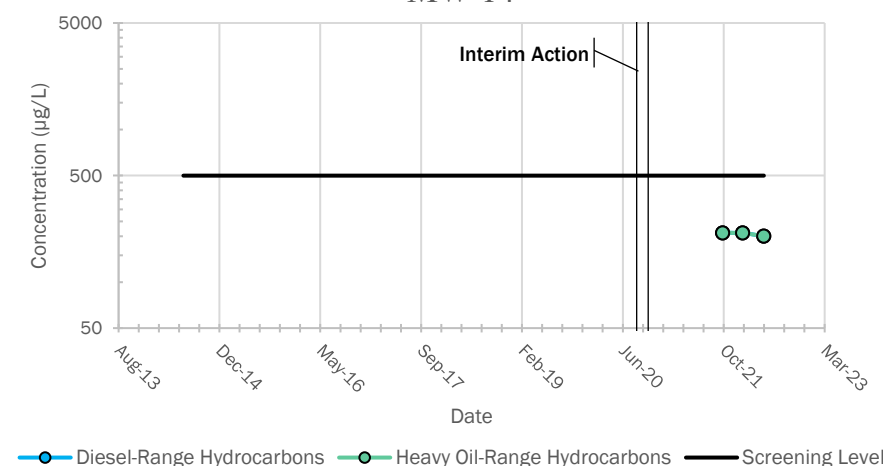
**MW-1/1A**



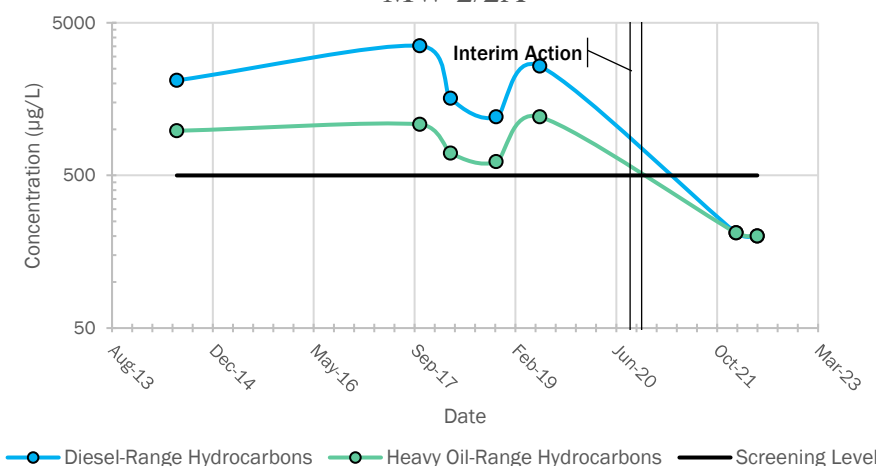
**MW-15**



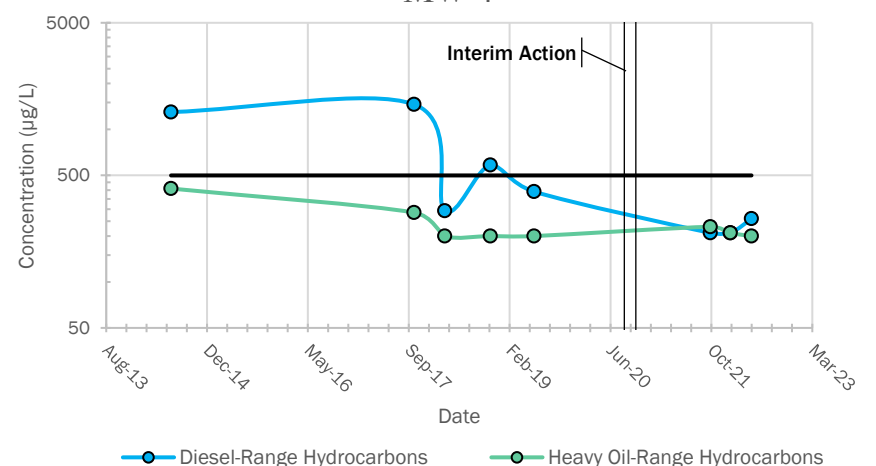
**MW-14**



**MW-2/2A**



**MW-4**



Notes:

1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Quiet Cove Groundwater Monitoring Data Results.

<b>Groundwater Summary Diesel and Heavy Oil-Range Hydrocarbons</b>	
Quiet Cove Anacortes, Washington	
	<b>Figure 4</b>